ATWATER-MERCED EXPRESSWAY PROJECT

State Clearinghouse Number 2006081138

Recirculated Draft Environmental Impact Report

Prepared by:
Merced County Association of Governments
(MCAG)

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Acronyms and Abbreviations

AME	Atwater Merced Expressway
BCE	Before Common Era
BNSF	Burlington Northern Santa Fe
CAADC	Castle Airport and Aviation Development Center
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCIC	Central California Information Center
CDOF	California Department Of Finance
CEQA	California Environmental Quality Act
CIDH	Cast-In-Drilled-Hole
CISS	Cast-In-Steel-Shell
CO	Carbon Monoxide
CRHR	California Register of Historic Resources
DEIR	Draft Environmental Impact Report
DLAC	Drivers License Address Change
DPR	Department of Parks and Recreation
EB	East Bound
EIR	Environmental Impact Report
°F	degrees Fahrenheit
FEIR	Final Environmental Impact Report
FMMP	Farmland Mapping and Monitoring Program

FTIP	Federal Transportation Improvement Program
HIC	Highway Interchange Centers
HU	Housing Unit
JPA	Joint Powers Authority
LAFCO	Local Agency Formation Commission
LOS	Level Of Service
MCAG	Merced County Association of Governments
MSE	Mechanically Stabilized Earth
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NOC	Notice Of Completion
NOP	Notice Of Preparation
NO_2	Nitrogen Dioxide
NRHP	National Register of Historic Places
O_3	Ozone
OSHA	Occupational Safety and Health Administration
PM-	Particulate Matter (less than or equal to sub-number in microns)
Pb	Lead
ppm	parts per million
ROG	Reactive Organic Gases
ROW	Right Of Way
RRC	Rural Residential Centers
RTP	Regional Transportation Plan
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin

SJVAPCD	San Joaquin Valley Air Pollution District
SOI	Sphere Of Influence
SO2	Sulfur Dioxide
SR-	State Route
SUDP	Specific Urban Development Plans
SVP	Society of Vertebrate Paleontology
UCMP	University of California Museum of Paleontology
UP	Union Pacific
USEPA	U.S. Environmental Protection Agency
WB	West Bound

CHAPTER 1 INTRODUCTION

As Lead Agency, the Merced County Association of Governments (MCAG) has determined that the Draft Environmental Impact Report (DEIR), published in March 2008, for the Atwater-Merced Expressway Project (hereinafter "project" or "AME project") should be recirculated pursuant to the provisions of the *California Environmental Quality Act* (CEQA) as a result of several changes that have been made in the project design in response to comments received on the DEIR. This Recirculated Draft EIR contains additional information and analysis of these changes as well as updated analyses where appropriate in response to public and agency comments. This Recirculated Draft EIR has been prepared in conformance with CEQA and its applicable implementation guidelines to inform the public, public agencies, and governmental decision-makers of potential environmental impacts of the AME project alternatives as currently being proposed. A discussion of the recirculation process is provided in Section 1.1, Recirculation of the Draft EIR.

The Atwater-Merced Expressway (AME) is a proposed 7-mile-long transportation corridor located in the northeast portion of Merced County. The AME would be a new expressway that would provide motor-vehicle travel between State Route (SR) 59 at Bellevue Road and SR 140 at Gurr Road providing an alternative route to existing SR 59 which travels through downtown Merced.

The AME project would be a new four-lane divided access controlled expressway with limited access cloverleaf style interchanges with major roadways (SR 99 and Santa Fe Drive) and signal-controlled intersections with local roads. The project would include the realignment of some existing roads, including a portion of SR 99, and the extension of some local roads to connect with the new expressway. Detailed information on the project features is included in **Chapter 3, Project Description.**

1.1 RECIRCULATION OF THE DRAFT EIR

According to section 15088.5 of the CEQA Guidelines, a lead agency is required to recirculate an EIR when significant information is added to the EIR after public notice is given as to the availability of the Draft EIR for public review and comment prior to certification of the EIR. Significant changes could include changes in the project description, project impacts, or environmental setting. New information added to an EIR is not considered significant, however, unless it results in a change in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect or a feasible way to mitigate or avoid such an effect.

The focus of this Recirculated Draft EIR is to update and provide additional analysis of changes to one of the AME project alternatives that were made after publication of the March 2008 Draft EIR. These changes were made in response to public and agency comments on the Draft EIR. MCAG circulated a Notice of Preparation (NOP) notifying responsible agencies and interested parties that a Draft EIR would be prepared for the project and indicating the environmental topics that were anticipated to be addressed. MCAG filed the NOP with the Governor's Office of Planning and Research (SCH # 2006081138) on August 25, 2006.

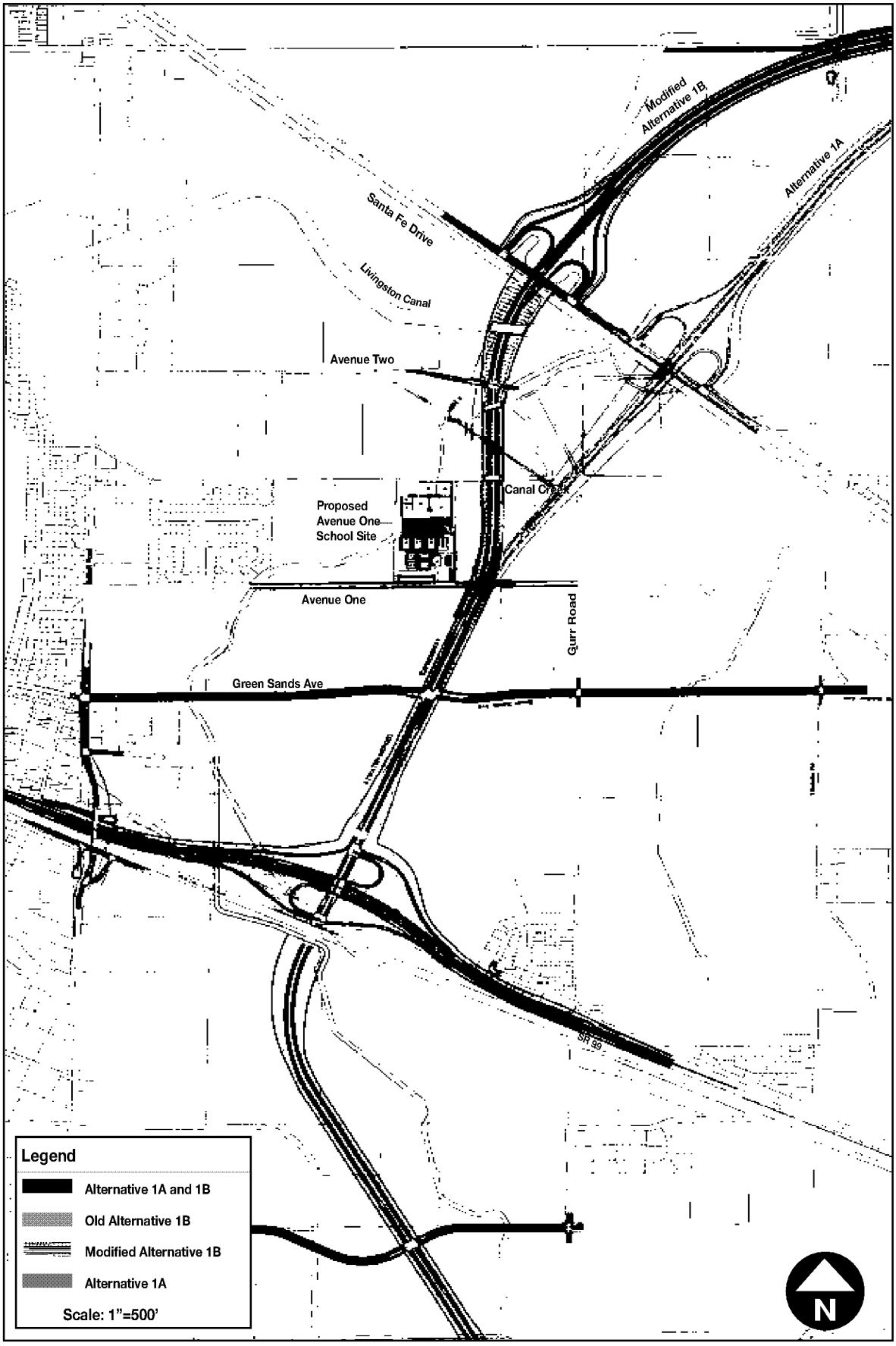
During the 30-day comment period ending September 25, 2006, written comments regarding the scope and content of the Draft EIR were received from regulatory agencies and interested parties. A copy of the NOP and comment letters received is provided in Appendix A. MCAG and the project team performed extensive technical review of potential environment impacts, including protocol surveys for sensitive biological species, and used these technical reports as the basis of the Draft EIR. The Draft EIR was published on March 3, 2008 and circulated for public review during a 60-day review and comment period. A Public Hearing on the Draft EIR was held on April 1, 2008. Responses to the written comments received on the Draft EIR and comments from the Public Hearing were addressed and incorporated in a Final EIR, which was published August 8, 2008.

After publication of the Final EIR, but prior to certification, several project changes were made to one of the proposed AME project alternatives. The modifications were made due to concern raised by the Atwater Elementary School District (AESD) during the public comment period of the Draft EIR regarding the impacts of Alternative 1B, which would traverse a portion of a planned but not yet constructed school site (referred to as the "Avenue One school site"). While mitigation was identified in the Draft EIR to reduce this impact to a less-than-significant level by locating a new site for the not yet constructed school, meetings and consultation with the AESD and the California Department of Education determined that a more feasible solution would be to modify (realign) a 1.3-mile segment of Alternative 1B between Green Sands Avenue and Santa Fe Drive to avoid the current Avenue One school site. In addition to realigning the roadway to avoid the school site, the roadway would also be depressed to cross under Avenue One to maintain access to the schools site from the east along Avenue One. The original Alternative 1B alignment is no longer under consideration and has been replaced with "Modified Alternative 1B". **Figure 1-1** shows the realignment of Modified Alternative 1B. A description of both Alternative 1A and Modified Alternative 1B is provided in **Chapter 3, Project Description**. Because of these project changes, MCAG determined that the Draft EIR should be revised and recirculated for a new round of public review and comment.

1.2 PURPOSE OF THE RECIRCULATED DRAFT EIR

As Lead Agency, MCAG prepared this Recirculated Draft EIR to assess the potential significant environmental impacts of development of the project. CEQA requires all state and local government agencies to consider the environmental consequences of projects over which they have discretionary authority. This Recirculated Draft EIR is an informational document to be used during planning and decision making processes: it does not recommend approval or denial of the project. CEQA requires decision-makers to consider and balance the benefits of a proposed project against unavoidable environmental risks. This Recirculated Draft EIR is part of that decision-making process. After the Final EIR is published and certified as an adequate environmental document under CEQA, MCAG would decide whether or not to approve of the project, would select an alignment, and pursue right-of-way acquisition and construction.

Local, regional, and state government agencies may also use this document in subsequent decision making processes. The City of Merced, City of Atwater, and Merced County would use this document to incorporate the selected alignment of the AME project into the transportation elements of their General and land use plans and new development projects. Merced County would also consider a General Plan Amendment to add the AME project to the Countywide Circulation Diagram. The California Department of Transportation (Caltrans) would use this document to approve improvements within the State's right of way, including a new interchange and realignment of a segment of SR 99, and modification of the SR 59 / Bellevue Road and SR



ATWATER-MERCED EXPRESSWAY

Modified Alternative 1B

REVISED FIGURE

Source: Mark Thomas & Company, 2008.

140 / Gurr Road intersections. Potential significant impacts could occur in the following resource areas, which are therefore evaluated in this Recirculated Draft EIR.

1. Consistency with Existing Plans and Policies
2. Land Use and Agriculture
3. Population, Housing, and Employment
4. Visual Resources
5. Traffic and Transportation
6. Noise
7. Air Quality
8. Geology, Seismicity, and Soils
9. Hydrology, Drainage, and Floodplains
10. Hazards and Hazardous Materials
11. Biological Resources, and Wetlands
12. Paleontological and Cultural Resources
13. Utilities and Service Systems
14. Public Services

This Recirculated Draft EIR discloses the significant potential environmental impacts of the project; measures to reduce these effects; significant impacts that cannot be avoided; cumulative impacts; growth inducing impacts; and effects found not to be significant.

The Recirculated Draft EIR also addresses a reasonable range of alternatives that may avoid or substantially lessen potential environmental impacts, including the No Project Alternative, and alternatives that received initial evaluation but were subsequently eliminated from consideration.

This is a project-level EIR and potential environmental impacts associated with the project are evaluated at a project level of analysis. Therefore, no additional environmental review or evaluation would be necessary to construct the project unless changes are made to the scope or design of the project that would result in new or more severe environmental impacts (CEQA Guidelines § 15162 (a)).

1.3 REPORT ORGANIZATION

This Recirculated Draft EIR is organized into the following chapters:

Chapter 1–Introduction: provides an introduction and overview describing the focus of the Draft EIR and the environmental review process.

Chapter 2–Executive Summary: summarizes the project and environmental consequences that would result from the project, provides a summary table of significant environmental impacts, identifies mitigation measures, and indicates the levels of significance of impacts after mitigation.

Chapter 3–Project Description: describes the project, the project location, project objectives, and required project approvals.

Chapter 4–Environmental Setting, Impacts, and Mitigation Measures: describes the environmental setting and provides an analysis of the environmental impacts of the project, identifying mitigation measures for any significant environmental impacts.

Chapter 5–Cumulative: provides an analysis of the cumulative impacts thought likely to occur due to the combined effects the project with other planned or ongoing projects in the region.

Chapter 6–CEQA-Required Conclusions: provides a summary of significant environmental impacts, including unavoidable and growth-inducing impacts and cumulative impacts.

Chapter 7– Alternatives: provides an evaluation of the No Project Alternative and a discussion of the other alternatives considered but rejected as infeasible.

Chapter 8–Report Preparation: provides a list of the firms and agencies involved in creating this report.

Chapter 9–References: provides a bibliography of the sources used in preparing this report.

1.4 SUMMARY OF REVISIONS TO RECIRCULATED DRAFT EIR

This Recirculated Draft EIR builds on the prior Draft EIR and includes additional analysis and updates previous analyses where necessary to fully address the potential impacts of Modified Alternative 1B. In addition, the text of the Recirculated Draft EIR has been updated in some sections to address public and agency comments received on the prior Draft EIR and to correct typographical errors.

For the benefit of the reader, this Recirculated Draft EIR highlights the additions and changes that have been made since the March 2008 Draft EIR. New text that has been added to the EIR is shown in **bold underline**, while deleted text is shown in strikeout (~~example~~). Revisions to figures are also identified with the text "Revised Figure."

The majority of the Chapters and Sections within this Recirculated Draft EIR have been updated and revised to include the evaluation of potential environmental impacts associated with project changes and/or to respond to comments received on the Draft EIR. Nearly all Chapters and Sections have been revised to address environmental effects of the realignment of Modified Alternative 1B[1]. Major changes were made to reflect::

> **Realignment of Alternative 1B to Avoid AESD School Site.** As the AME project has been modified to avoid the Avenue One school site, it was necessary to re-evaluate the project in the context of being constructed near a school. Sections 4.6 Noise, 4.7, Air Quality, 4.10, Hazardous Materials, and 4.15, Public Services, were updated to include a discussion of the school site and to evaluate environmental impacts associated with its proximity to the AME.

[1] Section 4.1, Consistency with Existing Plans and Policies, Section 4.4, Visual Resources, and Section 4.13, Utilities and Service Systems, did not require text revision. Figures were revised to correctly show the location of Modified Alternative 1B. There were no changes to Sections 4.8, Geology, or 4.12, Cultural Resources.

Changes in Impacts Associated with the Modification of Alternative 1B. Because Modified Alternative 1B slightly changes a 1.3 mile stretch of the roadway alignment, additional analysis was provided to correctly document potential impacts to agricultural land, and biological resources. Additional analysis was also provided in the hydrology, traffic, noise, and air quality sections.

Project Effects on Dairies. In response to comments received on the prior Draft EIR, discussions of potential project effects on local dairy operations were added in Section 4.2, Land Use and Agriculture, and Section 4.3, Population, Housing and Employment.

Discussion of Right-of-Way Acquisition and Home and Business Relocations. A discussion of the process of right-of-way acquisition and the laws governing relocations of homes and businesses (including dairies) was added to Section 4.3, Population, Housing and Employment, in response to comments received on the prior Draft EIR.

Climate Change. To address the requirements of Assembly Bill 32 (AB 32), which requires the reduction of greenhouse gas emissions in California, the discussion of Global Climate Change has been substantially enhanced in Chapter 6, Cumulative Impacts.

1.5 ENVIRONMENTAL REVIEW PROCESS

MCAG has filed a Notice of Completion (NOC) with the Governor's Office of Planning and Research, State Clearinghouse indicating that the Recirculated Draft EIR is complete and is available for review and comment by the public and interested parties, agencies, and organizations. This Recirculated Draft EIR will be available for a review period of 45 days, as required by California law, beginning November 17, 2008.

The entire Recirculated Draft EIR is being recirculated to allow full opportunity for public comment. However, because the Recirculated Draft EIR has been updated and revised to address public and agency comments on the prior Draft EIR , MCAG requests that reviewers review the revised text before resubmitting their comments from the prior draft. Comments received on the Draft EIR are part of the administrative record. However, because the Recirculated Draft EIR has been updated and revised to address these previous comments, written responses to these prior comments will not be included in the Recirculated Final EIR unless re-submitted within the public comment period for the Recirculated Draft EIR.

Comments on the Recirculated Draft EIR must be received by January 5, 2009. Comments may be submitted in three different ways:

1. A public hearing on the Recirculated Draft EIR will be held during the public review period at a location and time to be announced in a separate notice**.** The public is invited to attend the hearing to offer oral and/or written comments.

   Written comments may be submitted to the following address:

   Merced County Association of Governments
   ATTN: Jesse Brown, Executive Director
   369 West 18th Street
   Merced, CA 95340

2. Consistent with State law, comments may also be sent via electronic mail to: **AMEcomments@mcagov.org**. Because emails are frequently not successfully delivered, senders of comments are encouraged to send their email "receipt requested" to confirm receipt or to follow up by mailing a printed version of their email to the address above.

While reviewing the Recirculated Draft EIR, reviewers should focus on the document's adequacy in identifying and analyzing effects on the environment and on the ways in which the significant effects might be avoided or mitigated.

Following the close of the 45-day public comment period, responses to public and agency comments will be prepared and published as a separate document. The Recirculated Draft EIR text and appendices, together with the responses to comments document, will constitute the Recirculated Final EIR (Recirculated FEIR). The Recirculated FEIR will be available to the public during a short review period (minimum 10 days by law), before MCAG considers certifying the document. At the close of the informal review period MCAG will consider certification of the Recirculated FEIR pursuant to the requirements of section 15090 of the CEQA Guidelines. If MCAG certifies the Recirculated FEIR and approves the project, a Notice of Determination will be prepared and filed with the State Clearinghouse and County Clerk's office.

Once the Recirculated FEIR is certified, MCAG will consider approval or denial of the project in open public hearings. Once this approving body approves the project, MCAG may go forward and seek the other necessary project approvals and entitlements.

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CHAPTER 2 EXECUTIVE SUMMARY

This **Recirculated** Draft Environmental Impact Report (**Recirculated** Draft EIR) has been prepared in accordance with the provisions of the California Environmental Quality Act (CEQA) to evaluate the potential impacts of the proposed Atwater-Merced Expressway **Project** (AME~~)~~ project**) and to update and provide additional analysis of the revised AME project since publication of the Draft EIR, published March 2008**.

2.1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analyses contained in **Chapter 4, Environmental Setting, Impacts and Mitigation Measures**. Section 15123 of the State CEQA Guidelines requires that an EIR summary include a discussion of: 1) potential areas of controversy; 2) significant impacts; 3) significant unavoidable impacts; and, 4) alternatives to the project.

2.1.1 POTENTIAL AREAS OF CONTROVERSY

The potential areas of controversy identified as part of the Notice of Preparation (NOP) process are listed below in **Table 2-1**. Each issue identified below is further discussed in Sections 4.1 through 4.13 of this **Recirculated** DEIR, which include detailed explanations of potentially significant impacts and corresponding mitigation measures.

Table 2-1 Areas of Controversy Identified in NOP Process

Environmental Issue Area	Areas of Controversy
Biological Resources and Wetlands	Wetland delineation needs to be completed and accepted by ACOE, 50 foot buffer from all wetlands and 100 foot buffer from high water mark of surface waters. 200 foot buffer from high water mark, wetlands and riparian vegetation along Canal Creek, Black Rascal Creek and other streams. Concerns raised about impacts to animals that use creeks, streams, waterways (Black Rascal Creek; Canal Creek; Henderson Lateral), riparian habitat and wetlands.
	Need to address other special status species, including hairy orcutt grass, Swainson's Hawk, California linderiella, Sanford's Arrowhead, tricolored blackbird.
Hydrology and Water Quality	Project may encroach on a flood control plan area and encroachment permit may be required.
	Concerns about impacts to creeks, streams, waterways (Black Rascal Creek; Canal Creek; Henderson Lateral), riparian habitat and wetlands. Water pollution during construction must be addressed.

Environmental Issue Area	Areas of Controversy
Public Services	Atwater School District has proposed an elementary site near the proposed project on Avenue One. City of Atwater has raised concerns regarding fire access.
Land Use	The portion of the area south of Santa Fe Drive and north of SR 99 is located within an area identified by the City of Atwater as a Phase I annexation Priority in the 2000 General Plan.
Utilities	Depending on alignment, the following Merced Irrigation District facilities could be impacted: Black Rascal Creek; Canal Creek; Livingston Canal; some smaller laterals; possibly some well sites. Relocations of PG&E and MID overhead electric transmission lines will be required.
Other Issue Areas Determined to Require Special Attention	
Traffic	Effects of regional transportation network
Growth Inducement	Potential for Project to induce growth that could lead to secondary impacts

Source: CirclePoint, 2007

2.2 ALTERNATIVES TO THE PROJECT

Chapter 4 of this **Recirculated** DEIR summarizes the potential impacts associated with two alternative alignments (Alternative 1A and Alternative 1B – described in Chapter 3, Project Description) of the project in accordance with Section 15126(d) of the CEQA Guidelines. The No Project Alternative is evaluated and discussed in Chapter 7 of this EIR.

2.3 SUMMARY OF IMPACTS

Table 2-1 summarizes each of the potentially impacts and corresponding mitigation measures identified in Chapter 4 of this DEIR. The table is arranged in four columns: 1) impacts; 2) level of significance prior to mitigation; 3) mitigation measures; and 4) level of significance after mitigation. For a complete description of potential impacts and mitigation measures, please refer to specific discussions contained in Chapter 4.

Levels of significance shown in Table 2-2 are categorized as follows:

S. Significant. A substantial, or potentially substantial, adverse change in the environment. Significant impacts can be reduced to a less than significant level through mitigation measures.

SU. Significant and Unavoidable. Significant and unavoidable impacts that cannot be reduced to a less-than-significant impact through mitigation.

LTS. Less than Significant. Impacts that do not meet or exceed an issue's significance criteria.

Table 2-2 Summary of Impacts and Mitigation Measures

Land Use and Agriculture	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
N/A	LTS	Although the conversion of farmland is considered a less than significant impact, MCAG shall mitigate for the loss of agricultural lands in conformance with any countywide program adopted by Merced County. Since approximately 2001, the County has approved several community plans for development areas where farmland impacts were mitigated with the requirement for conservation easements at a 1:1 ratio. The requirements have generally applied to impacts to Important or Prime Farmlands affected by the adoption of the plans, within the boundaries of the planned development areas. In the event that a countywide program is not adopted prior to the grading for the AME project, equivalent protection of farmlands at comparable value will be considered at a ratio of 1:1 for productive farmland converted for project implementation. Equivalent protection is defined as acquisition of conservation easements by the County that would protect 1 acre of productive farmland for each acre converted through fee title, easement, or other measure.	LTS

Environmental Impacts: Visual Resources	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact VIS-1: The construction, realignment, and expansion of roadways within the project area could create new sources of daytime and nighttime lighting that could adversely affect day or nighttime views in the area.	S	**Mitigation Measure VIS-1a:** Lighting at construction sites shall be shielded and shall face downwards at lot lines so as to not be directly visible from any adjoining sensitive uses, such as residential areas, unless required to maintain safe levels of lighting for work and security, and as necessary to meet Occupational Safety and Health Administration (OSHA) standards. **Mitigation Measure VIS-1b:** Street lighting shall incorporate directional shielding so as not to shine directly on residential areas adjacent to the project site.	LTS
Impact VIS-2: The removal of existing vegetation within Caltrans facilities could adversely affect existing visual features in these	S	**Mitigation Measure VIS-2:** Any vegetation removal from within the state right-of-way as a result of the proposed construction activities shall be identified prior to removal and shall be replaced within project	LTS

Environmental Impacts: Visual Resources	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
areas.		limits at a ratio approved by Caltrans. Funds shall be set aside by the project sponsor for replacement highway planting. Replacement highway planting must be installed within two years of damage or removal of the existing planting. A minimum 3-year plant establishment period will be included to assure the success of the replacement highway planting. For any new plantings or plantings within project limits and Caltrans jurisdiction, barriers shall be installed, where possible without compromising motorist safety, in front of vegetation to avoid loss of tree and shrubs from vehicle collisions. During the construction of the project, ESA fencing shall be used to protect existing trees and shrubs will be required.	
Impact VIS-3: The construction and modification of project features within state facilities could be inconsistent with the visual character being implemented along SR 99.	S	**Mitigation Measure VIS- 3:** Project facilities and features along SR 99 shall be constructed with aesthetic treatments consistent with the design guidelines provided in the Route 99 Corridor Enhancement Master Plan. These design guidelines shall apply to bridges, median plantings and soundwalls on SR 99 within project limits. The aesthetic design shall be approved by Caltrans prior to modification of any state facilities. These aesthetic treatments should be coordinated through the Caltrans Landscape Architecture unit and the Bridge Aesthetics unit at Caltrans Headquarters. This coordination with Caltrans and the incorporation of design features consistent with the Route 99 Corridor Enhancement Master Plan would reduce any impacts related to inconsistent visual features to a less-than-significant level. Required design features are likely to include aesthetics treatments such as: • Extended Gore Paving • Color or architectural concrete barrier used on bridge structures • Color or texture on slope paving under a bridge abutment • Color or arch work on the bridge fence • Use of ~~a cobblestone~~ aesthetic treatment**s** on new soundwalls along SR 99	LTS

Environmental Impacts: Traffic and Transportation	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact TRAF-1: During construction, the project may result in inadequate emergency access.	S	**Mitigation Measure TRAF-1:** During construction of the AME, the project sponsor shall be required to provide a minimum number of through lanes and turning lanes open on all existing roadways to accommodate vehicular traffic. Emergency service providers in the City of Atwater, the City of Merced, and Merced County shall be notified throughout the construction phase as to any road closures or detours as lane reductions in existing roadways would impede emergency access.	LTS

Environmental Impacts: Noise	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact N-1: Project construction would cause a substantial temporary or periodic increase in ambient noise levels, groundborne vibration, and groundborne noise levels in the project vicinity above existing levels.	S	**Mitigation Measure N-1:** Project Sponsor shall enforce the following actions during construction of the AME: • Noise-generating activities at the construction site or in areas adjacent to the construction site associated with the project in any way shall be restricted to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday. Should it become necessary to work on weekends, holidays, or after 7:00 p.m., residents shall be notified and noise levels for the needed work shall be subject to a special provision that would limit noise levels from construction activities to not exceed 82 dBA at 50 feet. • All internal combustion engine driven equipment shall be outfitted with appropriate intake and exhaust mufflers in good condition. • "Unnecessary" idling of internal combustion engines shall be strictly prohibited. • Staging of construction equipment shall be avoided within 200 feet of residences and all stationary noise-generating construction equipment, such as air compressors and portable power generators, shall be placed as far as practical from existing noise sensitive receivers. Temporary barriers to screen stationary noise generating equipment shall be utilized when located in areas adjoining noise sensitive land uses. • "Quiet" air compressors and other stationary noise sources shall be utilized where technology allows such uses. • All construction traffic to and from the project site shall be routed via designated truck routes. Construction related heavy truck traffic shall be prohibited in	LTS

Environmental Impacts: Noise	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
		residential areas where feasible. Construction truck traffic shall be prohibited in the project vicinity during non-allowed hours. • All adjacent residents to the project site shall be notified of the construction schedule in writing. • A "noise disturbance coordinator" responsible for responding to any local complaints about construction noise shall be designated. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. A telephone number for the disturbance coordinator at the construction site shall be conspicuously posted and included in the notice sent to neighbors regarding the construction schedule. (Merced County and the City of Atwater shall be responsible for designating a noise disturbance coordinator and the contractor shall be responsible for posting the phone number and providing construction schedule notices). • **If the Avenue One school site is open prior to or during construction of the AME project, grading operations within 500 feet of the schools site shall be coordinated with the school schedule such that major grading activities do not occur at times when school is in session. The grading plans shall indicate which areas are to be avoided to prevent disruption of school activities.**	
Impact N-2: Implementation of the AME project would cause a substantial permanent increase in ambient noise levels in the project vicinity and expose persons to noise levels in excess of standards established in the City of Atwater or Merced County General Plans.	S	**Mitigation Measure N-2:** The project sponsor shall use all available techniques, including the construction of sound walls or earthen berms, and/or the use of quiet paving materials, to reduce exterior noise levels at impacted noise receivers to meet Merced County noise standards. Because of the rural nature of the project study area, it was recommended by Caltrans that a feasibility and reasonable cost allowance study be conducted to evaluate the costs associated with construction of soundwalls compared to the benefit they would provide. This analysis is provided in the noise study (Appendix D). The reasonableness allowance considers the absolute future noise level, the noise level increase caused by the project, the achievable reduction provided by a sound wall, and the age of the dwelling unit. A base reasonable cost allowance of $36,000 per benefited residence (or residential equivalent) was applied. The majority of the sound walls are considered feasible to construct, however, none of the sound walls evaluated would be considered reasonable under FHWA/Caltrans guidelines. CEQA requires that significant impacts be mitigated to the extent possible and in most locations the use of a final coat of open graded asphalt concrete (OGAC) over the Portland	SU

Environmental Impacts: Noise	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Cement Concrete (PCC) roadway surface would reduce impacts to a less than significant level. The FHWA noise model indicates that there is a difference in noise generation of about 3-dBA between OGAC and PCC pavement types. Given a substantial traffic volume, recent research indicates differences of up to 10 dBA immediately adjacent to roadways. The use of OGAC is far more economical than the construction of sound walls. Therefore, where feasible and where its use would reduce noise levels below county standards, OGAC shall be used as the top layer of paving surface on the AME. Some jurisdictions, including the FHWA, do not recognize the placement of OGAC alone as sufficient mitigation to reduce noise levels. Therefore, under existing guidelines, the paving on state (Caltrans) facilities with OGAC would not be considered adequate mitigation. In these cases, soundwalls shall be constructed to reduce noise levels at receiver locations below County standards.	

Environmental Impacts: Air Quality	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact AQ-1: The AME project would result in temporary increases in PM_{10} emissions requiring compliance with SJVAPCD's Regulation VIII.	S	**Mitigation Measure AQ-1:** To control the generation of construction-related PM_{10} emissions, MCAG shall comply with SJVAPCD Regulation VIII, as summarized below: • ~~Several PM_{10} dust controls shall be required to be implemented at all construction sites.~~ • All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively established of dust emissions using water, chemical stabilizer/suppressant, or covered with a tarp or other suitable cover or vegetative ground cover. • All on-site unpaved roads and offsite-unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. • When materials are transported on or off site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard	LTS

Environmental Impacts: Air Quality	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
		space from the top of the container shall be maintained. • All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at 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). • 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. • 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. • Any site with 150 or more vehicle trips per day shall prevent carryout and trackout. • Limit traffic speeds on unpaved roads to 15 mph; and • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. Conformity with the best management practices established in SJVAPCD's Regulation VIII would limit the generation and release of particulate matter resulting from construction activities. Therefore, any impacts would be less than significant.	
Impact AQ-2: The AME project would result in temporary impacts arising from elevated concentrations of PM_{10} and CO, as well as increased emissions of ROG's and NO_2 due to project construction.	S	**Mitigation Measure AQ-2:** The AME project shall comply with San Joaquin Valley Air Pollution Control District recommended measures as listed below: • Use of alternative fueled or catalyst diesel construction equipment • Minimize idling time (e.g., 10 minute maximum) • Limit the hours of operation of heavy duty equipment and/or the amount of time in use • When feasible replace fossil-fueled equipment with electrically driven equivalent (provided they are not run via a portable generator set) • Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways • Implement activity management (e.g., rescheduling activities to reduce short term impacts) • Comply with Rule 4641 of the SJVAPCD – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations Conformity with the above measures will reduce emissions of PM_{10} and CO, as well as	LTS

Environmental Impacts: Air Quality	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
		emissions of ROG's and NO_2. Properly managing the amount of time emissions producing equipment is utilized and substituting electrical equipment for fossil fueled equipment whenever feasible, will reduce overall emissions, reducing this impact to a less-than-significant level.	
Impact AQ-3: Construction of the AME project would result in generation of more than two tons of NO2 in non-conformance with SJVAPCD Rule 9510.	S	**Mitigation Measure AQ-3:** The AME project shall comply with San Joaquin Valley Air Pollution Control District Rule 9510 by achieving: • A 20 percent NO2 and 45 percent PM10 reduction in exhaust emissions compared to the statewide fleet average. This can be met by implementing one or more of the following: • Retrofitting existing equipment with control devices, • Using cleaner fuels, • Operating newer than average equipment, • Payment of a mitigation fee to District to obtain reductions through grant and incentive programs. Compliance with the above requirements will reduce emissions of NO_2 through the utilization of fuels that produce less of this pollutant and maximizing efficient use of fuel through use of newer than average equipment utilizing appropriate control devices. Furthermore, in the event that emissions targets are not met on-site through implementation of the other measures, payment of a mitigation fee to the SJVAPCD would help reduce emissions of NO_2 in other areas of the Air Basin by helping to fund more effective air quality measures elsewhere. Implementation of the above mitigation measures would reduce this impact to a less-than-significant level.	LTS

Environmental Impacts: Geology, Seismicity, and Soils	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact GEO-1: During project operation, seismic related-liquefaction and lateral spreading could occur, causing destabilization of roadways,	S	**Mitigation Measure GEO-1:** Further investigation of liquefaction potential (looking at subsurface soil conditions and groundwater conditions) by a qualified geologist, certified by the State of California, shall be performed during the final engineering and design phases of the project, once a final	LTS

Environmental Impacts: Geology, Seismicity, and Soils	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
overhead structures and approaches. This could result in damage to the project and create a hazard to people on the roadway structures.		alignment is selected. This investigation shall include a vertical pile capacity analysis which shall consider post-liquefaction settlement. Recommendations given in this investigation shall be consistent with the Caltrans Highway Design Manual. Recommendations of this investigation shall be incorporated into the final project designs and approved by MCAG and Caltrans for work within the State's ROW prior to issuance of permits to construct.	
Impact GEO-2: Seismic ground shaking could damage the project and cause bridge collapse which could harm people in the vicinity, including motorists.	S	**Mitigation Measure GEO-2:** Once a final alignment is selected for the project, a detailed geotechnical evaluation shall be preformed by a qualified geologist, certified by the State of California. This evaluation shall identify specific areas of concern for seismic ground shaking and provide mitigation measures consistent with the Caltrans Highway Design Manual. Recommended mitigation measures from this evaluation shall be incorporated into the project design and the seismic design of the project shall be approved by MCAG and Caltrans for improvements within the State's ROW prior to issuance of permits to construct.	LTS
Impact GEO-3: Unstable soils pose a threat to the structural integrity of the project's bridge structures.	S	**Mitigation Measure GEO-3:** Recommendations on foundation design shall be made in the final geotechnical evaluation, which is to be performed by a qualified geologist, certified by the State of California, during the PS&E phase. Foundation recommendations in the geotechnical evaluation shall be based on further investigation of subsurface conditions and structural design requirements. In is anticipated that recommendations could include design features that would exceed the structural integrity of Standard Class piles. These recommendations shall be approved by Caltrans and MCAG and incorporated into the project.	LTS
Impact GEO-4: In areas where the use of fill material is required, post construction settlement could occur at project embankments since their construction would require fill to be placed on top of existing very stiff silt/sandy silt and very loose to very dense sand silty/sand. Settlement could damage the project structures, which could create hazards to motorists on the expressway.	S	**Mitigation Measure GEO-4a:** Once a final alignment is selected for the project, a detailed geotechnical evaluation shall be preformed by a qualified geologist certified by the State of California. This study shall address potential post construction settlement at project embankments and shall recommend appropriate mitigation measures consistent with Caltrans design guidelines. Caltrans standard embankment settlement period may be required from 60 days to 90 days depending upon site-specific condition as determined by the geotechnical evaluation. **Mitigation Measure GEO 4b:** Embankment fill shall be placed in accordance with the Caltrans Highway Design Manual guidelines, which requires structure approach embankment material to be compacted to a 95 percent relative compaction.	LTS

Environmental Impacts: Geology, Seismicity, and Soils	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Mitigation Measure GEO 4c: Retaining walls needed to retain approach embankments at Route 99 and Santa Fe Drive, and grade separations at the Burlington Northern Railroad and Union Pacific Railroad tracks shall be constructed of either mechanically stabilized earth [MSE] walls (the preferred option) or Caltrans standard cantilever walls. Proper backfill compaction; drainage; adequate bearing capacity; and retaining and grade separation wall type shall be determined by a qualified geologist, certified by the State of California, in the geotechnical evaluation that will be prepared for the project. Recommendations of the geotechnical evaluation shall be implemented and final designs shall be reviewed and approved by MCAG and Caltrans for improvements within the State's ROW prior to the issuance of permits to construct.	

Environmental Impacts: Hydrology, Drainage, and Floodplains	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact HWQ-1: Construction activities would increase erosion potential by exposing soils that can be transported into nearby creeks and storm drains with stormwater runoff.	S	**Mitigation Measure HWQ-1a:** **Consistent with requirements of the NPDES program, the project sponsor shall obtain an individual local permit or multiple permits (depending on phasing plan), subject to approval by the RWQCB.** ~~The project sponsor shall prepare a SWPPP as required under the Caltrans statewide NPDES permit (99-06-DWQ) for areas within state jurisdiction. A NOI shall be filed, under the Caltrans NPDES Permit. To comply with the conditions of the Caltrans NPDES Permit, and to address the temporary water quality impacts resulting from the construction activities of this project, Standard Special Provision (SSP) 07-345 will be included in the Plans, Specifications, and Estimates. This SSP will address water pollution control work and the implementation of a SWPPP during construction.~~ **Mitigation Measure HWQ-1b:** The project sponsor shall prepare a SWPPP~~for areas outside of state jurisdiction~~, as required under the individual local permits that will be approved by the RWQCB. A NOI shall be filed under the local permits. To comply with the conditions of these permits, and to	LTS

Environmental Impacts: Hydrology, Drainage, and Floodplains	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
		address the temporary water quality impacts resulting from the construction activities of this project, a SWPPP will be required before construction. **Mitigation Measure HWQ-1c:** The SWPPP required for this project shall include the following elements: • *Project Description* - Includes maps and other information related to construction activities and potential sources of pollutants. • *Minimum Construction Control Measures* - These may include limiting construction access routes, stabilization of areas denuded by construction, and using sediment controls and filtration. **The plan will include the design of construction site Best Management Practice (BMP) requirements, per the Caltrans' Project Planning Design Guide and stormwater guidance manuals.** • *Erosion and Sediment Control* - The plan is required to contain a description of soil stabilization practices, control measures to prevent a net increase in sediment load in stormwater, controls to reduce tracking sediment onto roads, and controls to reduce wind erosion. • *Non-Storm Water Management* - The plan will include provisions to reduce and control discharges other than stormwater. • *Post-Construction Storm Water Management* - The SWPPP requires the development of stormwater control measures to provide ongoing protection of water resources. **The plan will include permanent treatment, pollution prevention, and maintenance BMPs.** • *Waste Management and Disposal* - All wastes (including equipment maintenance waste: used oil, batteries) must be disposed of as required by state and federal law. • *Maintenance, Inspection, and Repair* - The plan requires an ongoing program to insure that all controls are in place and operating as designed. • *Monitoring* - This provision requires documented inspections of the control measures. • *Reports* – MCAG will prepare an annual report on the construction project and submit this report to the RWQCB. The report must certify compliance with the SWPPP. • *Training* - Inspections, maintenance and repair must be done by trained personnel. **Mitigation Measure HWQ-1d:**	

Environmental Impacts: Hydrology, Drainage, and Floodplains	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Erosion control measures shall be applied to all exposed areas during construction. Erosion control measures may include the trapping of sediments within the construction area by placing barriers, such as straw bales, at the perimeter of downstream drainage points or by construction of temporary detention basins. Other methods of minimizing erosion impacts may include hydromulching and limiting the amount and length of exposure of graded soil. The temporary erosion control and water quality measures shall be defined in detail in the SWDR and SWPPP. **Mitigation Measure HWQ-1e:** In areas where the proposed roadway alignment would cross creeks and canals, a structure (such as a box culvert) shall be added to convey the flow of water under the roadway. Figure 4.9-3 shows the location of these structures. Alternative 1A will require one structure across Canal Creek and one structure across Black Rascal Creek. Alternative 1B will require four structures across Canal Creek, one structure across Livingston Canal, and one structure across Black Rascal Creek. The proposed interchange improvements at SR 99 (common to both alternatives) cross Canal Creek four times, two of which require new conveyance structures to be built. Design and flow rates for the conveyance structures will be determined by a final hydraulic report as approved by Merced County. Included in Table 4.9-1 are the temporary control measures that will likely be part of the project. Construction BMPs (as listed in Table 4.9-1) are temporary BMPs that contractors are required to implement to meet BCT/BATEA requirement for construction. The selected temporary BMPs are consistent with the practices required under State of California NPDES General Permit for storm water discharges associated with construction activities. Compliance with the Caltrans statewide NPDES and individual local permits should reduce or avoid potentially substantial construction-related water quality impacts. Implementation details of these mitigation measures shall be developed and incorporated into the project design and operations prior to project construction. With proper implementation of these mitigation measures, short-term or temporary construction-related water quality impacts will be minimized.	
Impact HWQ-2: Spills and leaks of lubricants and other fluids associated with vehicles and equipment used during construction activities would	S	**Mitigation Measure HWQ-2:** Mitigation Measures HWQ-1A through HWQ-1C would reduce construction vehicle and equipment related water pollution to a less than significant level.	LTS

Environmental Impacts: Hydrology, Drainage, and Floodplains	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
increase the potential for pollution transported by stormwater runoff into nearby creeks and storm drains.			
Impact HWQ-3: Pollutants associated with vehicles would be deposited on the roadway during project operation and would be transported by stormwater runoff into nearby creeks and storm drains adversely affecting water quality.	S	**Mitigation Measure HWQ-3a:** The applicant shall prepare a SWPPP and apply for inclusion in the Caltrans NPDES permit as required under Mitigation Measure HWQ-1A. As required under the NPDES permit, the project will include both Design Pollution Prevention and Treatment BMPs to treat stormwater pollution during project operation. **Mitigation Measure HWQ-3b:** When establishing Design Pollution Prevention BMPs for the project, MCAG shall consider all of the following affects: • Downstream Effects Related to Potentially Increased Flow – The project will discharge to unlined channels. As a result, erosion control shall be applied to the ditches. There is the potential for increased sediment loads to be transported to downstream waterways; therefore permanent erosion control measures shall be applied to all new or exposed slopes. The project will cross several waterways, and there may be the potential for creating unstable channel conditions. BMPs will address the stability of channels crossed by the project • Preservation of Existing Vegetation – At all locations, preserving existing vegetation is beneficial. • Concentrated Flow Conveyance Systems – The project will: A) have the potential to cause gullying, B) create or modify existing slopes, C) be subject to roadway flooding, D) require the concentration of surface runoff, and E) require cross drains. Each of these conditions will require the proper design of the following drainage facilities to handle concentrated flows. o Ditches, berms, dikes and swales o Overside drains o Flared end sections o Outlet protection/velocity dissipation devices • Slope/Surface Protection Systems – The project will create or modify existing slopes requiring the application of one or more of the following control measures. o Vegetated surfaces o Hard surfaces	LTS

Environmental Impacts: Hydrology, Drainage, and Floodplains	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Mitigation Measure HWQ-3c: Detention and infiltration devices shall be implemented as approved Treatment BMPs. Soil erosion shall be primarily handled with the proper design of landscaping and the application of final ground treatment BMPs, such as planting and fiber rolls. Detention basins shall also be used to reduce the sediment and particulate matter in stormwater runoff. A detention basin is a permanent treatment BMP designed to reduce the sediment and particulate matter in stormwater runoff. Water stops flowing once it reaches a detention	
Impact HWQ-4: Development of the AME project would increase pollution in groundwater since pollutants washed off the roadway may percolate into and contaminate groundwater.	S	**Mitigation Measure HWQ-4a:** The applicant shall prepare a SWPPP and apply for inclusion in the Caltrans NPDES permit as required under Mitigation Measure HWQ-1A, 1B, and 1C. As required under the NPDES permit and discussed under Mitigation Measures HWQ-3B and 3C, the project will include both Design Pollution Prevention and Treatment BMPs required to treat stormwater pollution. **Mitigation Measure HWQ-4b:** **If Modified Alternative 1B is selected, groundwater quality testing shall be performed, specifically in the area of the depressed section between Green Sands Avenue and Canal Creek, to verify the presence of groundwater contaminants. If contaminants are present in the groundwater, groundwater treatment shall be required.**	LTS
Impact HWQ-5: The AME project would convert pervious surface area into impervious surface area which would increase the amount of stormwater runoff in the project study area to a level that would exceed the capacity of existing or planned stormwater drainage systems.	S	**Mitigation Measure HWQ-5a:** New drainage facilities shall be constructed where needed. New roadside ditches and detention basins will be constructed to accommodated increased stormwater flows. Existing drainage systems may need to be extended or replaced if undersized. The specifications of roadside ditches will be finalized during the final phase of the project, although the ditches must be built with a minimum 4:1 side slope. The use of detention and infiltration basins and BMPs as discussed in Mitigation Measure HWQ-3C will be implemented so that untreated runoff does not adversely affect roadside ditches. Detention basins are proposed at each of the water body crossings either along the main roadway or in the loop areas. Fourteen detention basins would be required for Alternative 1A and thirteen detention basins required for **Modified** Alternative 1B. The construction of drainage facilities is complicated by the flat terrain and that the elevations of the receiving waters would be higher than the roadside ditches. In order to overcome the drainage challenge presented by minimal difference in elevation, installation of pumps may	LTS

Environmental Impacts: Hydrology, Drainage, and Floodplains	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
		be required at the end of these ditches in order to drain runoff from the roadside ditches to the existing canals. The design of roadside ditches shall be based on flow data calculations by the design engineer. Final design of roadside ditches shall be approved by the Merced County Department of Public Works and the Merced Irrigation District prior to issuance of the permit to construct. Final Design shall be based on procedures presented in the Caltrans Highway Design Manual, Fifth Edition and the Federal Highway Administration HEC-22 publication for highway pavement drainage. **Mitigation Measure HWQ-5b:** Detention basins shall be constructed to accommodate runoff resulting from a 25-year, 24-hour storm **and to collect any additional flood spill flows from nearby water bodies during major precipitation events**. Additional right-of-way would be required at all the proposed outfall locations ranging from approximately 100 to 150 feet of additional right-of-way width from the edge of the pavement. Pumps shall be installed after each detention basin to lift the detained stormwater and to meter the flow that reaches each water body. Final design shall be based on procedures presented in the Caltrans Highway Design Manual, Fifth Edition and the Federal Highway Administration HEC-22 publication for highway pavement drainage and approved by the Merced County Department of Public Works and the Merced Irrigation District prior to issuance of the permit to construct.	
Impact HWQ-6: Development of the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek would impact existing groundwater table due to its potentially high elevation at this location.	**S**	**Mitigation Measure HWQ-6:** **Depending on the depth of intrusion into the groundwater table, the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek shall be designed to avoid any intrusion of groundwater into the roadway. To avoid any cross contamination or interference of groundwater movements, an underground impermeable cutoff wall shall be constructed around and below the depressed section. In addition, a reinforced concrete section for the depressed section shall also be designed to resist uplifting due to groundwater. These elements for the depressed section of Modified Alternative 1B would evaluated during the deign phase of the AME project and a feasible solution would be developed in coordination with the applicable governing agencies.**	**LTS**
Impact HWQ-7: If Modified Alternative 1B is selected, motorists traveling on the depressed section of Alternative	**S**	**Mitigation Measure HWQ-7:** **For major precipitation events larger than the 10-year storm event, an alert system shall be installed to warn motorists traveling on the AME of potential hazards to floods**	**LTS**

Environmental Impacts: Hydrology, Drainage, and Floodplains	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
1B between Green Sands Avenue and Canal Creek would be exposed to significant hazards to floods during major precipitation events.		**within the depressed section of Modified Alternative 1B. Road signage alerting motorists of potential flooding hazards shall be installed south of Green Sands Avenue for northbound motorists and north of Avenue Two for southbound motorists. Flashing lights shall be installed on the roadway signage that would be used if the depressed section of Modified Alternative 1B were to become flooded. In the event that flooding occurs at the depressed section of Modified Alternative 1B, the depressed section of the AME shall be closed to motorists. Traffic shall be diverted onto Green Sands Avenue and Avenue Two and then to local roads between these two points to avoid exposure to hazards to floods in the depressed section of Modified Alternative 1B.**	

Environmental Impacts: Hazards and Hazardous Materials	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact HAZ-1: Construction of the project would require demolition of structures that may contain hazardous substances such as lead and asbestos. These substances would potentially threaten workers if not properly handled.	S	**Mitigation Measure HAZ-1a:** Once a final project alignment is selected, and well before permits to construct are issued, a Phase II testing report shall be completed. The Phase II shall be completed by a qualified hazards specialist as approved by the MCAG. The Phase II shall include, but not be limited to, surveys for asbestos and lead in buildings to be demolished, a work plan for demolition, and soil sampling to determine the amount and type of herbicides and pesticides in the soil from past agricultural uses in the project study area. Phase II study shall include soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and the location and contents of USTs in the project study area to the extent feasible. Soils along the railroad right of way shall be tested for heavy metals, TPH, and PAHs. Tests to be included in the Phase II study are described in Mitigation Measures HAZ-2 to HAZ-6. **Mitigation Measure HAZ-1b:** As part of the Phase II study, buildings and structures to be demolished shall be surveyed by a certified asbestos surveyor and tested for lead by an AHERA Accredited Building Inspector. A work plan for demolition will be developed and included in the Phase II report. The recommendations of the Phase II study shall be incorporated into final project plans.	LTS

Environmental Impacts: Hazards and Hazardous Materials	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Asbestos shall be removed and stored off-site prior to building/structure demolition by experts qualified to identify and remove asbestos. Similarly, Lead based paint will be appropriately contained off-site during the demolition process. Demolition shall comply with the California Department of Occupational Safety and Health (CAL/ OSHA) requirements regarding asbestos and lead paint removal. Asbestos is to be removed from the site and properly disposed of prior to, and as a condition of, the issuing a permit for site demolition.	
Impact HAZ-2: Grading and earthmoving activities could expose the public or construction workers to heavy metals in the soil from nearby railroad operations.	S	**Mitigation Measure HAZ-2:** In the event the construction involves installation of footings within the railroad right of way, soils along the railroad right of way shall be tested as part of the Phase II study mentioned in Mitigation Measure HAZ-1 for heavy metals, TPH, and PAHs. This study will be preformed once an alignment is selected for the project and prior to the issuance of permits to construct any portion of the project near the railroad lines. The number of borings and test methods shall be documented in a work plan for the Phase II study. Remediation for these substances shall depend on the contaminant nature, level, and estimated volume of soil contamination. Impacted soils may be capped under the road, treated onsite biologically or via stabilization, or sent offsite to an approved landfill. Remediation measures shall be approved by the MCAG prior to issuance of the permit to construct.	LTS
Impact HAZ-3: Grading and earthmoving activities may disturb soils that are potentially contaminated by known or unknown leaking USTs associated with farms in the project study area. Furthermore, if USTs under the project were to be abandoned, they could leak hazardous substances and create risks to human health and the environment over time.	S	**Mitigation Measure HAZ-3:** Underground storage tanks in the project study area shall be identified during the Phase II study and removed or otherwise mitigated. USTs shall be identified by a trained environmental professional through visual observation during a site visit, in interviews with the property owners, and during review of records at the City of Atwater and or Merced County Health Department. The project engineer shall retain an environmental consultant experienced with UST removal to prepare a plan that addresses proper removal and remediation of USTs and any adjacent contaminated soils that are identified within the proposed right-of-way. The remediation plan shall also provide a strategy for addressing any USTs presently unlisted or otherwise not identified during the Phase II, but that are found during project construction phases. This plan shall be approved by the Merced County or City of Atwater Health Departments, as applicable, prior to issuance of a grading permit. In all cases, any USTs found within the proposed right-of-way shall be safely removed and properly disposed of prior to final grading for the construction of the roadway.	LTS

Impact HAZ-4: Abandoned automobiles and farm equipment may have deposited substances such as TPH, BTEX, MTBE, oil, grease, associated PAHs, and lead into the soil. Abandoned farm equipment may have also leaked pesticides (including arsenic) and herbicides into the soil. Soil contaminants from abandoned automobiles and farm equipment may be present at high enough levels such that during grading and earthmoving activities disruption of the soil would pose a health risk to construction workers and the public.	S	**Mitigation Measure HAZ-4:** The Phase II study shall conduct soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and remediate any concentrations of hazardous materials appropriately. During the Phase II study the selected alternative shall be superimposed (with the limits of the selected right of way) on the property map to identify and expand upon areas of potential concern. A sampling plan shall be prepared and shall be approved by the Merced County or City of Atwater Health Departments, as applicable. The sampling plan shall include soil sampling around abandoned cars and farm equipment and in agricultural areas to determine the types and levels of contaminants present (if any). Once the sampling plan is approved, soil investigation will be conducted to determine specific impacts to the soil and groundwater, and mitigation measures. Results shall be included in the Phase II study. Recommendations of this study shall be implemented prior to issuance of the permit to construct. State oversight and regulatory approval of cleanup shall occur as necessary. Recommendations based on soil sampling shall be developed and incorporated into future plans. Measures may include the removal and offsite disposal of farm equipment, excavation and offsite disposal of impacted soil, and/or onsite capping of contaminated soil underneath the selected route.	LTS
Impact HAZ-5: Grading and earthmoving activities could expose the public or construction workers to hazardous substances in the soil deposited during agricultural processes.	S	**Mitigation Measure HAZ-5:** See Mitigation Measure HAZ-4 and HAZ-1A. The sampling plan shall also address the level of pesticides and herbicides in the soil from previous agricultural applications.	LTS
Impact HAZ-6: Lighting associated with the project and the storage of hazardous materials during construction could create a safety hazard to the flight school operating at the former Castle Air Force Base since a portion of the project is within several airport compatibility zones.	S	**Mitigation Measure HAZ-6a:** The developer shall prepare a lighting plan to minimize construction and operational lighting such that it does not interfere with aircraft using the runway at the former Castle Air Force Base. Prior to issuance of a permit to construct the lighting plan shall be approved by MCAG and the CAED and determined to be consistent with Merced County Airport Land Use Compatibility Plan Policy 4.3.5, which does not allow lighting that would distract aircraft from the runway and create landing hazards. **Mitigation Measure HAZ-6b:** As required by the Merced County Airport Land Use Compatibility Plan Policy 4.3.2, structures within Compatibility Zone B1 above 35 feet tall require Airport Land Use Commission review.	LTS

		Mitigation Measure HAZ-6c: As required by the Merced County Airport Land Use Compatibility Plan Policy 4.2.4, except for aviation fuel, other aviation-related flammable materials and up to 2,000 gallons of nonaviation flammable materials, the aboveground storage of fuel or hazardous materials shall not occur in airport compatibility zones B1 and B2.	

Environmental Impacts: Biological Resources and Wetlands	**Level of Significance Prior to Mitigation**	**Mitigation Measures**	**Level of Significance After Mitigation**
Impact BIO-1: Impacts to Habitat of Sensitive Species, Including Listed and Candidate Species			
Impact BIO-1A: Giant Garter Snake	LTS	**Mitigation Measure BIO-1A:** Although there are no modern records for giant garter snakes in Black Rascal Creek or Canal Creek, these creeks provide suitable habitat conditions for this snake. Thus, to ensure that there would be no impacts to this snake during any dewatering activities related to creek realignment and/or construction of road crossings, avoidance measures shall be implemented when construction would be within 200 feet of Black Rascal Creek or Canal Creek. The avoidance and minimization measures are detailed in the Guidelines for Procedures and Timing of Activities Related to the Modification or Relocation of Giant Garter Snake Canal or Stream Habitat and the USFWS Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat (USFWS 1999). In addition, if a giant garter snake is found in the work area, the USFWS shall be notified and the snake will be relocated within the same waterbody, outside of the area of effect.	LTS
~~Impact BIO-1B: Vernal Pool Fairy Shrimp~~	~~S~~	~~**Mitigation Measure BIO-1B:**~~ ~~In order to offset the project's impact to 0.16-acre of vernal pool habitat in the current alignment(s) of the proposed expressway along Bellevue, the project sponsor is proposing to purchase mitigation credits at the Great Valley Conservation Bank located in Merced (or other USFWS-approved mitigation bank that may be available for use at the time of project construction). This USFWS-approved mitigation bank sells vernal pool preservation credits for applicants that are required to mitigate impacts to vernal pool fairy shrimp and vernal pool tadpole shrimp.~~ ~~The USFWS has indicated that the project will be required to implement the mitigation ratios that are specified the 1996 Programmatic Consultation for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans Within the Jurisdiction of the Sacramento Field Office, California. This Programmatic specifies that for every acre (or portion thereof) of habitat that is directly affected, at least two vernal pool preservation credits will be required,~~	~~LTS~~

Environmental Impacts: Biological Resources and Wetlands	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		~~and for every acre (or portion thereof) of habitat that is directly affected, at least one vernal pool creation credits will be required. Since there are no creation credits available at any mitigation bank in Merced County, it is likely that the USFWS will require the applicant to purchase at least three preservation credits (3:1 mitigation ratio). The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project and will be included in the Final EIR. Once the mitigation ratio is determined, the project sponsor shall purchase mitigation credits for any impacts. Prior to impacting the vernal pool habitat, an "incidental take" permit (Section 7 consultation) would be required from USFWS.~~	
Impact BIO-1C: Hardhead	S	**Mitigation Measure BIO-1C:** If partial or total dewatering of Black Rascal Creek or Canal Creek is required, a dewatering plan would be reviewed and monitored by a qualified biologist. The dewatering plan will be designed to reduce impacts to hardhead to the greatest extent practicable. Appropriate measures, including the use of mesh screens, seine and dip-nets, will be implemented to salvage and otherwise reduce mortality to this species during active dewatering. Additionally, turbidity barriers will be installed in the work areas within the channels to prevent impacts to water quality downstream. Finally, a biological monitor will be present during all dewatering activities. The biological monitor will capture all native fish species including hardhead and relocate to undisturbed habitat within the same watercourse. This activity will be conducted in consultation and as approved by CDFG.	LTS
Impact BIO-1D: California Tiger Salamander	S	**Mitigation Measure BIO-1D:** In order to offset the project's impact to potential California tiger salamander breeding habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation banks that may be available for use at the time of project construction). It is likely that the USFWS will require the applicant to purchase at least three preservation credits for every acre (or portion thereof) of **potential** breeding habitat impacted by the project (3:1 mitigation ratio). The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project ~~and will be included in the Final EIR. Once the mitigation ratio is determined,~~ **Prior to project implementation,** the project sponsor shall purchase mitigation credits for any impacts. ~~This mitigation is not in addition to mitigation requirements for vernal pool fairy shrimp, vernal pool tadpole shrimp and spadefoot toad, rather can be combined with any requirement for these species, the greater acreage requirement for any single species being the dominant requirement.~~	LTS

Environmental Impacts: Biological Resources and Wetlands	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		In addition, the USFWS has approved use of the Great Valley Conservation Bank at Flynn Ranch in Merced to jointly mitigate for impacts to California tiger salamander upland estivation/over-summering habitat and San Joaquin kit fox habitat. It is likely that the USFWS will require a 3:1 mitigation ratio for permanent impacts to "suitable" CTS upland estivation/over-summering habitats, and a 1.1: 1 mitigation ratio for temporary impacts to "suitable" CTS upland estivation/over-summering habitats. ~~the applicant to purchase at least three mitigation credits for every acre (or portion thereof) of upland estivation/ over-summering habitat impacted by the project (3:1 mitigation ratio).~~ **Once the final alignment is determined, the project sponsor shall purchase the appropriate number of mitigation credits for any impacts.** The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project ~~and will be included in the Final EIR~~. This mitigation is not in addition to mitigation requirements for San Joaquin kit fox, rather can be combined with any requirement for these species, the greater acreage requirement for any single species being the dominant requirement.	
Impact BIO-1E: Western Spadefoot Toad	S	**Mitigation Measure BIO-1E:** Western spadefoot toads are known to occur at both the Vieira-Sandy Mush Conservation Bank located in Merced and the Great Valley Conservation Bank at Flynn Ranch in Merced. Consequently, it is likely that mitigation credits purchased at either of these mitigation banks to compensate for impacts to ~~vernal pool fairy shrimp, vernal pool tadpole shrimp and~~ potential California tiger salamander breeding habitat would also mitigate the proposed project's impact on potential breeding habitat for the western spadefoot toad. Mitigation credits that are purchased shall be based upon a minimum of a 1:1 compensation to impacts ratio for impacts to 0.69-acre of potential breeding habitat for western spadefoot toad. As this mitigation is not in addition to mitigation requirements for California tiger salamander ~~and vernal pool fairy shrimp~~, provided that a minimum of 0.69 acre of compensation credits are purchased in total for the proposed project, impacts to western spadefoot toad would be regarded as less than significant. Impacts to potential breeding habitat for the western spadefoot toad will be conducted in consultation and as approved by CDFG.	LTS
Impact BIO-1F: Pacific Pond Turtle	S	**Mitigation Measure BIO-1F:** Turbidity barriers that will be installed around the construction areas in Black Rascal Creek or Canal Creek will reduce impacts to pond turtles that may occur downstream. All Pacific pond turtles encountered during dewatering or other activities in the creeks would be salvaged, per CDFG approval, and relocated to preserved off-site habitats.	LTS

Environmental Impacts: Biological Resources and Wetlands	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the Pacific pond turtle. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied aquatic habitat and upland nesting habitat within the final project alignment could be impacted by the proposed project. Since avoidance of all potentially occupied habitat is not possible, mitigation would include conducting preconstruction surveys for Pacific pond turtle and avoidance of nest sites. Preconstruction surveys for turtles and their nests shall be conducted 30 days prior to any construction in or surrounding any large primary irrigation canals, creeks, Black Rascal Creek or Canal Creek. If nest sites are located adjacent to a proposed work area, the nest site plus a 50-foot buffer around the nest site shall be fenced to avoid impacts to the eggs or hatchlings which over-winter at the nest site. In addition, if nest(s) are located during surveys, moth balls (naphthalene) should be sprinkled around the vicinity of the nest (no closer than 10 feet) to mask human scent and discourage predators. Construction at the nest site and within the 50-foot buffer area shall be delayed until the young leave the nest (this could be a period of many months) or as otherwise advised and directed by CDFG, the agency responsible for overseeing the protection of the pond turtle. If CDFG allows translocation of any nestling pond turtles this shall be completed by a qualified biologist under the direction of CDFG. While the measures prescribed above would reduce the impacts to Pacific pond turtles to a level regarded as less than significant pursuant to the CEQA, CDFG may also require mitigation for any impacts to the turtle's habitat following completion of nesting. Any CDFG requirements would become conditions of the project that shall be implemented by the project sponsor. This mitigation is typically at a 1:1 mitigation ratio, or as otherwise determined by CDFG. Mitigation credits shall be purchased from a qualified mitigation bank if required by CDFG. This mitigation measure would reduce impacts to a level regarded as less than significant.	
Impact BIO-1G: Nesting Raptors	S	**Mitigation Measure BIO-1G:** Nesting surveys shall be conducted in the spring of the year prior to construction of the project and, if construction would commence between March 1 and September 1, again 30 days prior to construction of the project. The raptor nesting surveys shall include examination of all trees **and shrubs within the project area and trees and shrubs** and shrubs within sphere of influence of the proposed project. If nesting raptors are identified during the surveys, the dripline of the nest tree or shrub must be fenced with orange construction fencing. ~~Similarly,~~ **In addition,** a 300-foot radius buffer must be fenced with orange construction fencing where this buffer intersects the expressway alignment work areas. This 300-foot buffer may be reduced if a qualified raptor biologist	LTS

Environmental Impacts: Biological Resources and Wetlands	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		determines that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. At a minimum, however, the non-disturbance buffer shall be a radius of 100 feet around the nest tree or shrub. If the nest site is on an adjacent property, the portion of the buffer that occurs on the project site shall be fenced with orange construction fencing. When construction buffers are reduced from the 300 foot radius, a qualified raptor biologist shall monitor distress levels of the nesting birds for one week after project disturbance occurs. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the raptor biologist shall have the right to re-implement the full 300-foot buffer. Instances when the buffer could be reduced in size would be if the raptors were well acclimated to disturbance and/or if there were physical barriers between the nest site and the construction project that would reduce disturbance to the nesting raptors. No construction or earth-moving activity should occur within the non-disturbance buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1. Regardless, the resource agencies consider September 1 the end of the nesting period unless otherwise determined by a qualified raptor biologist. Once the raptors have completed the nesting cycle, that is the young have reached independence of the nest, no further regard for the nest site shall be required. No other compensatory mitigation is required.	
Impact BIO-1H: Swainson's Hawk	S	**Mitigation Measure BIO-1H:** CDFG has prepared guidelines for conducting surveys for Swainson's hawk entitled: Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (CDFG 2000). These survey recommendations were developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reduce the potential for nest failures as a result of project activities and/or disturbances. To meet the CDFG's recommendations for mitigation and protection of Swainson's hawks in this guideline, surveys should be conducted for a half-mile radius around all project activities and should be completed for at least the two survey periods immediately prior to a project's initiation. The guidelines provide specific recommendations regarding the number of surveys based on when the project is scheduled to begin and the time of year the surveys are conducted. If Swainson's hawks are found to be nesting on or in the immediate vicinity of the project area in the future when the proposed project is implemented, consultation with CDFG and mitigation compensation shall be required. At that time, the necessity of acquiring a Fish and Game Section 2081 management authorization should be determined. CDFG has prepared a	LTS

Environmental Impacts: Biological Resources and Wetlands	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California (CDFG 1994) (hereinafter the Mitigation Guidelines) that prescribes avoidance and mitigation guidelines for impacts to Swainson's hawk nesting and foraging habitats. The Mitigation Guidelines require project sponsors to replace any impacted Swainson's hawk nesting and/or foraging habitat with other suitable Swainson's hawk nesting/foraging habitat. If Swainson's hawks are found to be nesting on or within the area of influence of the project (within 1,000 feet of the project alignment), impacts to nesting Swainson's hawks would be regarded as significant and adverse, and mitigation compensation would be required. The CDFG Mitigation Guidelines states that acceptable mitigation to offset impacts to Swainson's hawk foraging habitat can be met by Fee Title acquisition of Swainson's hawk habitat, or by acquisition of the right to record a conservation easement over lands that can be managed for this hawk species (hereinafter Habitat Management Lands). Any land acquired through Fee Title would have to be donated to a suitable conservation organization for management. In addition to providing Habitat Management Lands, the project sponsor would be assessed a management fee for the long-term management of the Habitat Management Lands by a suitable conservation organization. In lieu of these mitigation measures, as approved by CDFG, the project sponsor may purchase mitigation credits commensurate with the acreage of impacts to foraging and/or nesting habitat at a CDFG approved Swainson's hawk mitigation bank.	
Impact BIO-1I: Western Burrowing Owl	S	**Mitigation Measure BIO-1I-1:** A nesting survey shall be conducted for ground nesting raptors, such as western burrowing owl and northern harrier. The burrowing owl survey should be conducted in accordance with the survey requirements detailed in the CDFG's October 17, 1995 *Staff Report on Burrowing Owl Mitigation*. Surveys shall be conducted in both the breeding season (April 15-July 15) and non-breeding season (December-January) to assess use of the project area by this species. If burrowing owls are present on the project area during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 75 meter (276-foot) buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance within the project area. This 276-foot buffer could be removed once it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest). Typically, the young fledge by August 31. This date may be earlier than August 31, or later, and would have to be determined by a qualified raptor biologist. If northern harriers are identified nesting within the project area, mitigation measures detailed above for nesting raptors should be implemented. Additionally, if burrowing owls are identified nesting onsite and would be affected by the	LTS

Environmental Impacts: Biological Resources and Wetlands	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		proposed project, an upland mitigation area for burrowing owls shall be established either on- or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls that would be affected by the proposed project, with a minimum of 6.5 acres preserved per pair of owls or single owl that would be affected by the proposed project. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are found to be within the project area, the mitigation requirement shall be 2 x 6.5 = 13 acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be 3 x 6.5 = 19.5 acres). A detailed mitigation and monitoring plan shall be developed for the burrowing owl mitigation area. This plan must be prepared in coordination with CDFG, and approved by this agency. In lieu of this mitigation measure, as approved by CDFG, credit commensurate with the mitigation acreage requirements set forth above shall be purchased from a qualified burrowing owl mitigation bank. **Mitigation Measure BIO-1I-2:** Preconstruction surveys of the project area shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted to non-habitat (e.g., graded and developed). **Mitigation Measure BIO-1I-3:** If western burrowing owls must be passively relocated from the project area to remove them from harms way, these activities shall be approved by CDFG in advance. Passive relocation shall not commence before September 30th and shall be completed prior to February 1st. **Mitigation Measure BIO-1I-4:** If an upland mitigation site is designated for burrowing owls, it shall be approved as a suitable burrowing owl mitigation property by CDFG. The preserved area shall be preserved in perpetuity as wildlife habitat via recordation of a conservation easement that designates the California Department of Fish and Game (CDFG), or any other qualified conservation organization as approved by CDFG as the Grantee of the easement. **Mitigation Measure 1I-5:** If a conservation easement is established over burrowing owl habitat, an endowment to cover	

Environmental Impacts: Biological Resources and Wetlands	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		the management of the mitigation area and implementation of the mitigation and monitoring plan shall be provided by the project sponsor to the Grantee of the Conservation Easement prior to issuance of the grading permit.	
Impact BIO-1J: Common and Special-Status Nesting Passerine Birds	S	**Mitigation Measure BIO-1J:** A nesting survey shall be conducted 15 days prior to commencing construction work if this work would commence between March 1 and September 1. If special-status birds, such as loggerhead shrike or tricolored blackbirds, are identified nesting within or near the project area, a 200-foot radius around the nest must be staked with bright orange construction fencing. No construction or earth-moving activity shall occur within this 200-foot staked buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by August 1. This date may be earlier than August 1, or later, and would have to be determined by a qualified ornithologist. If common (that is, not special-status) passerine birds (that is, perching birds such as American robins, scrub jays, and northern mockingbird) are identified nesting within the project area, grading activities in the immediate area shall be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the area. Typically, most passerine birds can be expected to complete nesting by July 1, with young attaining sufficient flight skills by early July.	LTS
Impact BIO-1K: San Joaquin Kit Fox	S	**Mitigation Measure BIO-1K:** In order to offset the project's impact to high and medium quality potential San Joaquin kit fox habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation bank available for use at the time the project is constructed). The USFWS has approved use of this bank to jointly mitigate for impacts to California tiger salamander upland estivation/ over-summering habitat and San Joaquin kit fox habitat. Mitigation credits that are purchased to compensate for permanent impacts and for temporary impacts to high and medium quality suitable kit fox habitats. The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project ~~and will be included in the Final EIR. Once the mitigation ratio is determined, the project sponsor shall purchase mitigation credits for any impacts.~~ **It is likely that the USFWS will require a 2:1 mitigation ratio for permanent impacts to potential SJKF habitat (for medium and high quality habitat areas only), and a 0.5:1 mitigation ratio for temporary impacts to potential SJKF habitat. Once the final alignment is determined, the project sponsor shall purchase**	LTS

Environmental Impacts: Biological Resources and Wetlands	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		the appropriate number of mitigation credits for any impacts. ~~In addition to purchasing mitigation credits commensurate with USFWS requirements, the project sponsor is proposing to provide wildlife corridor access (see figure 4.11-2) under the constructed road alignment to address the USFWS' concerns that the project will diminish the ability of foxes to move between the Sandy Mush Road preserve and the "east side" of Merced County. In order to maintain this potential movement corridor after construction of the new road alignment, the proposed project would incorporate a passageway under the constructed expressway. As previously discussed with USFWS, the selected location for this crossing structure is where the main canal which currently bisects Bellevue Road.~~ ~~The proposed passageway would include a "bubble" of preserved land, approximately 10 acres in size, on both sides of the constructed expressway to enhance the value of the movement corridor for the kit fox. It is our understanding that any land set aside in association with this movement corridor would be counted towards the mitigation requirements for this species. In addition, the passageway would include constructing dens to provide escape habitat that could be used by the kit fox to avoid predators. One escape den would be installed within the passageway and one escape den would be constructed in the "bubble" of preserved land on each side of the expressway.~~ Finally, avoidance and minimization measures will be implemented by the proposed project to further reduce potential impacts to the San Joaquin kit fox. An employee training program will be conducted before groundbreaking to explain the Federal Endangered Species Act and any endangered species concerns to contractors working in the area. Qualified biologists would then conduct preconstruction den surveys no more than 14 days prior to groundbreaking to ensure that potential kit fox dens are not disrupted ~~by~~ **during construction of** the expressway project. If "potential dens" are located, infrared camera stations will be set up and maintained for 3 consecutive nights at den openings prior to initiation of groundbreaking activities to determine the status of the potential dens. If no kit fox is found to be using the den, groundbreaking activities would proceed unhindered. However, if a kit fox is found using a den site within an area of influence of the expressway project (i.e., within 300 feet of the proposed road alignment), the USFWS will be notified at once. Because timing is an issue, notification would be via a telephone call (and as necessary voice-mail message) to the Chief of Endangered Species in Sacramento, and the Supervisor of Environmental Services at the appropriate CDFG Regional office. If the den is a refuge site only, the project sponsor will seek permission from the USFWS (and CDFG) to passively relocate the fox(es) from the den site prior to the initiation of the groundbreaking activities. As approved, passive relocation will occur over a three day period. Should a den be found that is a natal or pupping den, and it is within an area of influence near the expressway project, the	

Environmental Impacts: Biological Resources and Wetlands	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		groundbreaking activities would be delayed until such time that biologists can confirm that all kit foxes have left the den site. Once the den has been vacated, an infra red triggered camera would be set at the den opening. The camera would then be checked over a 2-day period to confirm that kit foxes no longer use the den. Once this is verified, grading equipment could be moved into the area and the groundbreaking activities completed. Prior to initiating groundbreaking activities, the vehicle and equipment access routes and work area will be delineated using construction fencing. This will minimize the project-related disturbance to **potential** San Joaquin kit fox habitat to the maximum extent possible. During the groundbreaking activities, all project-related vehicle traffic will be restricted to established roads or access routes, and will observe a 20-mile an hour speed limit within the work areas, except on County roads and highways. A biological monitor will be present during all activities that could result in injury to San Joaquin kit fox. The biologist will have the authority to halt work, if necessary, to protect the kit fox. To prevent harm to San Joaquin kit fox, any steep-walled holes and/or trenches excavated for the project will be completely covered at the end of each workday, or escape ramps will be provided to allow any entrapped animals to escape unharmed. All pipe sections stored at the project site overnight that are four inches in diameter or greater will be inspected for San Joaquin kit fox before the pipes are moved or buried. If San Joaquin kit fox are identified in the work area at any time, the USFWS and/or CDFG will be notified and consulted before work activities resume. All trash items will be removed from the project site to reduce the potential for attracting predators of San Joaquin kit fox. Contractors will be prohibited from bringing firearms and pets to the job site. Prior to impacting San Joaquin kit fox habitat, an "incidental take" permit (Section 7 consultation) would be required from USFWS, and an "incidental take" permit (Section 2081 permit) would be required from CDFG. In lieu of such a permit, CDFG may process a "consistency determination" pursuant to Fish and Game Code §2080.1. Such a determination would indicate that the State's interests in protecting State listed species are met by the federal biological opinion (i.e., the incidental take permit) issued by USFWS and thus no Section 2081 permit is required.	
Impact BIO-1L: California Horned Lizard	S	**Mitigation Measure BIO-1L:** The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the California horned lizards. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied California horned lizard habitat within the project area could be impacted by the proposed project. Avoidance of potentially occupied upland burrow sites is not possible. The project	LTS

Environmental Impacts: Biological Resources and Wetlands	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		sponsor will be purchasing mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation bank) to mitigate for impacts to San Joaquin kit fox habitat. Since both the San Joaquin kit fox and the California horned lizard require friable soils, it shall be assumed that mitigation land set aside for San Joaquin kit fox could also serve to provide mitigation lands for the California horned lizard. Additional mitigation measures shall include conducting preconstruction surveys for the California horned lizard prior to any site grading. All California horned lizards encountered during site grading would be salvaged, per CDFG approval, and relocated to preserved off-site habitats. Impacts to potential California horned lizard habitat would be conducted in consultation and as approved by CDFG. This mitigation measure would reduce impacts to a level regarded as less than significant.	
Impact BIO-2: Impacts to Jurisdictional Wetlands, Including Waters of the United States and the State of California	S	**Mitigation Measure BIO-2:** Impacts to waters of the United States and/or State will be reduced to a *less-than-significant* level through various means, including avoidance, minimization of impacts, and mitigation compensation. Impacts will be minimized by the use of Best Management Practices to protect avoided wetland and "other waters" in the project area, and ensure water quality in the avoided wetlands and other waters within the watershed. These practices can include installing orange construction fencing, hay waddles, and other protective measures around wetlands and other waters. During project-related grading, a biological monitor will be on-site to monitor the integrity of avoided wetlands and other waters. For those wetland areas and other waters that cannot be avoided, a *Mitigation and Monitoring Plan* will be prepared that will provide a mitigation program to fully compensate for impacts to waters of the United States/State. To compensate for impacts to wetlands and other waters, wetlands and other waters shall be created in areas that are now upland at a 2:1 (mitigation to impacts) ratio and be consistent with requirements set forth by the Corps and the RWQCB. The new wetlands and other waters will resemble those wetlands and other waters affected by the project (known as in-kind replacement). In pool environments that will be impacted by the project, wetland plant/animal populations will be relocated by transferring topsoil from the impacted pools to the re-created pools. These topsoils would contain a seed bank of the impacted pool plant species which would germinate with fall/winter hydration in the re-created pools. The proposed wetland mitigation plan would have to meet normal requirements for mitigating impacts to wetlands and other waters, which include: • **Replacement of impacted wetlands and other waters at a 2:1 ratio**. For	LTS

Environmental Impacts: Biological Resources and Wetlands	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		permanent wetland and other waters impacts, wetlands and other waters shall be replaced at a minimum ratio of two acres created for each acre, or fraction thereof that is permanently impacted. • **Dedication of the permanently protected areas**. The Corps and other regulatory agencies generally require that any new wetlands and other waters created to mitigate project impacts be set aside in a preserve in perpetuity, either through deed restrictions or conservation easements. • **Establishment of a five-year monitoring program to monitor the progress of the wetland and other waters mitigation toward an established goal**. Success criteria, maintenance and monitoring requirements, contingency measures and a schedule for implementation shall be specified. At the end of each monitoring year, an annual report will be submitted to the Corps, RWQCB and other resource agencies that permitted the project. This report will document the hydrological and vegetative condition of the mitigation wetlands and other waters, and will recommend remedial measures as necessary to correct deficiencies. In lieu of creating compensation wetlands and other waters, as approved by the Corps and RWQCB, the project sponsor may purchase mitigation credits from an approved mitigation bank at a 2:1 ratio or as otherwise specified by the Corps and RWQCB. Aside from the minimum replacement ratio and in perpetuity protection, various regulatory agencies may provide additional conditions and stipulations for permits. No water of the U.S. and/or State would be impacted until such time that appropriate permits are acquired for the project from the CDFG, RWQCB, and/or Corps. As proposed, impacts to wetlands and other waters within the project area will require a Section 404 permit from the Corps, authorization from the RWQCB pursuant to Section 401 of the Clean Water Act, an NOI with the SWRCB, and an SBAA from the CDFG. Conditions in permits authorized for the project by these agencies shall become conditions of the project. Implementation of the measures described above would reduce significant impacts to waters of the United States/State to a level considered less than significant pursuant to the CEQA. Any other conditions that are stipulated for wetland impacts by the CDFG, Corps and/or RWQCB shall also become conditions of project approval.	

Environmental Impacts: Cultural Resources	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact PALEO-1: Project-related ground disturbance could have adverse impacts on unknown or unrecorded significant paleontological resources, including animal and plant fossil remains.	S	**Mitigation Measure PALEO-1a:** Prior to the start of ground clearing operations, a qualified paleontologist shall establish a monitoring and mitigation program, including preconstruction coordination; construction monitoring; emergency discovery procedures; sampling and data recovery, if needed; preparation, identification, and analysis of the significance of fossil specimens salvaged, if any; museum storage of any specimens and data recovered; and reporting. **Mitigation Measure PALEO-1b:** Prior to construction, construction personnel involved with earth-moving activity shall be informed of the possibility of excavating paleontological resources and that such resources are protected under certain laws and regulations regarding proper notification procedures. This training should be performed by a qualified paleontologist.	LTS
Impact CULT-1: Project construction would involve subsurface excavation and grading which could result in damage to or destruction of unrecorded archaeological resources, including Native American artifacts and/or human remains.	S	**Mitigation Measure CULT-1a:** If cultural resources are discovered during earthmoving or soil-disturbing activities, a monitoring program will be implemented to observe, assess, record and recover any important prehistoric features or human remains uncovered. **Mitigation Measure CULT-1b:** Provide a qualified, professional archaeological monitor and a qualified Native American observer in accordance with CEQA Guidelines, § 15064.5 (d) in the event that cultural resources are found during removal of the existing built environment during all initial exposure of native soil and during deep utility trenching. Mitigation Measure CULT-1c: In accordance with CEQA Guidelines, § 15064.5 (e)(1)(A)(B), in the event of the discovery or recognition of any human remains on the project site during development, there shall be no further excavation or disturbance of the site or any area reasonably suspected to overlie adjacent human remains until the coroner of the county in which the remains are discovered is to be contacted to determine that no investigation of the cause of death is required. **Mitigation Measure CULT-1d:** If the coroner determines the remains to be Native American: • the coroner shall contact the Native American Heritage Commission within 24 hours; • the Native American Heritage Commission shall identify the person or persons it	LTS

Environmental Impacts: Cultural Resources	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
		believes to be most likely descended from the deceased Native American; and • the most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code § 5097.98.	
Impact CULT-2: Construction of the Buhach Road overpass over SR 99 would occur in close proximity to the Buhach Catholic Church, an identified historic resource, potentially resulting in damage to, or destabilization of, the structure.	S	**Mitigation Measure CULT-2:** Construction work, including construction staging near the Buhach Church shall not take place within the legal parcel boundary (Assessor Parcel 025-170-001) of the church. Widening of the Buhach Road overpass would necessitate re-grading of the Church driveway but would not impair access to the main entrance of the building. Furthermore, the Church structure itself, which is the historic resource in question, would be unaffected by widening of the Buhach Road overcrossing.	LTS
Impact CULT-3: If construction of the Buhach Road overpass would require construction activities to occur on the Buhach Catholic Church property, damage to, or destabilization of the Buhach Catholic Church, an identified historic resource, could occur.	S	**Mitigation Measure CULT-3:** • The project proponent would develop and implement measures to protect the character-defining features of the Buhach Catholic Church from damage. Such measures would be prepared in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the California Historical Building Code. • Inadvertent damages to the character-defining features of the Buhach Catholic Church would be repaired in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the California Historical Building Code. The building and grounds would be photographed prior to construction establishing a baseline condition for assessing inadvertent damage, as described below.	LTS

Environmental Impacts: Utilities	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact UTIL-1: Project construction would require the demolition of several structures, including the Buhach Road	S	**Mitigation Measure UTIL-1:** Prior to construction, MCAG shall prepare a Solid Waste Management Plan for the project that demonstrates that at least 50 percent of project-generated solid waste is being recycled,	LTS

Environmental Impacts: Utilities	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
overcrossing and several residential units, as well as the removal of vegetation and soil. This debris and other construction material could affect the capacity and lifespan of local landfills, and affect the ability of Merced County and the City of Atwater to meet its AB 939 reduction targets.		reused or diverted from landfills. Elements of the Solid Waste Management Plan could include, but are not limited to, the following: • Recycling of metals and other recyclable materials generated during construction. • Regrinding and reuse of the concrete debris generated by demolition of the existing Buhach Road overpass. • Balancing excavated soils by reusing them in other areas, such as for fill around the foundations of elevated project features. • Removed vegetation reused, such as through mulching, or composted at a composting facility. The City of Atwater and Merced County Public Works departments shall approve the Solid Waste Management Plan prior to the issuance of any building permits. Given that the types of solid waste that would be generated are highly recyclable or green waste, such as soil and vegetation, **it is anticipated a source reduction rate of 50 percent or higher is easily attainable.**	

Environmental Impacts: Public Services	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact PS-1: Emergency responders from the Merced County Fire Department Station 82 on Gurr Road could be delayed or at risk from the signalized intersections proposed for the project, particularly the intersection of North Gurr Road with SR 140 and the AME.	S	**Mitigation Measure PS-1:** The project applicant shall be responsible for installation of specialized traffic signal lights at all signalized intersections along the project alignment. These traffic signals shall be controllable by the Fire Department to ensure that fire apparatus may safely cross signalized intersections on a green light and that other traffic at the intersection is stopped by red lights. **In addition to the specialized traffic signals, the roadway alignment shall be moved to a further distance from the existing fire station, as shown in Figure 4.14-2. A paved break in the roadway median shall also be provided to ensure adequate fire station access and response times.**	LTS
Impact PS-2 The project would result in changes in access to local roadways that could affect emergency service providers by	S	**Mitigation Measure PS-2:** The applicant shall provide all emergency service providers in Merced County, and the Cities of Atwater and Merced with detailed information about changes in local roadways. This information can be used by the emergency service providers to update their response plans	LTS

Environmental Impacts: Public Services	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
altering the routes that are currently used to respond to service calls. This could adversely affect emergency response times.		and to chart new routes to respond to service calls. • Prior to any demolition or construction, this information shall be submitted prior to any changes in access. • During construction, this information shall be updated every time a new access connection is completed to inform the service providers that an alternate connection is available. It is assumed that, once constructed, the AME would provide new routes for many of these calls.	
Impact PS-3: Project construction may require detours and lane closures on existing roadways in the project area which may adversely affect EMS, as well as Sheriff, Police, and Fire Department response times.	S	**Mitigation Measure PS-3:** The applicant shall prepare a Traffic Management Plan that ensures coordination between construction contractor(s) and public safety providers to minimize or eliminate interference with provision of police, fire and emergency medical services. Prior to construction, the plan shall be provided to all emergency service providers within the area. Additionally, emergency service providers shall receive advance notice of all necessary lane closures and detours as a result of project construction. This plan shall be approved by the Merced County and City of Atwater Department of Public Works prior to the issuance of permits to construct the project.	LTS
~~Impact PS-4: Alternative 1B would traverse a portion of a planned/approved school site.~~	~~S~~	~~**Mitigation Measure PS-4:**~~ ~~If Alternative 1B is selected, the applicant shall purchase an alternative site for use as a future elementary school site. This site location shall be acceptable to the Atwater Elementary School District and title to the new school site shall be transferred prior to issuance of a permit to construct the AME project. The new school site purchased by the applicant shall be of equal or greater acreage as the impacted site and in a different location approved by the State Department of Education.~~ ~~Since the location of a new school site as required under Mitigation Measure PS-3 is unknown at this time, it is not possible to analyze the environmental affects of its construction. If Alternative 1B is chosen, the new school site required shall undergo separate environmental review.~~	~~LTS~~
Impact PS-~~5~~**4**: Alternative 1A would be built within three tenths of a mile from the southeast corner of a future school site which could result in unsafe conditions for students traveling by foot or bicycle who would have to cross	S	**Mitigation Measure PS-~~5~~ 4a:** If Alternative 1A is selected, the section of the AME between SR 99 and Santa Fe Drive, including the proposed intersection of Avenue Two with the AME, will be constructed in accordance with the FHWA's Safe Route to School guidelines. **Under either alternative, the section of the AME project between SR 99 and Santa Fe Drive, including the proposed intersection of Avenue Two with the AME, shall be constructed in**	LTS

Environmental Impacts: Public Services	Level of Significance Prior To Mitigation	Mitigation Measures	Level of Significance After Mitigation
the project.		**accordance with the FHWA's Safe Route to School guidelines** It is anticipated that these guidelines may include requirements for: • Designated crosswalks crossing the AME • Traffic-signals equipped with walk/don't walk signals • Bicycle lanes on Avenue One and Avenue Two • School Crossing signage **Modified Alternative 1B would cross under Avenue One which would allow vehicles, pedestrians, and bicyclists on Avenue One to safely travel over the AME to access the Avenue One school site.** **Under Alternative 1A, Avenue One would terminate on either side of the AME, ending in cul de sac on the east and west sides of the AME. Individuals traveling to and from the Avenue One school site would be required to travel south to Green Sands Avenue or north to Avenue Two to cross the AME. This would restrict the ability for some students or other individuals to travel to school using alternative transportation, such as walking or bicycling.** This would create a conflict with the FHWA's *Safe Routes to School* guidelines, which are designed to enable and encourage children, including those with disabilities, to walk and bicycle to school and to make bicycling and walking to school a safer and more appealing transportation alternative. ~~Design consistency with the Safe Route to School guidelines would reduce this impact to a less-than-significant level.~~ **The following mitigation measure would reduce this impact of Alternative 1A to a less-than-significant level.** **Mitigation PS-5b:** **To provide safe pedestrian and bicycle crossing of Alternative 1A, a pedestrian overpass shall be constructed between the two cul de sacs on Avenue One on the east and west sides of Alternative 1A. Built in accordance with the Safe Route to Schools guidelines, the pedestrian overpass would allow for students to safely cross above the expressway and access the Avenue One school site.**	

Source: CirclePoint 2007.

CHAPTER 3 PROJECT DESCRIPTION

In accordance with Section 15124 of the CEQA Guidelines, this chapter includes the discussion of the:

1) Project location;

2) Project background;

3) Project objectives;

4) Intended uses of the EIR;

5) Characteristics of the project; and

6) Construction program, including information on potential phasing.

Information in the section is derived primarily from the most current project plans for the two alternative alignments being considered, as shown in the project plans, as submitted entitled *Geometric Approval Drawing Atwater-Merced Expressway Alignment 1A* and *Geometric Approval Drawing Atwater-Merced Expressway Alignment 1B* (dated ~~February~~ **October** 2008), and the Preliminary Design Report prepared for the project (dated November 2007).

3.1 PROJECT LOCATION

The Atwater-Merced Expressway (AME) is a proposed 7-mile-long north-south transportation corridor located in the northeast portion of Merced County, north and west of the City of Merced, and south and East of the City of Atwater. The AME would connect with State Route (SR) 59 at Bellevue Road north of the City of Merced, and connect with SR 140 at Gurr Road south of the City of Atwater. The AME would cross SR 99 and include a new interchange with SR 99 west of the City of Merced. Figure 3-1 depicts the general location of the Atwater-Merced Expressway project and the project study area.

3.2 PROJECT BACKGROUND

In 1997, the Merced County Association of Governments (MCAG) completed the *Route 99 Major Investment Study* for the Merced/Atwater urbanized area. The Study evaluated population, housing, and employment growth in the urbanized area through the year 2020. The existing transportation system was modeled and impacts created by future traffic were identified. In 1998, the Regional Transportation Plan (RTP) for Merced County was completed, which designated the Atwater-Merced Expressway project (henceforth "AME" or "project") as high priority in the 'Recommended Regional Improvement Project Priorities' list. The RTP

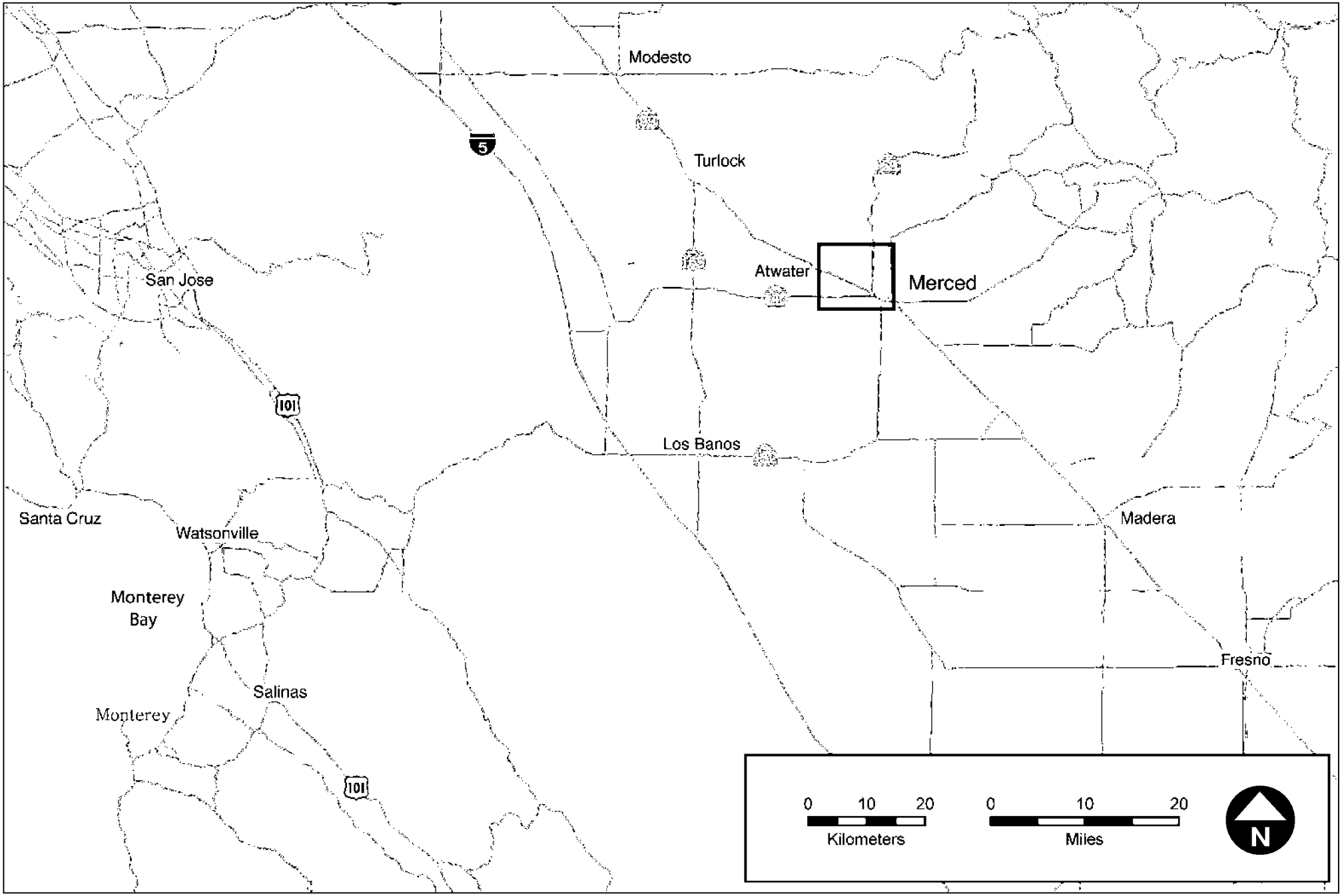
was subsequently updated in 2004 and 2007. The AME project has continued to be seen as an important part of the region's future transportation system.

In September 2001, the California Department of Transportation (Department) completed a Project Study Report – Project Development Study (PSR-PDS) that evaluated several possible alignments for the AME. At the time it was thought that the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) would be the lead agencies or the project and a joint CEQA/NEPA document would be prepared.

In January 2005, MCAG was authorized by the California Transportation Commission (CTC) to take over the Project Approval/ Environmental Document phase of the AME project and in March 2005, MCAG retained a consultant team to continue to study and refine the alignments identified in the PSR-PDS. The outcome of this task was to refine the possible alternative alignments to be studied in the environmental process to one primary corridor with two possible alignments. MCAG and its consultants reevaluated the projects goals in coordination with the Department of Transportation and determined that the best course for the AME project was to pursue environmental clearance under the California Environmental Quality Act (CEQA) and not to pursue Federal NEPA clearance because federal funds for the project were deemed very limited in the future. In June 2006, the MCAG Board of Directors approved this approach for the AME project. In making this decision, MCAG took over the role of lead agency for the environmental document. The MCAG Board of Directors approved the Preliminary Design Report for the AME in November of 2007, which finalized ~~the alternative~~ **Alternative 1A and the original Alternative 1B** as the alignments that would be studied in ~~this~~ **the Draft** EIR.

MCAG issued a Notice of Preparation of an Environmental Document (NOP) on August 25, 2006 (State Clearinghouse Number 2006081138). A public scoping meeting was held on September 20, 2006 and public comment was taken on that day and continued to be received until September 25, 2006 (the NOP and copies of all written comments on the NOP are included in Appendix A of this EIR). A notice of the meeting was posted in local newspapers prior to the meeting. Additionally, MCAG sent notification mailers to approximately 560 persons on the project mailing list that included residents in the project area.

A Draft EIR evaluating Alternative 1A and Alternative 1B was published on March 3, 2008 (and is included in the Appendix). After publication of the Draft EIR, changes were made to one of the AME project alternatives to address concerns raised by the Atwater Elementary School District (AESD) during the public comment period. The concerns had to do with the location of Alternative 1B, which would traverse a portion of a planned but not yet constructed school site (referred to as the "Avenue One school site"). While mitigation was identified in the Draft EIR to reduce this impact to a less-than-significant level by locating a new site for the not yet constructed school, meetings and consultation with the AESD and the California Department of Education determined that a more feasible solution would be to modify (realign) a 1.3-mile segment of Alternative 1B between SR 99 and Santa Fe Drive to avoid the current Avenue One school site. In addition to realigning the roadway to avoid the school site, the roadway would also be depressed to cross under Avenue One to maintain access to the schools site from the east along Avenue One. The original Alternative 1B alignment is no longer under consideration and has been replaced with "Modified Alternative 1B". This Recirculated Draft EIR addresses the potential impacts from Alternative 1A and Modified Alternative 1B.



ATWATER-MERCED EXPRESSWAY

Project Location

FIGURE 3-1

Source: Far Western, 2007.

3.3 PROJECT OBJECTIVES

The population in the Atwater-Merced region is projected to grow substantially between now and 2030. As growth continues, additional vehicles will place greater travel demands on the existing roadway network in the area. In order to accommodate this future growth, the objectives of the AME project are to:

- Provide additional north/south roadway capacity to accommodate existing, approved, and planned development within the Cities of Atwater and Merced Spheres of Influence, unincorporated portions of Merced County, and to the new University of California - Merced Campus;
- Improve access to the Castle Airport Development Center and the United States Penitentiary – Atwater located in unincorporated portions of Merced County;
- Create an alternate route for existing SR 59 to accommodate regional travel demand from north of Bellevue Road to SR 99 and along SR 140 from west of Gurr Road to SR 99;
- Reduce deficiencies and improve operational characteristics on SR 99 by closing the Buhach Road interchange.

3.4 INTENDED USES OF THE EIR

The Atwater-Merced Expressway Project EIR would be used by the decision makers at the Merced County Association of Governments (MCAG) to assist them in their decision making process, and to provide documentation that will help to inform other responsible agencies and the public of the potential impacts to environmental resources of the AME project. The EIR will be evaluated by MCAG when considering the selection of the preferred alignment and approval of the project itself, and will be used by Merced County, the cities of Atwater and Merced, and other responsible agencies when considering adoption of the AME project and selected alignment into local circulation and land use plans as well as issuing specific permits for project construction. For example, after certification of the EIR, Merced County would consider a General Plan Amendment to add the AME project to the General Plan Countywide Circulation Diagram. The Cities of Atwater and Merced will also update their respective General Plan Circulation Elements to reflect the addition of the AME project.

3.5 CHARACTERISTICS OF THE PROJECT

3.5.1 PROJECT OVERVIEW

Alternative Alignments Under Consideration

Two alternative alignments, Alternative 1A and **Modified** Alternative 1B, are being considered, shown in Figures 3-2a and 3-2b, respectively. The alternatives both share the same right-of-way (ROW) for the majority of the expressway, but travel along different paths between Franklin Road and SR 99. The primary difference between the two alternative alignments is where they connect with Santa Fe Drive and cross the Burlington Northern Santa Fe (BNSF) railroad tracks. Alternative 1A would include an interchange with Santa Fe Drive/overcrossing of the BNSF tracks approximately one-half mile southeast of the point from where **Modified** Alternative 1B would connect with the road and cross the tracks. Figure 3-3 shows the

project as a whole, with both alternatives shown on an aerial photograph which show their locations relative to each other. This EIR generally considers the environmental effects of the project as a whole, but provides a separate discussion of each of the alignments when there is a difference in potential impacts.

Major Project Improvements and Interchanges

The AME would be a four-lane divided access controlled expressway with cloverleaf style interchanges with major roadways (SR 99 and Santa Fe Drive), grade separated crossings of the BNSF and **Union Pacific Rail Road (**UPRR**)** ~~railroad~~, and signal-controlled intersections with local roads. The project would include the realignment of some existing road segments, including SR 99, intersection improvements at several existing local intersections, and the extension of some local roads to connect with the new expressway and increase local access to the project. Changes of access would result on several local roads with the construction of dead end cul-de-sacs. ~~Two~~ **G**rade separated interchanges and overpasses would be built above the **UPRR** ~~Union Pacific Railroad~~ and SR 99 and above the Burlington Northern Railroad and Santa Fe Drive to allow vehicles to cross above these major roadways and rail lines. ~~The project sponsor will coordinate with Caltrans to determine the necessary permits for construction of the project. Additional detail on the specific features of the project can be found below~~.

Under Modified Alternative 1B the new roadway would be depressed (below existing ground level) to pass under Avenue One thereby maintaining local east-west circulation on Avenue One to provide access to the proposed Avenue One school site. Avenue One would be raised by approximately two feet above existing ground elevations to cross over the AME on a bridge structure. No direct access between the Modified Alternative 1B and Avenue One would be provided with the project.

The project sponsor will coordinate with Caltrans to determine the necessary permits for construction of the project. These permits would include, but would not be limited to National Pollutant Discharge Elimination System (NPDES) permits, a flood encroachment permit from the Central Valley Flood Protection Board, a permit to construct from the Merced Irrigation District, an "incidental take" permit from the United States Fish and Wildlife Services, and a Section 404 permit from the US Army Corps of Engineers. For those improvements to be constructed within existing or proposed State right-of-way, such as the new interchange with SR99 and connections with SR 59 and SR 140 at the north and south ends of the project respectively, the project sponsor will coordinate and develop a Cooperative Agreement(s) with Caltrans that will clearly define the roles and responsibilities of each party during final design, right of way acquisitions, and construction. For those portions outside the State right of way, the project sponsor will coordinate similarly with the County of Merced. Additional detail on the specific features of the project can be found below.

ACCESS-CONTROLLED INTERCHANGES

The project would feature two major interchanges, designed as highway style interchanges with limited-access ramps. These limited-access interchanges are also designed to incorporate an overpass over freight railway tracks. These two limited-access interchanges are:

Interchange 1. A "partial cloverleaf" interchange with Santa Fe Drive. This interchange would include a combined bridge overpass of Santa Fe Drive and the BNSF railroad tracks. Figures 3-4a and 3-4b show the interchange with Santa Fe Drive for Alternatives 1A and **Modified**

Alternative 1B, respectively. A short segment of Santa Fe Drive would be reconfigured as part of this interchange to include medians and turn lanes to provide standard safe areas for vehicles entering from or exiting onto the AME from Santa Fe Drive. This interchange has a different location and slightly different configuration depending on whether Alternative 1A or **Modified** Alternative 1B is selected.

Interchange 2. A "partial cloverleaf" limited-access interchange connecting with a realigned portion of SR 99. This interchange would also include bridge overpasses of SR 99 and the UPRR railroad tracks. Figure 3-5 shows the proposed interchange with SR 99.

SIGNAL OR STOP-SIGN CONTROLLED INTERSECTIONS

Because it is being built as an expressway, there would be no driveway connection directly to the AME. Access to all local residences, businesses, farms and other parcels would be taken from local roads that connect to the AME. The project would incorporate signal-controlled intersections with local roadways. Three of these intersections already exist, but would be improved as part of the project. The following intersections with the AME, shown in Figures 3-2a and 3-2b and described from north to south, would be constructed or substantially changed:

1. The existing four-way stop-sign controlled intersection of SR 59 and Bellevue Road would be replaced with a signalized intersection between SR 99 and AME. Bellevue Road would no longer connect to SR 59. At present, both Bellevue Road and SR 59 are two-lane roads. The enhanced intersection would provide a minimum of two thru-lanes and at least one dedicated left-turn lane at each approach.

2. This new intersection would connect the AME to Bellevue Road, which would function as a frontage road between SR 59 and Franklin Road. The new three-way intersection would be signal controlled and would feature dedicated left and right turn lanes from the frontage road onto the AME, as well as a dedicated left turn lane from the AME onto the frontage road.

3. This new intersection would connect the AME to a new extension of Thornton Road at a three way signalized intersection. This intersection would provide left and right turn lanes from the extension of Thornton Road onto the AME, as well as a dedicated left turn lane from the AME onto the extension of Thornton Road. This intersection would also include a connection from Thornton Road to Bellevue Road, which would be maintained as a frontage road between Franklin Road and SR 59.

4. The existing intersection of Bellevue and Franklin would be reconfigured as a signalized intersection of the AME and Franklin. This intersection would feature dedicated left turn lanes for all four intersection approaches as well as two through lanes for vehicles traveling either direction on the AME. This intersection has a slightly different configuration depending on whether Alternative 1A or **Modified** Alternative 1B is selected. A new connection between Franklin Road and Bellevue Road (west of Franklin) would be constructed approximately 700 feet north of the intersection. At present this section of Bellevue Road is not developed, but it is proposed as a separate project as a future connection to the southern portion of the Castle Air Force Base Reuse Plan Area. South of the AME, a new connection between Franklin Road and Bellevue Road (east of Franklin) would be constructed approximately 700 feet south of the intersection.

5. This new intersection would connect the AME to a new extension of Avenue Two. A section of existing Avenue Two would be ~~reconfigured~~ **realigned** to connect with the AME at a new signal-controlled intersection. **This intersection has a slightly different location and configuration depending on whether Alternative 1A or Modified Alternative 1B is selected. For Alternative 1A, a** ~~This~~ new three-way intersection would **be constructed and would** include a dedicated right turn lane from the southbound AME onto Avenue Two, two dedicated left turn **and one right turn** lanes from the northbound AME onto Avenue Two, as well as two dedicated thru lanes for thru traffic **travelling in both directions** on the AME. The realigned section of Avenue Two would terminate at the AME with dedicated right and left turn lanes. **Under Alternative 1A, the existing Avenue Two intersection at Santa Fe Drive and the at-grade BNSF railroad crossing would be removed and local traffic would be directed to the AME interchange.**

   ~~This intersection has a slightly different location and configuration depending on whether Alternative 1A or Alternative 1B is selected.~~ **For Modified Alternative 1B, a new four-way intersection would include a dedicated right turn lane and left turn lanes from the southbound AME onto Avenue Two, two dedicated left turn and one right turn lanes from the northbound AME onto Avenue Two, as well as two dedicated thru lanes for thru traffic travelling in both directions on the AME. The realigned section of Avenue Two would include two dedicated left turn lanes and one dedicated right turn lane from eastbound Avenue Two onto the AME, one dedicated left turn lane and one dedicated right turn lane from westbound Avenue Two onto the AME, as well as one thru lane for thru traffic travelling in both directions on Avenue Two. Depending on negotiations with BNSF, the existing Avenue Two intersection at Santa Fe Drive and the BNSF railroad crossing may be removed and local traffic directed to the AME. This would be determined during the design phase of the project. Merced County is also planning to construct roadway improvements along Avenue Two in the very near future. The configuration of the Avenue Two intersection shown for Modified Alternative 1B assumes that the construction of this project has been completed.**

6. This four-way signal-controlled intersection would connect the AME with an extension of Belcher Avenue. This intersection would feature left and right turn lanes from the Belcher Avenue extension onto the AME, as well as dedicated lanes for thru-traffic. From the AME southbound, vehicles would be able to use dedicated left or right turn lanes or two thru-lanes. Northbound on the AME, there would be two dedicated left turn lanes, one dedicated right turn lane and two thru-lanes. This intersection has a slightly different configuration depending on whether Alternative 1A or **Modified** Alternative 1B is selected. At present, Belcher Avenue terminates at Fox Road and does not cross the project study area. This extension of Belcher Avenue would travel approximately 1.25 miles in an east-west direction through the project study area and would connect with Green Sands Avenue at the western edge of the project study area.

7. The new four-way signal-controlled intersection between the AME and Elliot Avenue would feature the same lane configuration for each approach: a dedicated left turn lane, a dedicated thru-lane, and a right turn/thru traffic option lane. Elliot Avenue would be widened and realigned between Gurr and Buhach Roads.

8. A new four-way signal-controlled intersection would be built to connect the AME to Gurr Road to the east and a new, yet unnamed frontage road that runs parallel to the AME on its west side. Each of the

AME approaches will feature a dedicated left turn lane, a through lane, and a shared through-right lane. Each of the approaches for the connecting road will feature a shared lane for all movements.

9. The existing stop sign controlled intersection of SR 140 and Gurr Road would be changed from a three-way intersection to a four-way intersection with a new connection to the AME. Vehicles traveling on westbound SR 140 would have a choice of one dedicated left turn lane onto Gurr Road, two dedicated right turn lanes onto the AME, as well as one thru-lane. Southbound AME would feature two dedicated left turn lanes and one dedicated right turn lane onto SR 140, as well as one thru-lane to Gurr Road. From eastbound SR 140, vehicles could turn left onto the AME from one dedicated turn lane, continue on SR 140 via a thru lane, or continue straight or turn onto Gurr Road from a decision lane. Motorists traveling northbound on Gurr Road would choose between a dedicated left turn lane onto SR 140, a thru-lane onto the AME, or a could continue straight or turn onto eastbound SR 140 from a decision lane.

   Detailed approach and turn lane diagrams can be found in **Section 4.5, Traffic and Transportation**.

Changes to Existing Roadways

MAJOR ROADWAY CHANGES

Implementation of the AME will involve changes to existing roadways. The following major roadway changes are anticipated:

- Realignment of an approximate 1.5 mile portion of SR 99 in conjunction with the construction of the AME. The realigned portion of SR 99 would be built as a 6-lane freeway but would have an adequate right-of-way width to accommodate a later possible expansion of SR 99 to a maximum of 8-lanes.
- Replacement of the existing Buhach Road/SR 99 overpass and interchange with a new overpass over both SR 99 and the Union Pacific Railroad (UPRR) railroad tracks. The new overpass would not provide direct access from Buhach Road to SR 99.

LOCAL ROADWAY EXTENSIONS AND REALIGNMENTS

Two local roadways would be extended to provide additional local access to the AME and improve local traffic circulation. The following roadways would be extended to connect with the AME:

- Thornton Road would be extended approximately one-half mile northward from its current terminus at W. Tahoe Street to connect with the AME.
- Belcher Road would be extended westward 1.25 miles from its present terminus at Fox Road, across the AME, to connect with the existing intersection of Green Sands Road and Buhach Road. The roadway extension would be a 4-lane median divided roadway that would provide east-west vehicle circulation across the project area and would also provide local access to the AME.

Segments of two local roadways would be realigned to provide 90 degree **(approximately)** intersections with the AME project to optimize intersection safety:

- Under Alternative 1A, a segment of Franklin Road between Bellevue Road and Cardella Road would be realigned around the new intersection with the AME (see intersection 4, above).
- Elliot Avenue would be widened from two to four lanes between Buhach Road and Gurr Road. A portion of this segment of Elliot Avenue would be realigned around the new intersection with the AME (see intersection 7, above).

CHANGES TO LOCAL ACCESS

To accommodate the proposed right-of-way for the AME, local access to and from some local roadways would be changed. Figure 3-6a and 3-6b illustrates the locations of the roadways where changed access would occur for Alternatives 1A and **Modified** 1B, respectively. Depending on the alignment selected, the following roadways would be affected:

1. For the majority of through traffic traveling on Bellevue Road between the intersection of SR 59 and Franklin Road, local access would be largely replaced by the AME. Bellevue Road will be maintained as a frontage road with no connection to SR 59 in order to provide access to the homes and businesses presently located on the south side of Bellevue Road between SR 59 and the Franklin Road. The frontage road would connect to the AME at a new intersection (see intersection 2 above) approximately ½ mile west of the current intersection of SR 59 and Bellevue Road. The project would construct the AME as a separate four-lane roadway just north of Bellevue Road, extending from SR 59 to Franklin Road (see figure 3.6c).

2. Immediately west of Franklin Road, Bellevue Road would be realigned to the north to connect with Franklin Road approximately 800 feet north of the new intersection of Franklin Road and the AME. It is intended that this portion of Bellevue Road will eventually connect with a southern entrance to the Castle Airport Development Center.

3. Under Alternative 1A, Fox Road would be bisected by the AME immediately south of its intersection with Bradshaw Road and would terminate in cul-de-sacs north and south of the AME. Local access to Bradshaw Road and Fox Road north of the AME would be taken from the western segment of Bellevue Road that connects to Franklin Road and the future connection with the Castle Airport Development Center. South of the AME, access from homes and farms on Fox Road would be taken via the existing intersection with Santa Fe Drive (southbound) or via Cardella Drive to Franklin Road and/or to the AME (northbound).

4. Under **Modified** Alternative 1B, Fox Road would be bisected by the AME immediately south of the existing intersection of Bellevue Road. Fox Road would terminate in a cul-de-sac between the intersection with Bradshaw Road and the AME. Local access to Fox Road north of the AME would be taken from the western segment of Bellevue Road that connects to the Franklin Road and the future connection with the Castle Airport Development Center. South of the AME, access from homes and farms on Fox Road and Bradshaw Road would be taken via the existing intersection with Santa Fe Drive (southbound) or via Cardella Drive to Franklin Road and/or to the AME (northbound).

5. Under Alternative 1A, Avenue Two would be reconfigured slightly south of its existing alignment and would connect with the AME (see discussion of intersection 5, above) but would no longer cross the railroad tracks to connect directly with Santa Fe Drive. A segment of Avenue Two would be maintained as "Old Avenue Two" and would connect with a short section of Gurr Road (see #5 below). This

segment of Old Avenue Two would connect with the realigned portion of Avenue Two at a new three-way intersection. Access for homes and farms located along Avenue Two, Old Avenue Two, and Gurr Road north of the AME would be taken via Avenue Two westbound, or via the newly realigned segment of Avenue Two and the connection with the AME.

Under **Modified** Alternative 1B, a short segment of Avenue Two west of the AME would be reconfigured to ~~turn slightly south of its existing alignment and would~~ connect directly with the AME (see discussion of intersection 5, above). A segment of Avenue Two would ~~terminate in a cul-de-sac on the east side of the AME~~ **allow through movements to cross the AME. (See discussion of interchange 1, above)**. ~~This segment would connect via the existing intersections to Gurr Road (see #5 below) and would continue to cross the railroad tracks to connect to Santa Fe Drive~~. Access for homes and farms located along Avenue Two west of the AME would be taken via Avenue Two ~~westbound~~ and the connection with the AME. Access to and from Avenue Two east of the AME would be taken via Gurr Road or Santa Fe Drive.

6. Under Alternative 1A, Gurr Road would be bisected by the AME just south of Avenue Two and would terminate in cul-de-sacs north and south of the AME. Access to homes and farms along the short segment of Gurr Road north of the AME would be taken via Old Avenue Two.

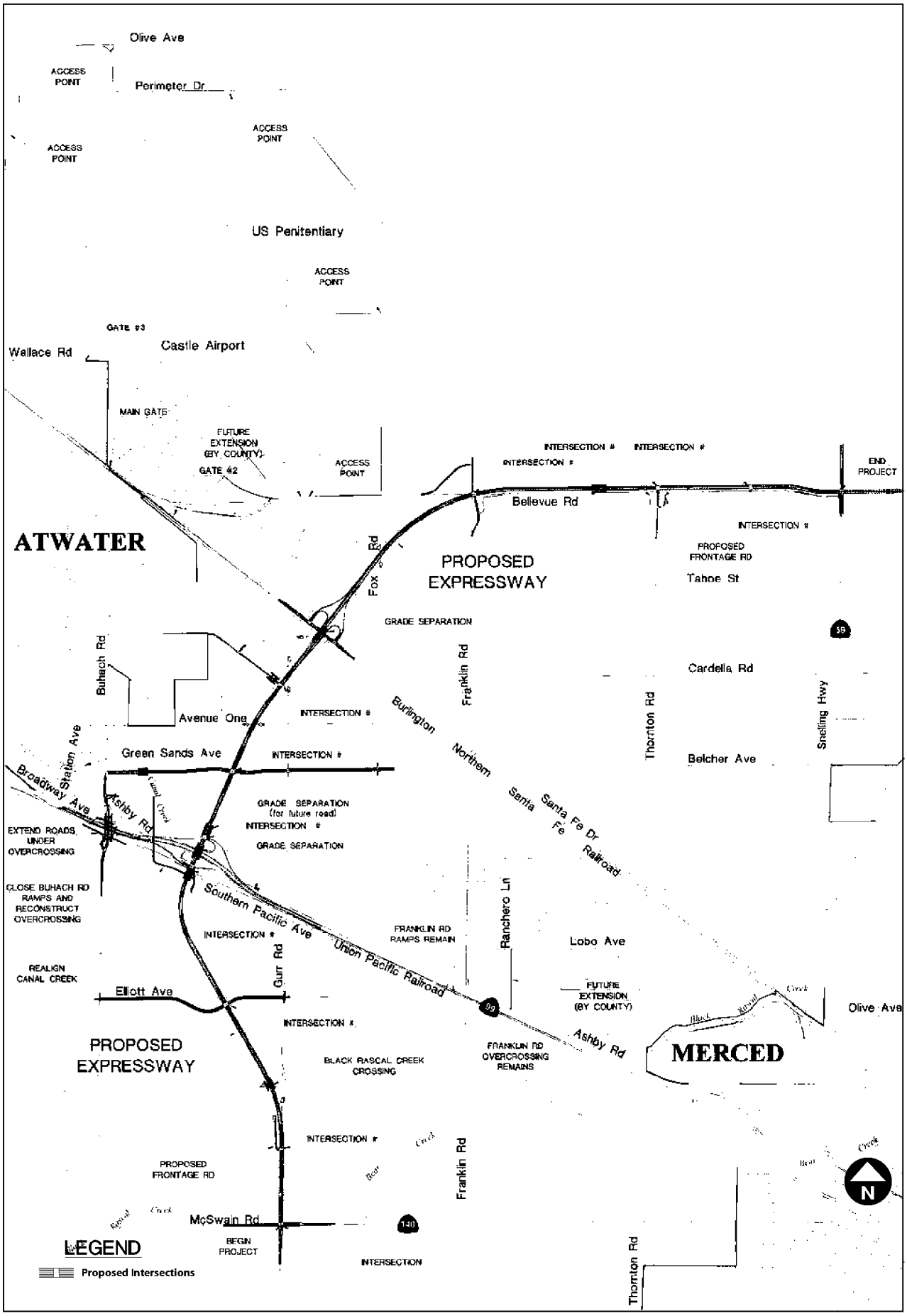
   Under **Modified** Alternative 1B, there would be no change in access to this portion of Gurr Road. Gurr would still connect with Avenue Two east of the AME which would provide access onto Santa Fe Drive.

7. **Under Alternative 1A,** Avenue One would be bisected by the AME and would terminate in cul-de-sacs on either side of the AME. Access to Avenue One west of the AME would be taken from existing Avenue One via Buhach Road. Access to the short segment of Avenue One between the AME and Gurr Road would be taken from Gurr Road or existing Avenue One east of Gurr.

   Under Modified Alternative 1B, there would be no change in access to Avenue One. The AME would pass under Avenue One without providing a connection to the roadway. Avenue One would be slightly elevated to cross over the AME on a new bridge structure.

8. The portion of Ashby Road between Valley Drive and Buhach Road would be abandoned. Ashby Road would terminate at the intersection of Valley Drive. An underpass under the AME would be provided on the north side of SR 99 for a possible future extension of Ashby Road or Broadway Avenue. The location of this underpass is shown in Figure 3-7.

   Broadway Avenue would no longer connect with Buhach Road north of SR 99, but would ~~terminate in a cul-de-sac under the new Buhach Road overpass~~ **be extended underneath the Buhach Road overpass to connect to the western remnant of Ashby Road**. Access to SR 99 and the homes and businesses along Broadway Avenue, Buhach Road and the residential area north of Broadway Avenue would be taken via Green Sands Avenue and the new intersection with the AME and Belcher Avenue (see intersection 6).

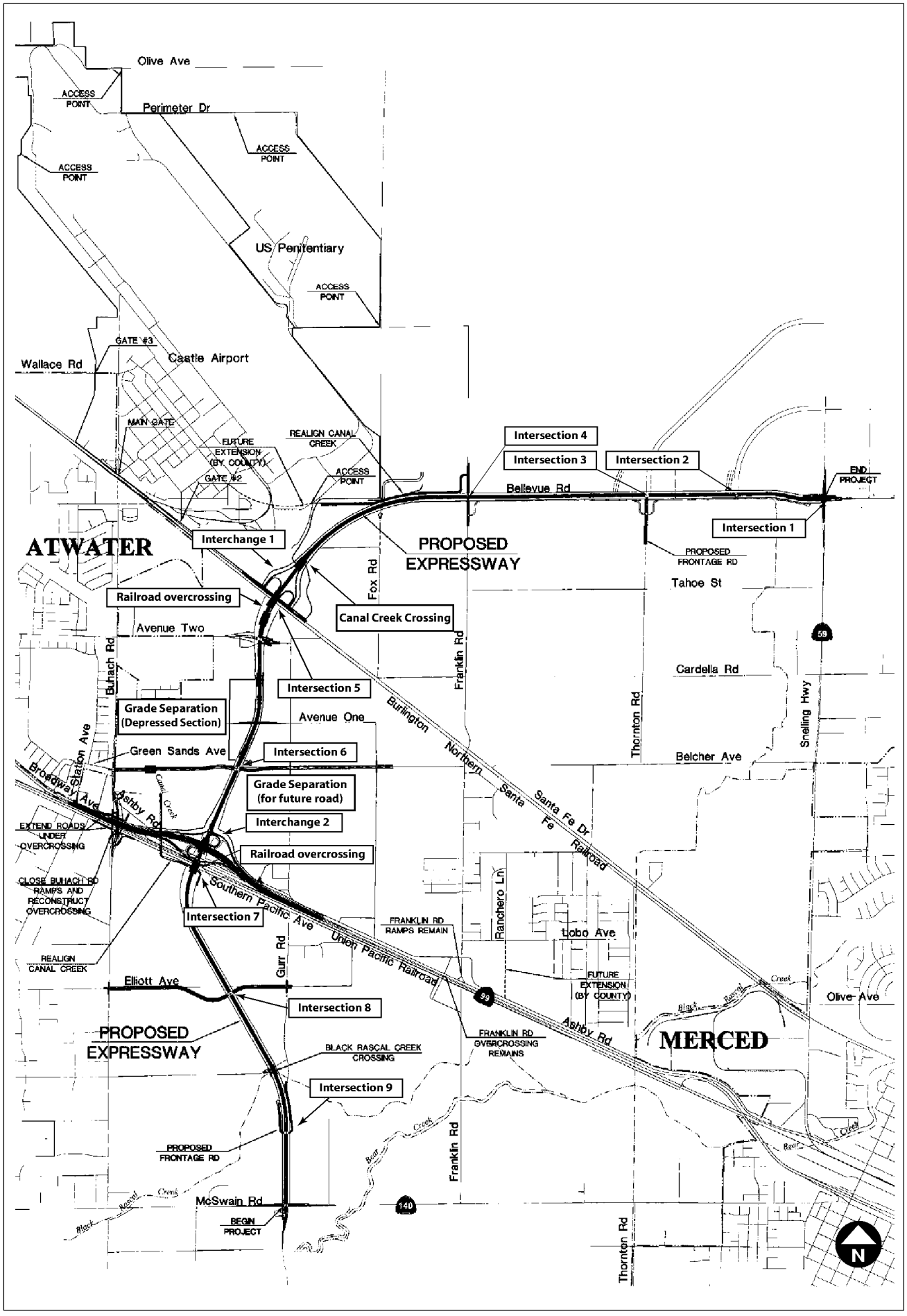


ATWATER-MERCED EXPRESSWAY

Alternative 1A

FIGURE 3-2a

Source: MTCo. 2007.



LEGEND

Proposed Intersections

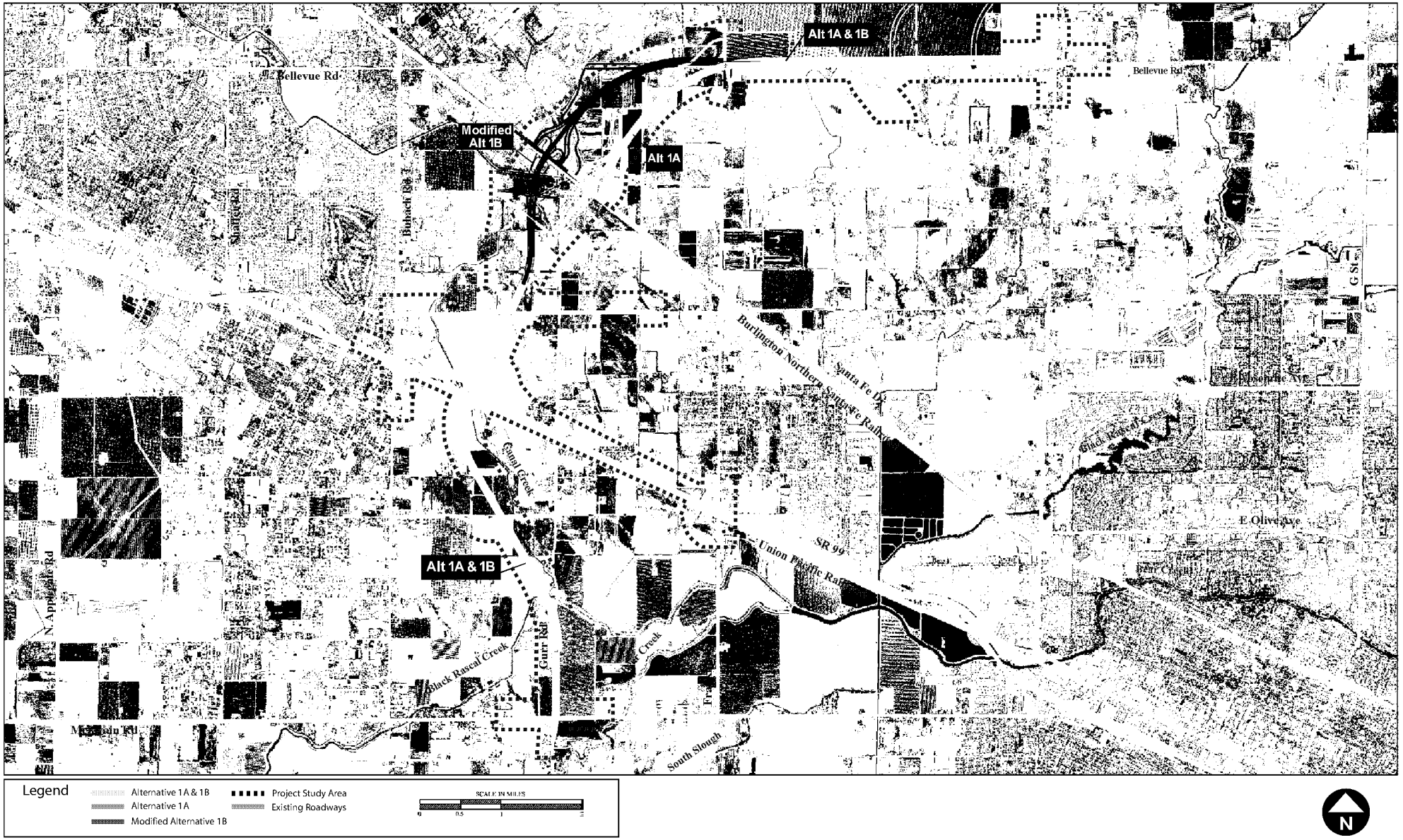
SCALE IN MILES

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ATWATER-MERCED EXPRESSWAY

Modified Alternative 1B

REVISED FIGURE 3-2b

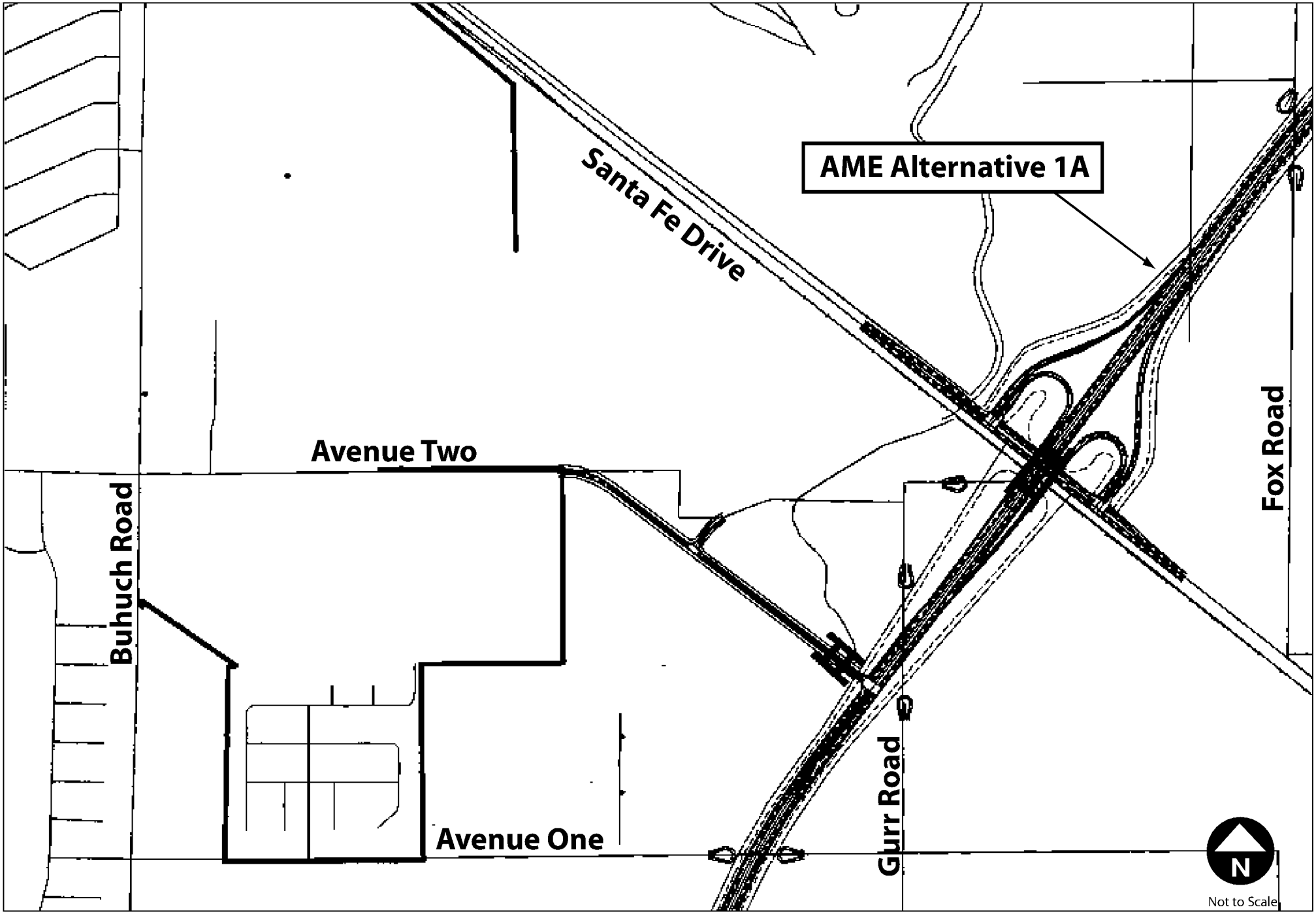


ATWATER-MERCED EXPRESSWAY

Atwater-Merced Expressway: Alternative 1A & 1B

REVISED FIGURE 3-3

Source: MTCo, September 2008.

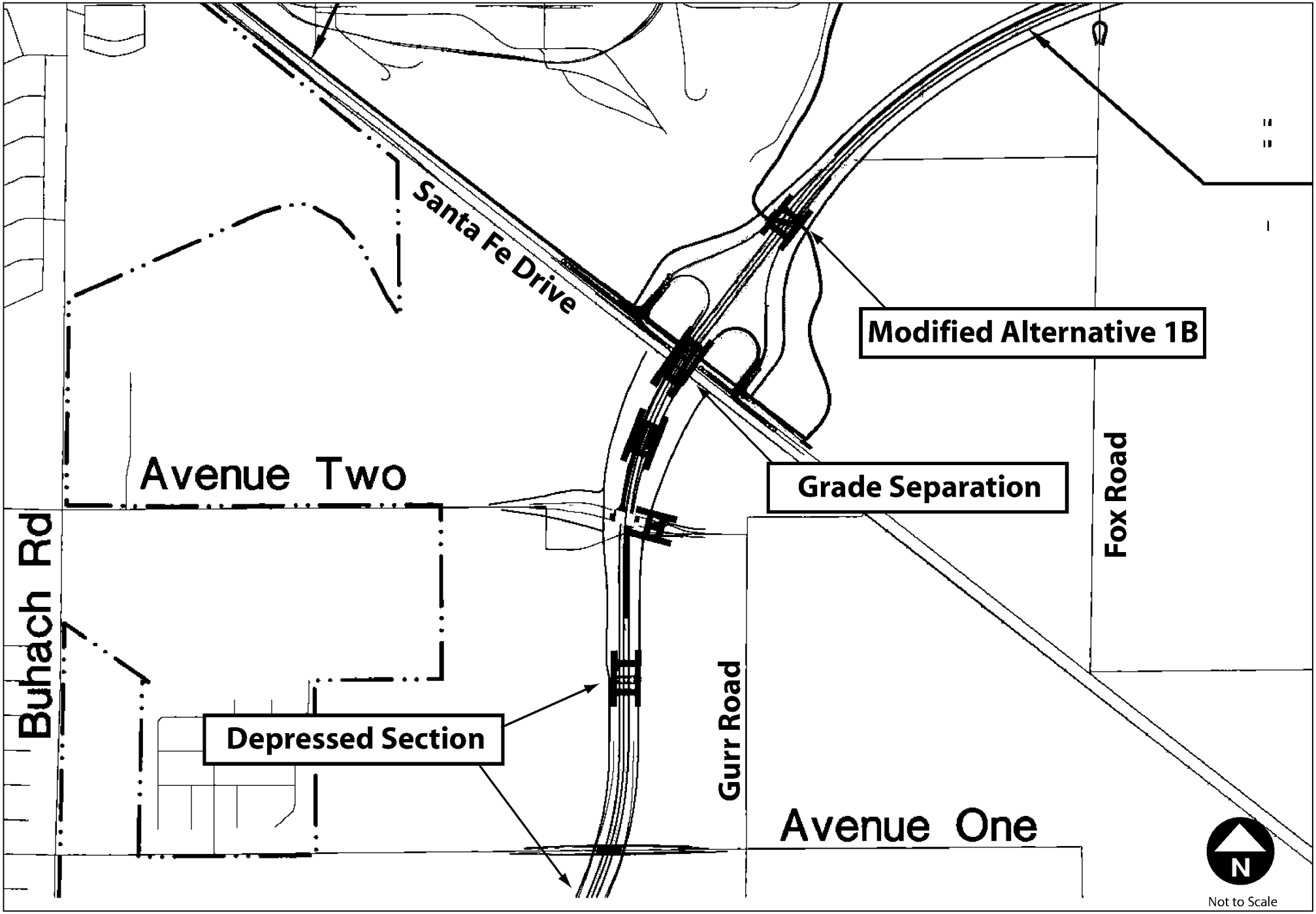


ATWATER-MERCED EXPRESSWAY

Interchange of Alternative 1A and Santa Fe Drive

FIGURE 3-4a

Source: MTCo. 2007

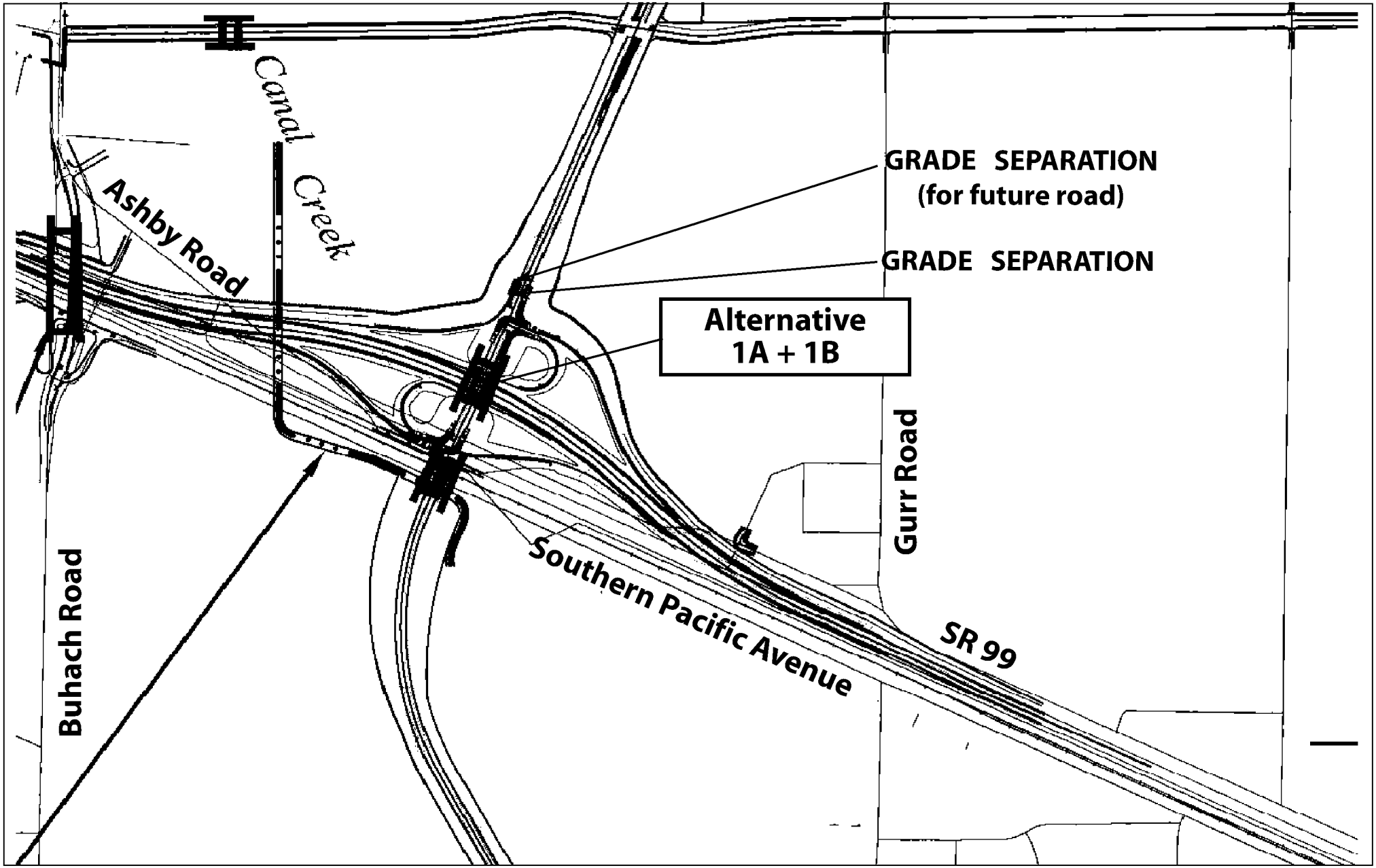


ATWATER-MERCED EXPRESSWAY

Interchange of Modified Alternative 1B and Santa Fe Drive

REVISED FIGURE 3-4b

Source: MTCo. 2008.



N

Not to Scale

ATWATER-MERCED EXPRESSWAY

AME Interchange with SR 99

REVISED FIGURE 3-5

Source: MTCo. 2008.

9. Gurr Road south of Elliot Avenue would be realigned to connect to the east side of AME. On the west side of the AME, a short frontage road (approximately 900 feet) would be constructed to connect local farms, homes or businesses presently located on Gurr Road north of SR 140 with the AME (see intersection 8). This road would terminate in a cul-de-sac after approximately 900 feet.

10. Landram Avenue would terminate in a cul-de-sac west of the AME and would no longer connect with Gurr Road. Access to this residences, farms and businesses along this segment of Landram Avenue would be taken via Buhach road.

RAILWAY OVERCROSSINGS

As described previously, the overpass structures built as part of Interchange 1 and Interchange 2 would also ~~overpass~~ **cross over** the Burlington North Santa Fe Railroad and the Union Pacific Railroad lines, respectively.

CHANGES TO WATER CONVEYANCE FEATURES

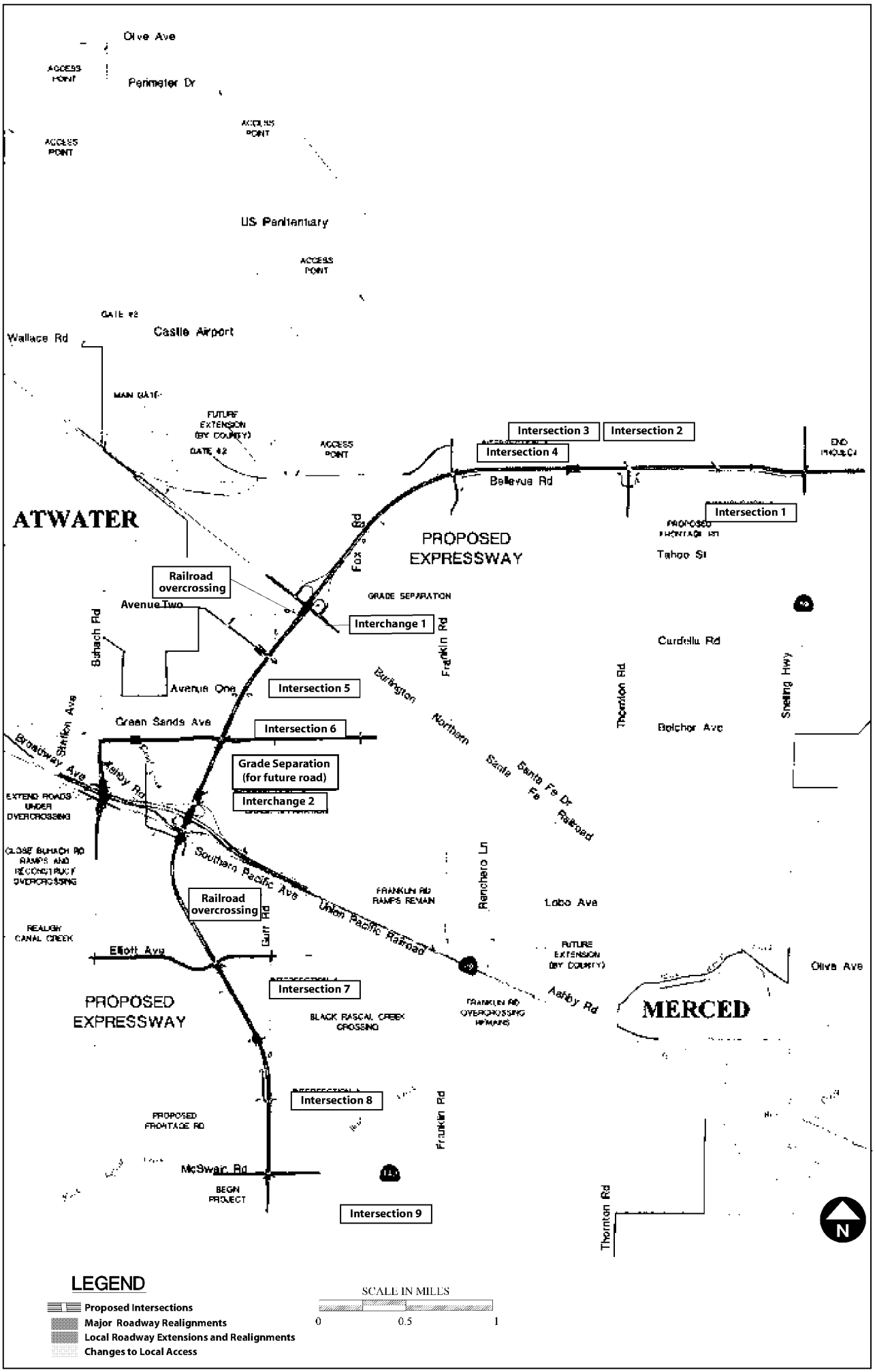
Realignment of Canal Creek

Under Alternative 1A or **Modified Alternative** 1B, a segment of Canal Creek would be realigned around the proposed interchange of the AME and SR 99. The realignment would shift the path of Canal Creek to the west of the proposed SR 99 interchange. Canal Creek would continue directly south beyond Clover Road, rather than cutting diagonally across SR 99. The realigned creek would then travel parallel to the south of SR 99 until reaching its original location to the southeast corner of the proposed interchange. This realignment would remove the creek from areas of high construction and operational activity. Figure ~~3-8~~ **3-7**shows the location of this proposed realignment of Canal Creek.

Under **Modified** Alternative 1B, there would be a second small segment of Canal Creek realignment near the intersection of Bellevue Road and Fox Road. The realignment would change the portion of Canal Creek that travels directly adjacent to Bellevue Road between Franklin Road and Fox Road. This segment of the creek would be shifted to the north of Bellevue Road to Fox Road to avoid the proposed AME **Modified** Alternative 1B alignment. The realigned Canal Creek would then turn south and run parallel to Fox Road until reaching its original path at the intersection of Bellevue Road and Fox Road.

Culverts and Bridge Crossings of Creeks and Irrigation Channels

Both Alternative 1A and Modified Alternative 1B involve the construction of culverts or bridges to allow the new roadway to cross over several creeks and irrigation channels including Canal Creek, Black Rascal Creek, Henderson Lateral, Lateral A, Lateral A-A, Lateral B, Buhach Lateral, and Landram Lateral. Additionally, Alternative 1A would involve constructing a culvert on the Main Ashe Lateral. Modified Alternative 1B would require constructing crossings for the crossing of Livingston Canal and the Armas Lateral. Potential impacts to local hydrology for constructing these culverts and bridges are addressed in Section 4.9, Hydrology and Water Quality.

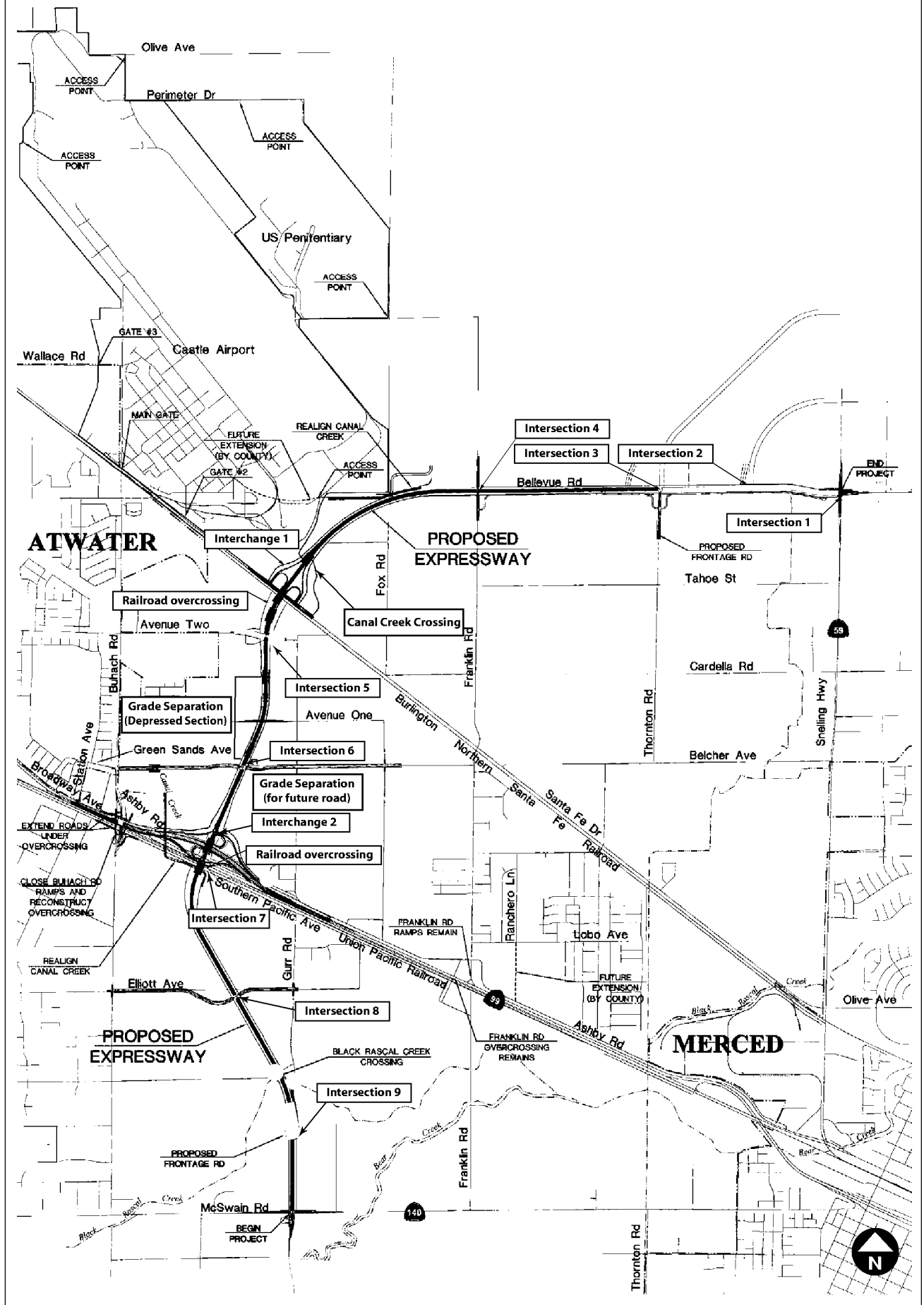


ATWATER-MERCED EXPRESSWAY

Changes to Access with Alternative 1A

FIGURE 3-6a

Source: MTCo. 2007.



LEGEND

- Proposed Intersections
- Major Roadway Realignments
- Local Roadway Extensions and Realignments
- Changes to Local Access

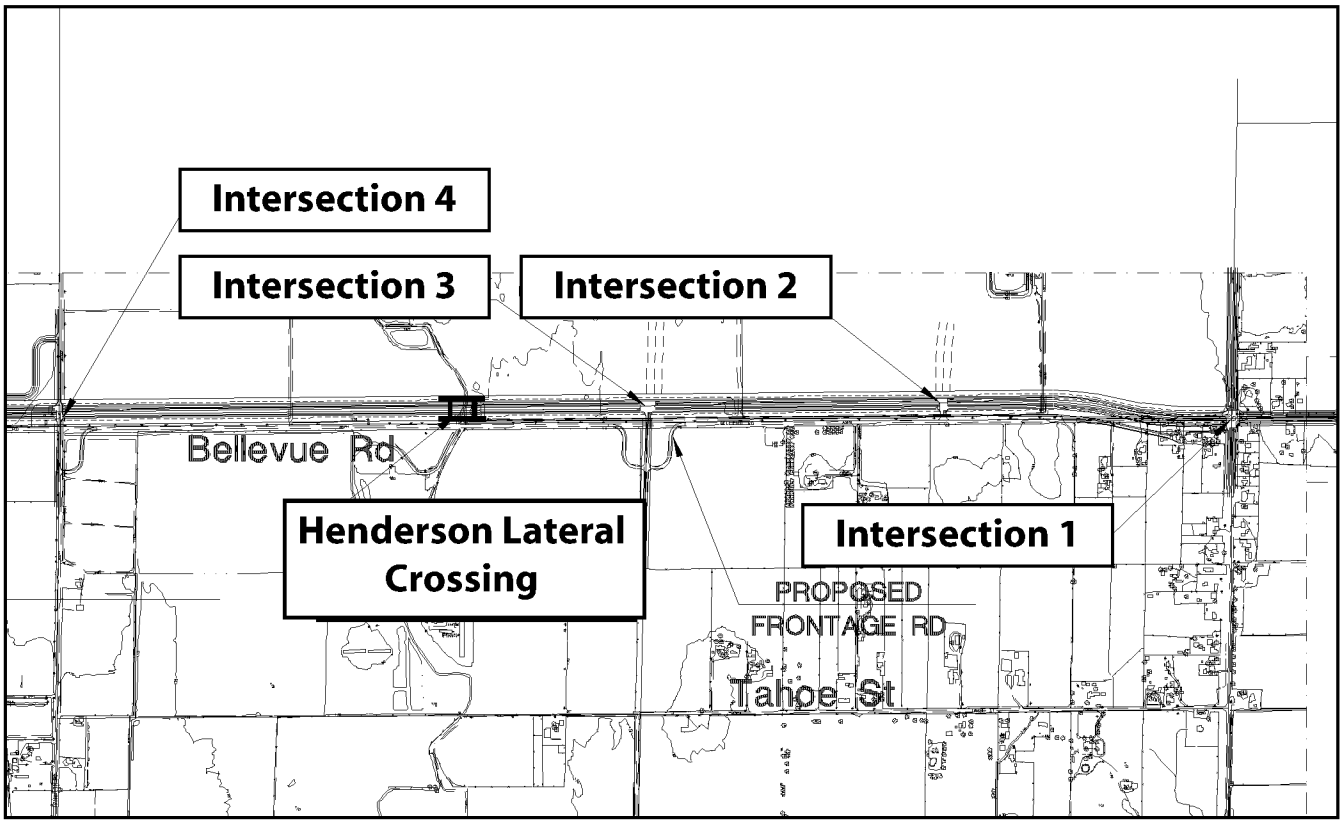
SCALE IN MILES

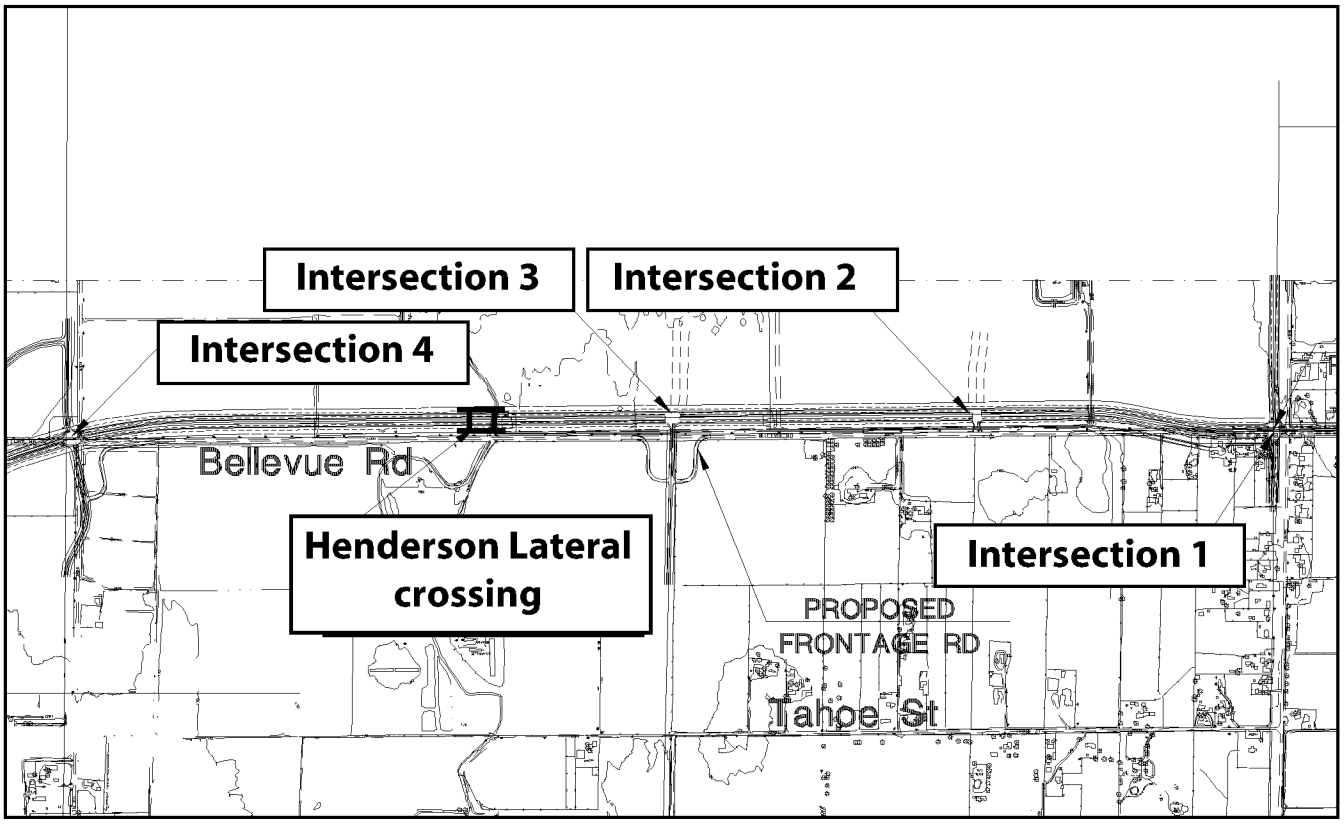
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ATWATER-MERCED EXPRESSWAY

Changes in Access with Modified Alternative 1B

REVISED FIGURE 3-6b





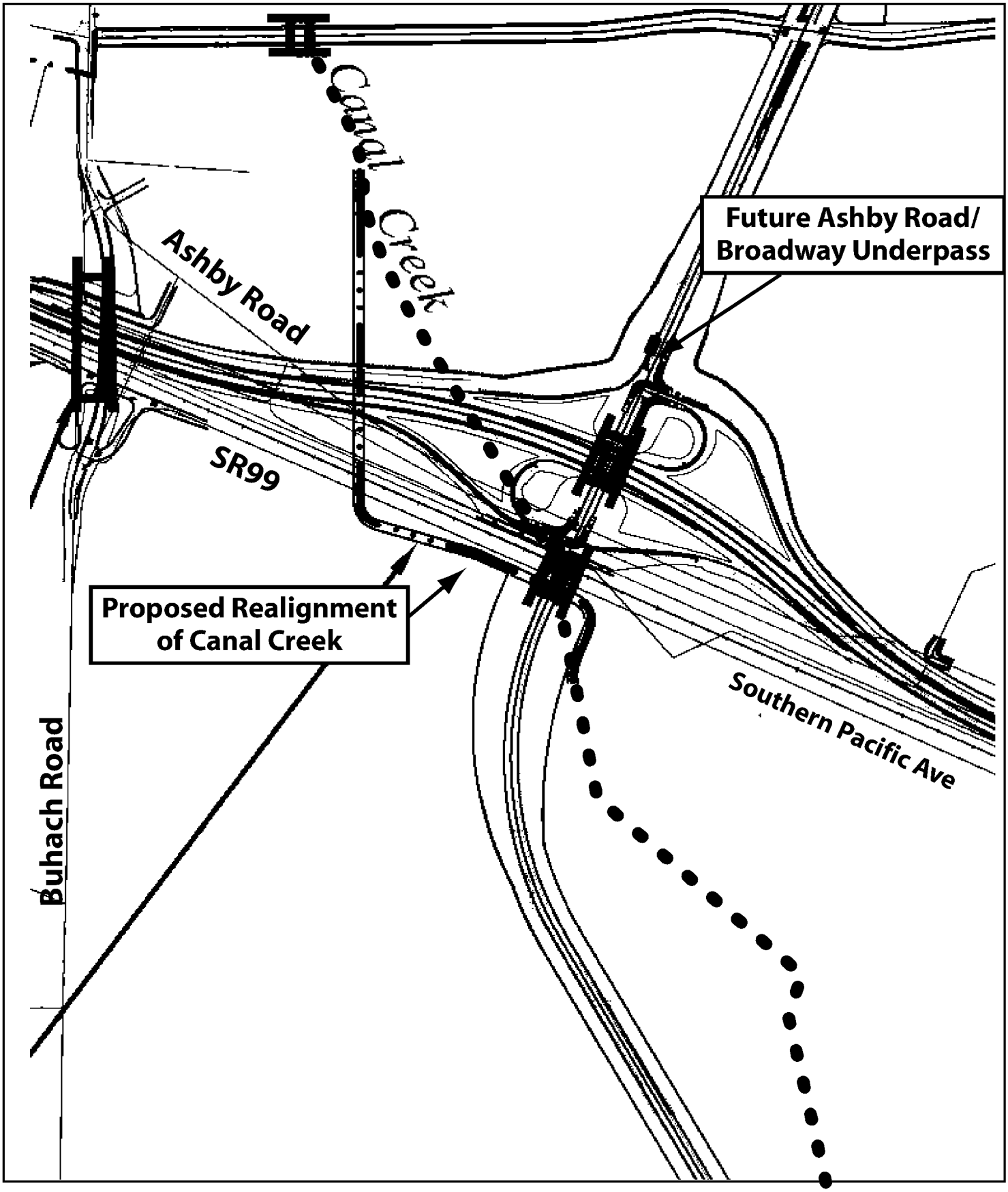


ATWATER-MERCED EXPRESSWAY

Bellevue Road Maintained Section - Detail

FIGURE 3-6c

Source: MTCo. 2007.



Legend:
- Existing Canal Creek
- Proposed Realignment of Canal Creek
- AME

N

ATWATER-MERCED EXPRESSWAY

Location of Ashby/Broadway Underpass and Proposed Realignment of Canal Creek

REVISED FIGURE 3-7

Source: MTCo. September 2008.

3.6 CONSTRUCTION AND PHASING PROGRAM

Presently, funding is not available for the project and a long-term funding strategy is being developed. The project has been designed such that it could be built in phases, as traffic volumes increase in the region in the future. ~~More information on construction and phasing will be available~~ **Phasing of the AME project will be developed** once a final alignment is selected.

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4.1 CONSISTENCY WITH EXISTING PLANS AND POLICIES

CEQA requires that an EIR discuss any inconsistencies between the project and existing general plans and regional plans. (CEQA Guidelines § 15125(b)) Merced County and the City of Atwater are the jurisdictions with land use regulatory authority for lands within the project study area.

Applicable land use and circulation goals and policies contained in these jurisdictions' general plans are discussed in this section of the Draft EIR. Consistency with land use and circulation policies of relevant specific plans is also discussed. Discussions of plans, goals, and policies related to other specific issue areas addressed in this Draft EIR (e.g., air quality, noise, biology, etc.) can be found in their respective sections of this Draft EIR.

4.1.1 EXISTING CONDITIONS

Setting

APPLICABLE GENERAL PLANS

As shown in Figure 4.1-1, the majority of the project study area is located in unincorporated Merced County. A small portion of the project study area, the westernmost potion of the alternative alignments, is located in the City of Atwater. Due to its location, the project is subject to policies in the City of Atwater General Plan and the Merced County General Plan.

CITY SPHERES OF INFLUENCE

Although technically located in Merced County, a large portion of the project study area between SR 99 and Santa Fe Drive is located within the City of Atwater's Sphere of Influence (SOI). City of Merced's SOI encompasses the northeastern portion of the project study area around the intersection of SR 59 and Bellevue Road. A SOI boundary represents the future area of anticipated growth for a city.[1] The City of Atwater and the City of Merced do not have jurisdiction over unincorporated land within their SOI but do have some influence over decisions being made in relation to development of these lands. Lands in the project study area that are not within either City's SOI are considered unincorporated lands and are under the jurisdiction of Merced County.

MERCED COUNTY GENERAL PLAN

The majority of the project would occur within areas of unincorporated Merced County. Therefore, it is important to consider the policies and regulations of Merced County, especially those concerned with transportation and circulation. Because the Merced County General Plan does not specifically mention the

[1] A SOI boundary represents the future area of anticipated growth for a city. Every SOI must be adopted by the Local Agency Formation Commission (LAFCO) in order to ensure the orderly growth of government agencies, preserve agricultural lands, and discourage urban sprawl.

project, a General Plan Amendment is necessary to include the final selected alignment of the AME in the Circulation Map of the Merced County General Plan.

CITY OF MERCED GENERAL PLAN

While the project does not enter the boundaries of the City of Merced, the project would affect vehicular circulation and development patterns in the City. As a result, consideration of the policies and regulations of the City of Merced, particularly those related to transportation, is warranted. Development of the AME has been anticipated by the City for some time, as evidenced by the discussion of a "planned Highway 59 Expressway" in the Transportation Element of the City's General Plan.[2] According to the General Plan, this expressway is part of a larger "beltway" circulation plan meant to relieve vehicular congestion in the urban areas of Merced by routing traffic around the City. It is also designed to serve prospective growth areas to the north and northwest of the existing City Limits. Therefore, the AME is consistent with the City of Merced's General Plan.

CITY OF ATWATER GENERAL PLAN

A large portion of the project study area between SR 99 and Santa Fe Drive is located within the City of Atwater's Sphere of Influence (SOI). The City of Atwater does not have jurisdiction over unincorporated land within its SOI but does have some influence over decisions being made in relation to development of these lands. As such, consideration of the policies and regulations of the City of Atwater, particularly those concerned with circulation, is warranted. The City of Atwater General Plan Circulation Element contains plans for future roadway expansion that are consistent with the project. These include mention of connecting SR 99 to an additional "six-lane system," and "eventual removal of the SR 99/Buhach Road interchange," both of which are a part of the project. As a result, the AME is consistent with the City of Atwater General Plan.

CASTLE AIRPORT – AVIATION AND DEVELOPMENT CENTER

Alignment B crosses through Castle Air Force Base Reuse Plan area. The Castle Air Force Base Reuse Plan (Reuse Plan) was completed in 1996 following the announcement of intended base closure. A new agency, the Castle Joint Powers Authority (JPA), was formed by the Cities of Atwater and Merced and Merced County to oversee and facilitate economic reuse of the former military base. The JPA adopted the Reuse Plan in 1996. In August 2000, the County of Merced assumed direct control of Castle and has had title since 2006. Land use plans and policies related to the Castle Air Force Base are included in the consistency analysis below.

The City of Atwater has adopted goals and policies in its General Plan anticipating eventual annexation of the Castle Air Force Base Reuse Plan area. Although this annexation did not occur, these goals and policies are still valid and are discussed in this section.

[2] Merced County. 1997. Merced Vision 2015 General Plan. Revised January 2006.

AIRPORT LAND USE COMPATIBILITY PLAN

Both alignments are located within the compatibility zones of the 1999 Merced County Airport Land Use Compatibility Plan. Project consistency with this plan is discussed in the Section 4.11, Hazardous Materials, since the plan addresses potential hazards to aircrafts.

FRANKLIN/BEACHWOOD COMMUNITY

The easternmost portion of the alignment of both alternatives along SR 99 travels through the Franklin/Beachwood Community, an unincorporated community in Merced County with its own Community Specific Plan. Relevant policies are discussed in this section.

2007 REGIONAL TRANSPORTATION PLAN FOR MERCED COUNTY

The RTP specifies the policies, projects, and programs necessary over a 20 plus year period to maintain, manage, and improve the region's transportation systems. The RTP lists the AME project on the Tier 1 priority list.

4.1.2 POLICY CONSISTENCY ANALYSIS

The following consistency analysis addresses the project's consistency with relevant goals and policies associated with land use and planning. Consistency with plans and policies related to other environmental issue areas (e.g., air quality, noise, biology, etc.) are discussed in their respective sections.

Table 4.1-1 Policy Consistency

Policy/Objective/ Goal	*Policy/Objective/Goal Text*	*Consistency Analysis*
MERCED COUNTY GENERAL PLAN POLICIES		
Land Use Element		
Goal 7. Conservation of productive agriculture and other valuable open space lands.		
Goal 7, Policy 2	Direct urban uses to less valuable farmland when conversion is justified.	**Consistent.** The project would convert Prime Farmland as defined by the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP). The area between the City of Atwater and the City of Merced is predominantly agricultural and contains a substantial amount of FMMP categorized farmland as discussed in Section 4.2. In order to construct this section of the proposed highway loop system around the City of Merced, any alignment location would likely pass through Prime Farmland. A complete discussion of the physical impacts related to farmland conversion is provided in Section 4.2, which concludes that the amount of farmland that would be converted would be considered less than significant, making this project consistent with this policy.
Goal 12. Long term economic and social benefits, such as employment, are maximized through the reuse of the former Castle Air Force Base.		
Goal 12, Policy 4	During review of individual projects, ensure consistency with the [Castle Air Force Base] Reuse Plan, map and policies.	**Consistent.** Development of the AME project is consistent with the Reuse Plan since it would support redevelopment by increasing the capacity of the circulation system near and increase access to the former Castle Air Force Base.
Circulation Element		
Goal 1. Establish a roadway system consisting of local roads, collector roads, arterial roads, and freeways, adequate to serve existing and future land uses.		
Goal 1, Policy 2	The acceptable level-of-service (LOS) for roadways located within rural areas of the County shall be LOS "C" or better.	**Consistent.** The AME facility will operate in the A to C range during AM and PM peak hours. The AME project would also provide traffic enhancements that would improve the LOS at local roadways and intersections. Additional information on specific intersections and roadway segments is provided in Section 4.5.

Policy/Objective/ Goal	*Policy/Objective/Goal Text*	*Consistency Analysis*
Goal 1, Policy 3	The acceptable level-of-service for roadways located within urban growth areas such as Highway Interchange Centers (HIC), Specific Urban Development Plans (SUDP) of unincorporated areas, or Rural Residential Centers (RRC), shall be LOS "D" or better during peak traffic periods.	**Consistent.** The AME facility will operate in the A to C range during AM and PM peak hours. The AME project would also provide traffic enhancements that would improve the LOS at local roadways and intersections. Additional information on specific intersections and roadway segments is provided in Section 4.5.
Goal 1, Policy 4	LOS "D" is acceptable for roadways located outside urban growth areas if the roadway services as a connector between urban growth areas.	**Consistent.** The portions of the project that are located outside urban growth areas will operate at LOS D or better.
Goal 1, Policy 6	Within the SUDP of an incorporated city, the acceptable level-of-service shall be as stipulated in the adopted Circulation Element of the respective city, or where none is specified, as stipulated in Policies 3 and 5 of this Goal.	**Consistent.** The portions of the project that are located outside urban growth areas will operate at LOS D or better.
Goal 1, Policy 11	Road rights-of-way and improvements shall be coordinated with incorporated cities and with adjacent counties to ensure compatibility.	**Consistent.** The project is accounted for in the City of Atwater General Plan Circulation Element. The City of Atwater is the only incorporated city through which the project will operate. The project is also being designed in consultation with Caltrans to ensure compatibility with State standards.
CITY OF ATWATER GENERAL PLAN POLICIES		
Land Use Element		
Goal 1. Create attractive residential streetscapes and neighborhoods.		
Policy LU-1.3	Design streets with a priority on neighborhood structure and pedestrian scale.	**Consistent.** The AME project is proposed as a four-lane divided expressway with two access-controlled freeway-style interchanges. The expressway would not be designed at a pedestrian scale since its purpose is to enhance overall regional transportation and to divert automobiles from congested roads in Merced. This expressway purpose is by nature inconsistent with pedestrian scale design. However, the project has been designed as an expressway (as opposed to a freeway) and there would be a number of at-grade signalized intersections. At these intersections, pedestrian-controlled traffic signals and crosswalks would be provided to ensure pedestrian safety in crossing the AME.

Policy/Objective/ Goal	*Policy/Objective/Goal Text*	*Consistency Analysis*
Goal 4. Enhance the appearance of primary entrances into and through Atwater.		
Policy LU-4.1	Utilize landscaping, signage, and gateway treatments to enhance the aesthetic appearance of primary streets into and through the community including, but not limited to: • Applegate and SR 99 • Atwater Boulevard • New Westside Entrance • Bellevue Road • Buhach Road • Castle Parkway • Shaffer Drive • Santa Fe Drive • Winton Way	**Consistent.** A landscaping plan has not been developed yet for this project. It is expected that landscaping design, signage, lighting, and materials usage will be in accordance with local regulations. See section 4.4 for a complete discussion of visual resources.
Goal 5. Enhance views of Atwater from SR 99.		
Policy LU-5.1	Develop SR 99 as a landscaped corridor through the Atwater community.	**Consistent.** The project would realign a portion of SR 99 within Atwater City limits and replace it with a more modern and larger roadway section. This realigned section would be built in accordance with Caltrans guidelines for landscaping, signage, lighting, and material usage. Because the project will provide these features and treatments, the project will enhance the visual elements of SR 99 in Atwater on this portion of roadway.
Goal LU-7. Ensure that long term economic and social benefits, such as employment, are maximized though the reuse of the former Castle Air Force Base.		
Policy LU-7.9	In order that reuse activities will not compromise long-term toxic clean-up programs at Castle, all applications received by the County involving uses with the potential to create groundwater contamination or other environmental hazards shall be referred to the Air Force Base Agency for comment.	**Consistent.** The AME project will not result in groundwater contamination (see Section 4.9, Hydrology and Water Quality) or other environmental hazards (see Section 4.10, Hazards and Hazardous Materials). As part of the CEQA review and project approvals, the Castle Airport – Aviation and Development Center has the opportunity to review project details to ensure consistency with the Reuse Plan.
Policy LU-7.22	All reuse activities shall be in conformance with the California Environmental Quality Act.	**Consistent.** This Draft EIR ensures that the project is in conformance with CEQA.

Policy/Objective/ Goal	*Policy/Objective/Goal Text*	*Consistency Analysis*
Circulation Element		
Goal CIRC-1. Maintain adopted Level of Service (LOS) for City streets and intersections.		
Policy CIRC-1.1	Establish and maintain a minimum LOS of D for all arterial and collector streets within the City.	**Consistent.** The AME facility will operate in the A to C range during AM and PM peak hours and AME intersections will operate above state and local LOS thresholds. The AME project would also provide traffic enhancements that would improve the LOS at local roadways and intersections. Additional information on specific intersections and roadway segments is provided in Section 4.5.
Policy CIRC-1.3	Design roadway improvements and evaluate development projects using established LOS standards.	**Consistent.** The proposed roadway improvement has been designed and evaluated using established LOS standards.
Policy CIRC-1.4	Develop the City's roadway system in conformance with the planned roadway system shown on the Circulation Plan (Figure 3-7) and the City's adopted cross section standards.	**Consistent.** The project is accounted for in the City of Atwater's General Plan Circulation Element and is shown on the Circulation Plan.
CASTLE AIR FORCE BASE REUSE PLAN POLICIES		
Goal B.1.3. Optimum compatibility with land uses surrounding Castle Airport and among uses locating within its boundaries.		
Objective B.1.3B	Ensure compatible integration of land uses with the boundaries of Castle Airport.	**Consistent.** The project is consistent with land uses within and in the vicinity of the former Castle Air Force Base. Land use compatibility is discussed in Section 4.1.4. Potential hazards related to the existing airport are discussed in Section 4.10.
Objective B.1.3C	Provide for an appropriate diversity of uses, and the optimum use of the existing facilities and property assets.	**Consistent.** The project would provide improved access to the former Castle Air Force Base, which in turn would encourage optimum use of the existing facilities and assets, by increasing regional transportation capacity in the area.
Goal B.1.4. Environmental resources and public health and safety are protected.		
Goal B.1.4, Policy 2	Implement the street tree planting provisions of the plan and where appropriate preserve existing street trees.	**Consistent.** A landscaping plan has not been developed yet for this project. It is expected that landscaping design, signage, lighting, and materials usage will be in accordance with local regulations. See section 4.4 for a complete discussion of visual resources.
Goal B.1.4, Policy 6	Avoid to the degree possible, and mitigate where feasible, impacts to environmentally sensitive areas.	**Consistent.** The portion of the project study area within the Reuse Plan boundaries may contain wetlands and major vegetation as indicated in the Reuse Plan. In Section 4.11, biological resource impacts have been identified and mitigation measures proposed where appropriate. Therefore, the project is consistent with this policy.
FRANKLIN/BEACHWOOD COMMUNITY SPECIFIC PLAN		

Policy/Objective/ Goal	*Policy/Objective/Goal Text*	*Consistency Analysis*
Land Use Goal F.	Maintain and enhance the area's appearance.	**Consistent.** Landscaping design, signage, lighting, and materials usage will be consistent with local regulations. See Section 4.4 for a complete discussion of visual resources.
Transportation/ Circulation Goal A	Ensure adequate vehicular and pedestrian access to individual parcels and all areas of the community.	**Somewhat Consistent.** The project will not completely remove vehicular access to any adjacent parcels; however it will change the total number and location of vehicle access points. The AME project is proposed as a new four-lane divided expressway with two access-controlled freeway-style interchanges. The expressway would not be designed at a pedestrian scale since its purpose is to enhance overall regional transportation and to divert automobiles from congested roads in Merced. This expressway purpose is by nature inconsistent with pedestrian scale design. Therefore, in limited cases existing pedestrian access to portions of parcels adjacent to the AME may be limited. However, the project has been designed as an expressway (as opposed to the freeway) and there would be a number of at-grade signalized intersections. At these intersections, crosswalks would be provided to ensure pedestrian safety in crossing the AME. As a result, the project would be generally consistent with this policy, though some isolated parcels may lose pedestrian access.
Transportation/ Circulation Goal C	Ensure safe circulation for vehicles and pedestrians within the community.	**Consistent.** Where the project involves improvements on local roadways, signalization would be provided as necessary. Roadway design will be consistent with local regulations. The AME project is proposed as a new four-lane divided expressway with two access-controlled freeway-style interchanges. This is by nature inconsistent with pedestrian scale design. However, the expressway would not be required to allow for a pedestrian or neighborhood structure since it's purpose is to enhance overall regional transportation. Where the project involves improvements on local roadways, signalization and sidewalks would be provided as necessary to ensure pedestrian safety at applicable roadways and intersections. This is consistent with local regulations.
2007 REGIONAL TRANSPORTATION PLAN FOR MERCED COUNTY		
Objective 1.1. Maintain a Level of Service of Service D on all regionally significant roads.		

Policy/Objective/ Goal	***Policy/Objective/Goal Text***	***Consistency Analysis***
Policy 1.1.1	Fund and implement the projects identified on the Tier 1 priority list in the Action Element of the RTP.	**Consistent.** The AME project is on the Tier 1 priority list in the RTP. Its implementation is consistent with this policy.
Objective 1.2. Identify and prioritize improvements to the regional road system.		
Policy 1.2.1	Prepare and apply evaluation criteria to prioritize regional road projects identified to improve the overall transportation system to the region.	**Consistent.** The AME is designed to enhance access to local, collector, arterial roads, and freeways in the area and to operate at LOS levels that conform to City of Atwater and Merced County standards. In addition, the AME project The AME project is on the Tier 1 priority list in the RTP and is accounted for in the City of Atwater General Plan Transportation Element.
Objective 1.3. Use the existing street and road system in the most efficient possible manner to improve local circulation.		
Policy 1.3.1	Maintain street and road system for vehicle travel, transit services, bicycle travel, and pedestrians.	**Consistent.** Construction of the project would provide infrastructure for increased vehicular, including bus transportation. Furthermore, the project would provide at grade signalized intersections that would allow for pedestrian access across the expressway where appropriate.

4.1.3 IMPACTS AND MITIGATION MEASURES

Project consistency with goals and policies related to the environmental topics discussed in **Sections 4.2** through **4.14**, are discussed in the relevant sections of this Draft EIR. Specifically, impacts related to the displacement of residences and businesses are discussed in **Section 4.3, Population and Housing**. Potential impacts related inconsistencies with the Merced County Airport Land Use Compatibility Plan are discussed in **Section 4.11, Hazards and Hazardous Materials**. Impacts discussed in this section relate to the significance criteria below.

Thresholds of Significance

Based on the CEQA Guidelines (Appendix G), the project would have a significant impact if it would:

a) Conflict with goals, policies, and implementing actions of the general or specific plan of an agency with jurisdiction over the project (including the City of Atwater, City of Merced, Merced County or regional planning area) adopted for the purpose of avoiding or mitigating an environmental effect.

b) Conflict with any applicable habitat conservation plan or natural community conservation plan.

Less Than Significant Impacts

CONSISTENCY WITH PLANNING DOCUMENTS

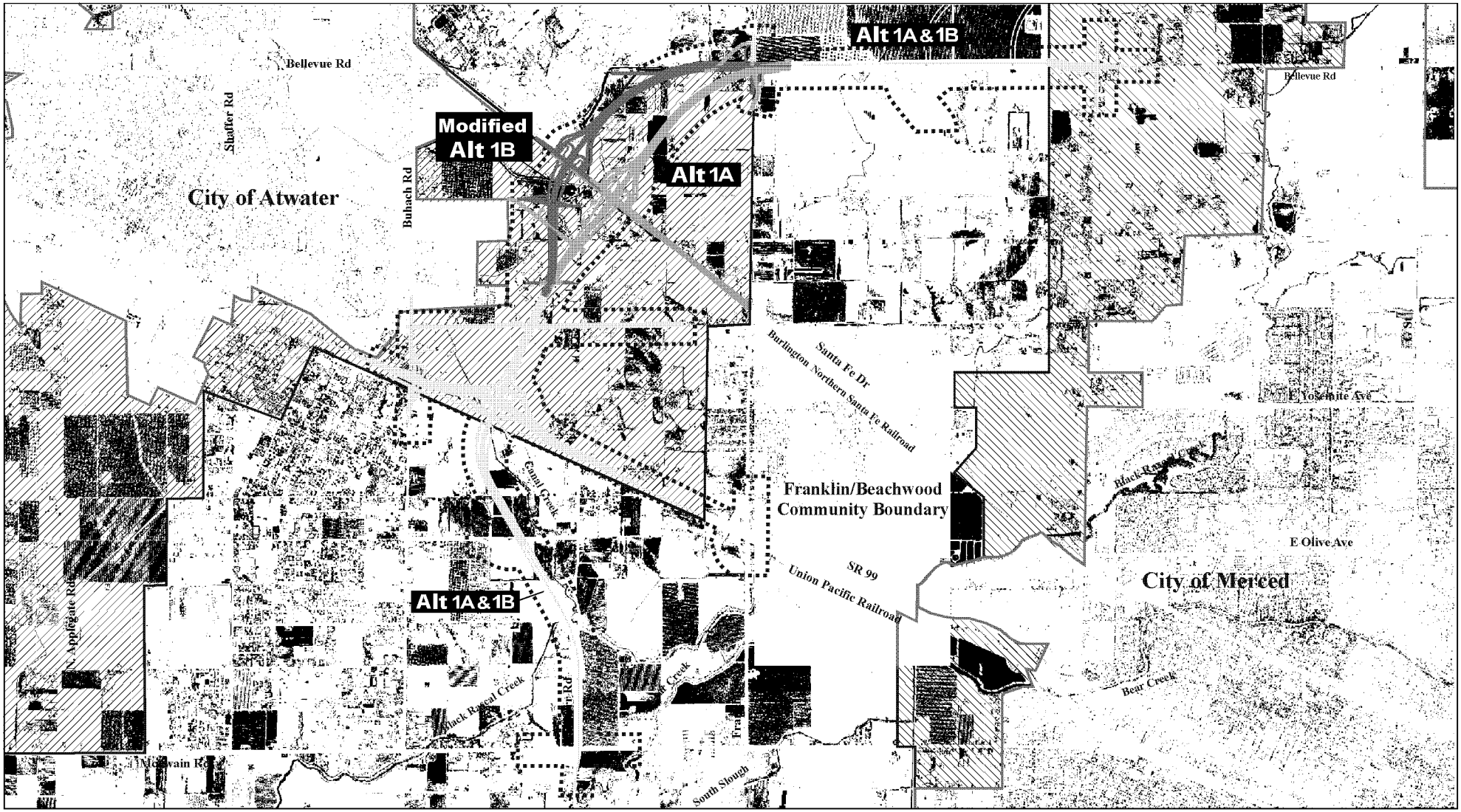
The AME project is an expressway that would directly and indirectly convert productive agricultural and open space lands including FMMP-designated Prime and Important Farmland and agricultural properties under a Williamson Act contract. This could create a discrepancy with Merced County Goal 7 which has been established to preserve productive agriculture and other open space lands. However, the project is consistent with the relevant policy under this goal that allows for the conversion of agricultural land when conversion is justified and encourages conversion to occur with minimal impacts to valuable farmland. A complete discussion of the physical impacts related to farmlands, and corresponding mitigation measures is provided in **Section 4.2**. Since the project is consistent with the relevant policies of Merced County Goal 7, discrepancies with Merced County Goal 7 are considered less than significant.

CONSISTENCY WITH CONSERVATION PLANS

No habitat conservation plan or natural community conservation plan applies to the project. Therefore, the project does not conflict with any habitat conservation or natural community conservation plan.

Significant Impacts

As shown in Section 4.1.3, the project is not inconsistent with any applicable policies. Therefore, no significant impacts have been identified.



ATWATER-MERCED EXPRESSWAY

Planning Boundaries

REVISED FIGURE 4.1-1

Source: MTCo, September 2008.

4.2 LAND USE AND AGRICULTURE

This section describes existing land uses in the project study area and in the vicinity. Relevant land use plans, policies and regulations are discussed and project consistency with them is analyzed. Project impacts to existing land uses, including agriculture, are evaluated and mitigation measures are recommended for any identified significant impacts. The section is based primarily on information contained in the Merced County, City of Merced, and City of Atwater General Plans and Zoning Ordinances, the project plans, and reconnaissance of the project study area. Agricultural information in this section is based primarily on on-line resources from the California Department of Conservation, Division of Land Resource Protection.

4.2.1 EXISTING CONDITIONS

Regional Land Uses

Merced County is located in central California in the San Joaquin Valley. The county has good soils for agriculture and grazing and land uses in the county are dominated by farming and ranching. The first non-indigenous settlements were livestock operations built as early as 1834 on large Spanish land grants in the western portion of the County. During the gold rush, this area became a major feeding stop for sheep and cattle being herded over the Pacheco Pass to San Francisco.

Wheat farming was introduced in the 1850's and relied on natural rainfall for irrigation. However, by 1880, irrigation channels near the Merced River had opened a larger area (1,500 to 2,000 acres) to wheat and other crops. In 1888 the completion of Lake Yosemite ensured that irrigation water was available to croplands far from the Merced River.

The current agrarian landscape in the County reflects these early development forces: large cattle ranches and farms are found in the west, while smaller farms are located in the east where a more developed water supply exists and where there is high quality soil for crop production.

Agriculture remains the base of the County economy. In 2005, the gross production value of agricultural commodities in Merced County surpassed two billion dollars.[1] Milk, chickens, almonds, and cattle are the predominant agricultural commodities produced in the County.

Planning Areas Surrounding the Project Area

The project is located between the City of Atwater and the City of Merced, two urbanizing areas of Merced County. Most of the land within the project study area is used for agriculture, but lands adjacent to the northwest portion of the project study area, particularly near Santa Fe Drive and SR 99, are either undergoing development or under consideration for future development. Residential and commercial land uses extend outward from the cities of Atwater and Merced towards the project study area, especially along SR 99.

[1] Merced County Annual Report of Agriculture. Merced County Department of Agriculture. 2005.

The project crosses through Merced County, two planning areas, the City of Merced's Sphere of Influence (SOI), and the City of Atwater's SOI. Descriptions of the land use patterns in the project study area and the two planning areas are provided below.

PLANNING AREAS

As previously discussed in **Section 4.1, Consistency with Existing Plans and Policies**, the majority of the project study area is within unincorporated areas of Merced County. The northwest portion of the project study area is within the Castle Air Force Base Reuse Plan Area (see below). The westernmost portion of the project study area along SR 99 is within the City of Atwater.

The easternmost portion of the study area, near the intersection of SR 59 and Bellevue Road is within the City of Merced's SOI. A large portion of the study area between Franklin Road and Elliot Avenue is located within the City of Atwater's SOI. A SOI represents the future area of anticipated growth for a city, although the areas stay under county jurisdiction until the time they are incorporated.

The City of Atwater has recently approved the incorporation of approximately 315 acres of land presently under County jurisdiction. Approximately 63 percent of this land will be designated for residential use, with the remainder designated for commercial and business park uses.

Adjoining and along SR 99 on the eastern side of study area is the planning area of the Community of Franklin-Beachwood. The Community of Franklin-Beachwood is an unincorporated community in Merced County. The County has adopted a Community Specific Plan for Franklin-Beachwood with land use and zoning designations that guide local planning within this area.

FORMER CASTLE AIR FORCE BASE

The former Castle Air Force Base is located to the northwest of the project study area. Alignment 1B would cross a portion of the Castle Air Force Base boundary. This 2,777-acre facility operated as a training base for flight training, aircraft maintenance, and fire training from 1941 until its closure in 1995.

~~The County of Merced assumed direct control of Castle in 2000, after sharing control since 1996 with the cities of Atwater and Merced in the Castle Joint Powers Authority (JPA). In 2006, Merced County was granted title for Castle.~~

Following the closure of Castle Air Force Base, reuse activities were conducted through the Castle Joint Powers Authority (JPA), made up of the City of Atwater, the City of Merced, and Merced County. In 1996, the JPA certified an EIR and adopted the Castle Reuse Plan. This Reuse Plan continues to guide land use and development activities at Castle. Merced County assumed direct control of Castle in 2000. In 2006, Merced County adopted a Redevelopment Plan for Castle and was granted title to the facility. In 2007, the County certified a Subsequent EIR for the Castle Redevelopment Plan.

Redevelopment on the former base has resulted in the construction of a variety of land uses, including the Castle Air Museum, business parks, and an airport with a flight training school (opened in January 2007).[2] Additionally, a prison facility, the United States Penitentiary Atwater (USP Atwater), has been constructed and is currently operating in the northeast portion of the Castle. ~~The developed uses at Castle Center are relatively distant from where Alignment 1B of the AME project is proposed except for being in the primary landing pattern for the airport.~~ **Planned uses at the former Castle Air Force Base include commercial and industrial development and a research facility for the new University of California, Merced**.[3] **Modified Alternative 1B is relatively distant from existing development at Castle but is within an area planned for commercial development as set forth in the Castle Reuse Plan.**

The Modified Alternative 1B alignment is also within the primary landing pattern for the former Castle Air Force Base. Potential airport related impacts are discussed in detail in Section 4.10, Hazards and Hazardous Materials.

~~Planned uses on the Castle Center site include commercial and industrial development and a research facility for the new University of California, Merced.4~~

Existing Land Uses in the Project Study Area

The predominant land use in the project study area is agriculture. Farmland surrounds the majority of the project study area. Cropland (including orchards) and irrigated pasture border most of the project alignment. Farmland adjacent to the project study area also includes hay fields and grasslands. Residences and buildings associated with farming are dispersed within the farmland as well.

The project study area also contains single-family residences and businesses typical of a rural area. The following description of land uses is from north to south within the project study area.

Bellevue Road from SR 59 to Santa Fe Drive: Single-family residences are located to the south and northeast of the intersection of Bellevue Road/SR 59. Agriculture fields are located northwest of the intersection. Agricultural uses include almond orchards and grazing land for raising livestock. Agricultural uses continue to surround the eastern portion of the AME as it travels along Bellevue Road to Franklin Road. Orchards are located to the north of Bellevue Road, while grazing land is located to the south.

The project study area splits into Alternatives 1A and **Modified Alternative** 1B west of Franklin Road. **The project area for Alternative 1A crosses a portion of a large dairy farm (Migliazzo & Sons) in this section of the study area. The study area for Modified** Alternative 1B arcs to the west**, (thereby avoiding the majority of this dairy operation)** before joining with **the same alignment as** Alternative 1A

[2] Castle Aviation Business Center Website, 2007. Available at: http://www.castleabc.com/ ; Castle Castle Airport Aviation and Development Center Website, 2007. Available at: http://www.castleairport.merced.ca.us/

[3] U.S. DOT FRA. Castle Air Force Base (Merced) Station Fact Sheet. http://www.cahighspeedrail.ca.gov/public_notice/pdf/Def_of_Alt/Station%20Options/Castle%20AFB%20Merced%20Fact%20Sheet_091106.pdf. Accessed 6/13/07 2007.

[4] U.S. DOT FRA. Castle Air Force Base (Merced) Station Fact Sheet. http://www.cahighspeedrail.ca.gov/public_notice/pdf/Def_of_Alt/Station%20Options/Castle%20AFB%20Merced%20Fact%20Sheet_091106.pdf. Accessed 6/13/07 2007.

at Belcher Ave. **A portion of the Foriano family dairy, located to the west of the Migliazzo & Sons dairy, would be crossed by the Modified Alternative 1B.**

The predominant land use continues to be agricultural with associated buildings and residences as the AME crosses Franklin Road, Fox Road and Santa Fe Drive. **Modified** Alternative 1B travels though a presently vacant, narrow triangular area that extends from and is part of the Castle Development Center Planning area.

Both Alternatives cross Santa Fe Drive as well as the parallel BNSF railroad tracks.

Santa Fe Drive to SR 99: Both alignments travel through agricultural land as they intersect Avenue Two and Avenue One. There are several single-family residential buildings surrounded by agricultural land along this section of the study area**. In this portion of the study area the Atwater Elementary School District (AESD) has purchased property for a future school site (referred to as the "Avenue One school site). The Avenue One school site is located on the north side of Avenue One, just east of Canal Creek (shown in Figure 4.14-1). Where both Alternatives intersect Avenue One, the AME alignment would be located within 500 feet to the east of the Avenue One school site. Project-related impacts to the Avenue One school site are discussed further in Section 4.14, Public Services.**

Where the study area crosses Ashby Road land uses include an RV Repair shop (3074 Ashby Road); a veterinary clinic and a kennel. Further east near the intersection of Ashby Road with Gurr Road, are several residential buildings and an RV Park and Service shop (4041 Ashby Road). Buhach Catholic Church and the Santa Fe Pacific Pipelines Refined Petroleum Products Handling Facility are located further west, in the area of the proposed interchange with SR 99. Single family homes are present at both the eastern and western ends of the study area as it extends along Ashby Road.

SR 99 to SR 140: Southern Pacific Railroad tracks are located between South Pacific Avenue and SR 99. Commercial land uses are located adjacent to the railroad tracks and SR 99. South of the SR 99 interchange and north of Elliot Avenue, agricultural (mostly corn) and residential uses are located within the project study area. Agricultural uses (**the Trindade dairy,** ~~cattle,~~ almonds, and field crops) with associated residences, are located along the project alignment as it continues south across Elliot Avenue and Landran Avenue. Agricultural land uses, including orchards, are located along Elliot Avenue. At the intersection of Landran Avenue and Gurr Road the alignment crosses Black Rascal Creek. Almond and walnut orchards are located along Gurr Road, north of the SR 140 intersection. A recently built Merced County fire station (299 South Gurr Road) is located at the intersection of Gurr Road and SR 140. Agricultural fields are located along Gurr Road south of SR 140.

4.2.2 REGULATORY SETTING

Relevant regulations related to agricultural land, land use designations, and zoning designations are described below.

CALIFORNIA DEPARTMENT OF CONSERVATION

The California Department of Conservation administers the FMMP, California's statewide agricultural land inventory. The FMMP is updated every two years and utilizes an automated map and database system to record changes in the use of agricultural lands. The FMMP identifies farmlands by category—Prime

Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. Individual jurisdictions may identify additional categories of farmland, but these are not indexed within the FMMP.

This document uses only FMMP-protected farmland categories for estimating potential impacts on farmland. The categories are based on U.S. Department of Agriculture (USDA) land inventory and monitoring criteria, as modified for California.

Prime Farmland

Prime Farmland is land with the best combination of physical and chemical features to sustain long-term production of agricultural crops. These lands have the soil quality, growing season, and moisture supply necessary to produce sustained high yields. Soil must meet the physical and chemical criteria determined by the USDA's Natural Resources Conservation Service (NCRS). Prime Farmland must have been used for production of irrigated crops at some time during the 4 years prior to the mapping date by the FMMP.

Farmland of Statewide Importance

Farmland of Statewide Importance is similar to Prime Farmland but with minor differences, such as greater slopes or a lesser ability of the soil to store moisture. Farmland of Statewide Importance must have been used for production of irrigated crops at some time during the four years prior to the mapping date.

Unique Farmland

Unique Farmland is used for the production of the state's leading agricultural crops but may contain lesser quality soils than Prime Farmland or Farmland of Statewide Importance. These lands are usually irrigated but may include non-irrigated orchards or vineyards found in some climatic zones in California. Unique Farmland must have been used for crops at some time during the four years prior to the mapping date.

Farmland of Local Importance

Farmland of Local Importance holds a different definition within each county. Merced County defines locally important farmland as either irrigated pastureland of areas used in dryland crop farming. Land with poor soil may also be considered of local importance if it is irrigated

WILLIAMSON ACT

The California Land Conservation Act (Government Code §51200 et seq.) of 1965, commonly known as the Williamson Act, provides a tax incentive for the voluntary enrollment of agricultural and open space lands in contracts between local government and landowners. The contract restricts the land to agricultural and open space uses and compatible uses defined in state law and local ordinances. An agricultural preserve, which is established by local government, defines the boundary of an area within which a city or county will enter into contracts with landowners. Local governments calculate the property tax assessment based on the actual use of the land instead of the potential land value assuming full development.

Williamson Act contracts are initially for 10 years and automatically renew each year after initiation, maintaining a constant, ten-year contract. The landowner or local government may file to initiate

nonrenewal, whereby the Contract would terminate 10 years after the filing of a notice of nonrenewal. Only a landowner can petition for a contract cancellation. Tentative contract cancellations can only be approved after a local government makes specific findings and determines the cancellation fee to be paid by the landowner.

GENERAL PLAN AND ZONING DESIGNATIONS

As previously discussed, the majority of the project study area is in Merced County. **Figure 4.2-1** shows Merced County General Plan land use designations in the project study area. **Figure 4.2-2** shows Merced County zoning designations. The Community of Franklin-Beachwood has zoning that differs from the zoning in the rest of the County. **Figure 4.2-3** shows general plan designations for the City of Atwater and the City of Merced. A small portion of the project study area lies within the City of Atwater. Zoning designations for this area are shown in **Figure 4.2-4**.

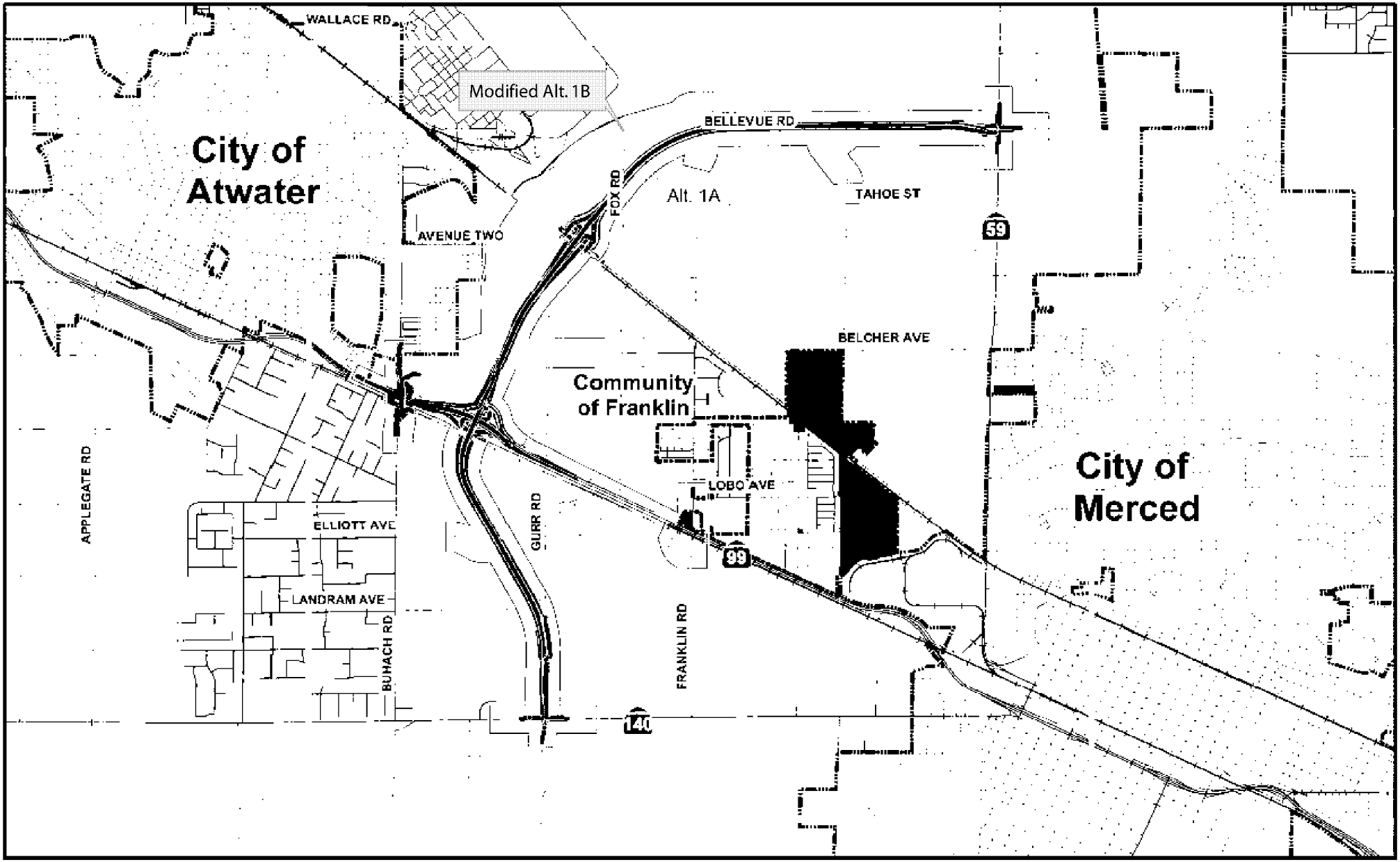
Although the project study area is not in the City of Merced, a portion of the project study area is in the City of Merced's SOI. In addition, a large portion of the project study area is in the City of Atwater's SOI. As shown in **Figure 4.2-4** ~~5~~, although these areas are not technically part of either City, they have been given City land use designations. Land use designations for unincorporated areas within an SOI act as a pre-designation in anticipation of eventual incorporation of these areas into the City.

Table 4.2-1 lists the various General Plan and Zoning designations in the project study area.

Table 4.2-1 General Plan and Zoning Designations in the Project Study Area

Planning Area	General Planning Designation	Zoning Designation
Merced County	Agricultural (A), Residential (R), Agricultural Residential (A-R), Low Density Residential (LD), General Commercial (GC) and Neighborhood Commercial (NC)	General Agriculture (A-1), Agriculture Residential (A-R), Single Family Residential (R-1), Two Family Residential (R-2), Neighborhood Commercial (C-1), General Commercial (C-2), and Special Planning Zone (SPZ)
Community of Franklin-Beachwood	N/A	Neighborhood Commercial (C-1), General Commercial (C-2), Single Family Residential (R-1), Single Family Residential with Higher Density (R-1-5000), and Agriculture Residential (A-R)
City of Atwater	Low Density Residential (LDR) and Medium Density Residential (MDR)	Planned Development (P-D) and Office Commercial (O-C)
City of Atwater SOI	Rural Residential Community (RRC), Very Low Density Residential (VLDR), Agriculture/Area of Interest (AG), Urban Reserve (UR), General Commercial (GC), Medium Density Residential (MDR), and Business Park (BP).	N/A
City of Merced SOI	Merced as Business Park (BP), Business Park Reserve (BP-R), and Commercial Office (CO)	N/A
Castle Air Base Reuse Plan	Aviation/Industrial and Commercial	Special Planning Zone (SPZ)

Source: Merced County General Plan, 1990; Merced County Zoning Ordinance; City of Atwater General Plan 2000; City of Atwater Zoning Ordinance; Franklin Beachwood Community Specific Plan 1983; Castle Air Base Reuse Plan, 1996.



Legend

- Atwater - Merced Expressway Alternative 1A
- Atwater - Merced Expressway Modified Alternative 1B
- Roads
- Highways
- Project Study Area
- Environmental Envelope

- A - Agricultural
- A-R - Agricultural Residential
- IND - Industrial
- REC - Recreational
- GC - General Commercial
- NC - Neighborhood Commercial
- INST - Institutional/Public Facilities
- RR - Residential Reserve
- VLD - Very Low Density Residential
- Castle SUDP
- LD - Low Density Residential
- MD - Medium Density Residential
- City Limits

4 000 2 000 0
Feet

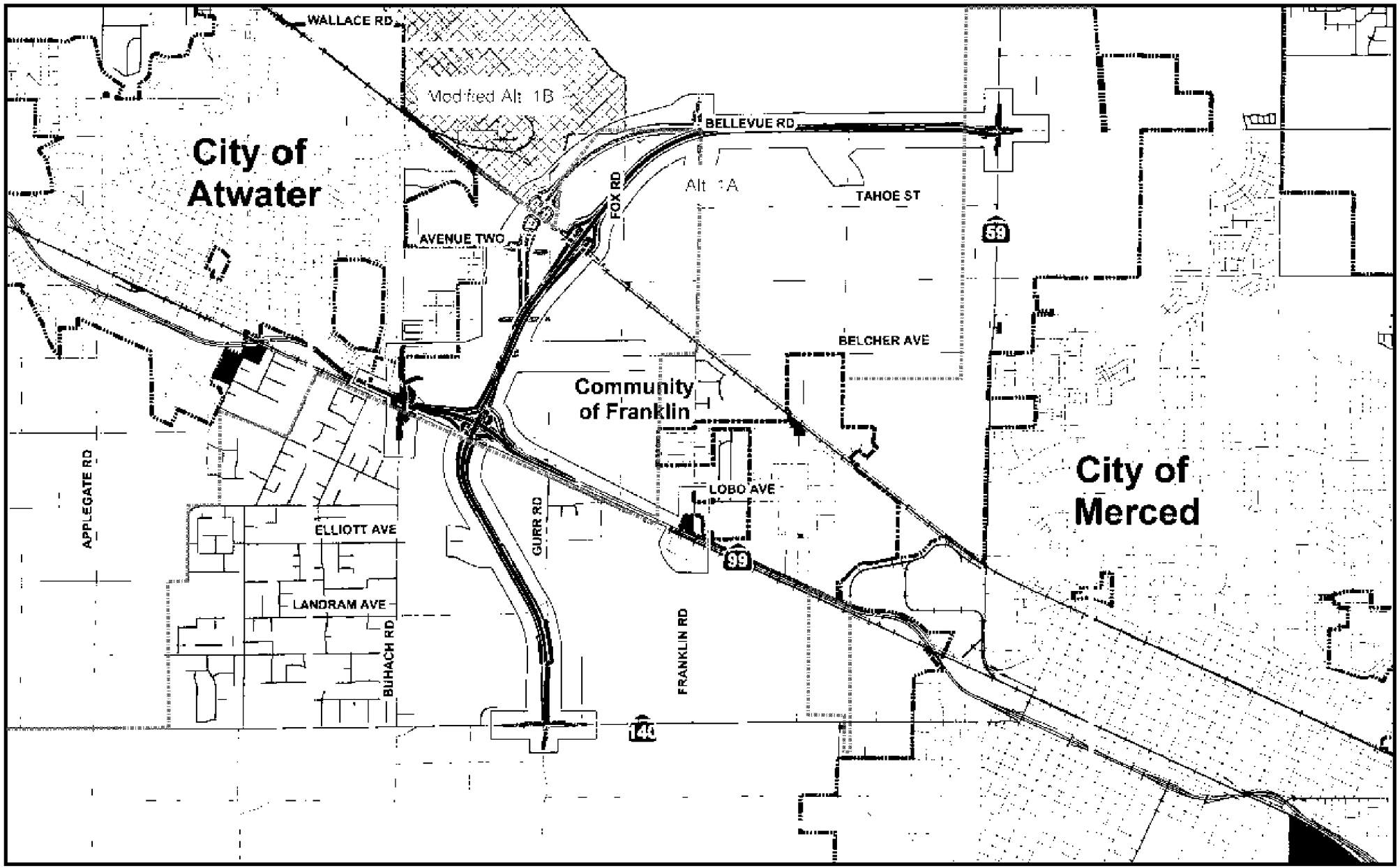
N

ATWATER-MERCED EXPRESSWAY

Merced County General Plan Designations

REVISED FIGURE 4.2-1

Source: Merced Data Special Services, Inc., October 2008.

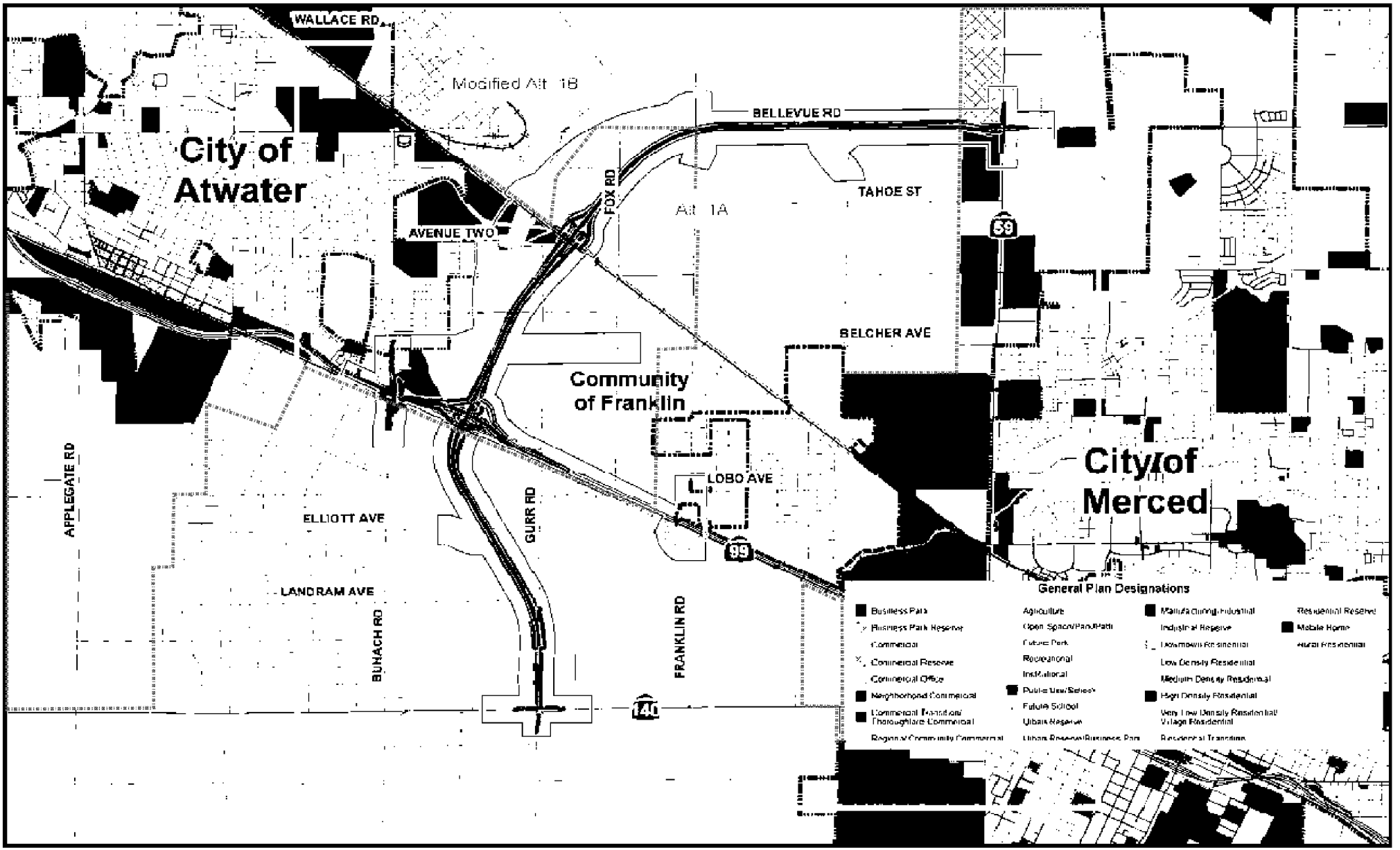


ATWATER-MERCED EXPRESSWAY

Merced County Zoning Designations

REVISED FIGURE 4.2-2

Source: Merced Data Special Services, Inc., October 2008.



Legend

- Atwater - Merced Expressway Alternative 1A
- Atwater - Merced Expressway Modified Alternative 1B
- Roads
- Highways
- Railroads
- Creeks
- Environmental Envelope
- Project Study Area

4,000 2,000 0 Feet

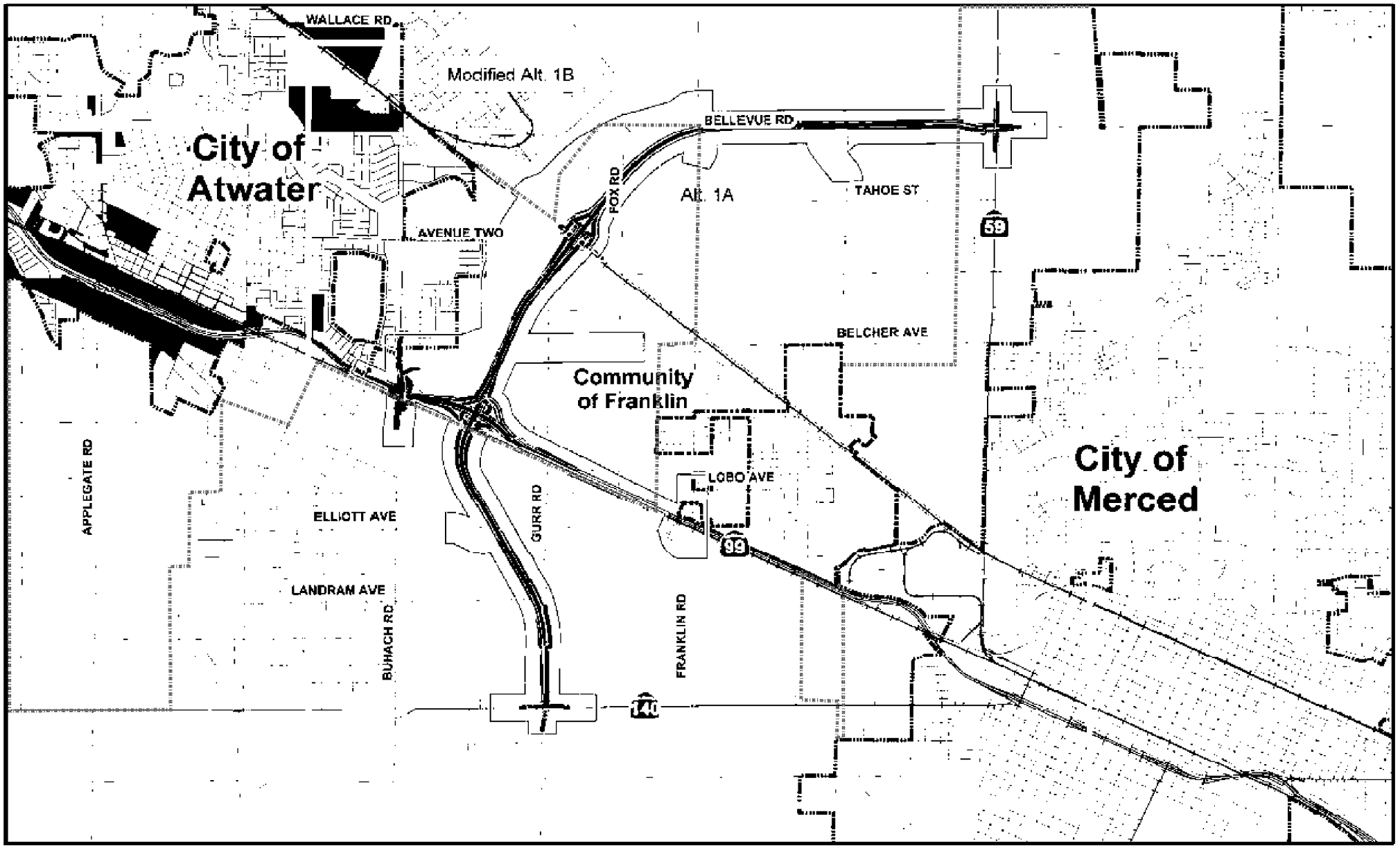
N

ATWATER-MERCED EXPRESSWAY

Cities of Atwater and Merced General Plan Designations

REVISED FIGURE 4.2-3

Source: Merced Data Special Services, Inc., October 2008.

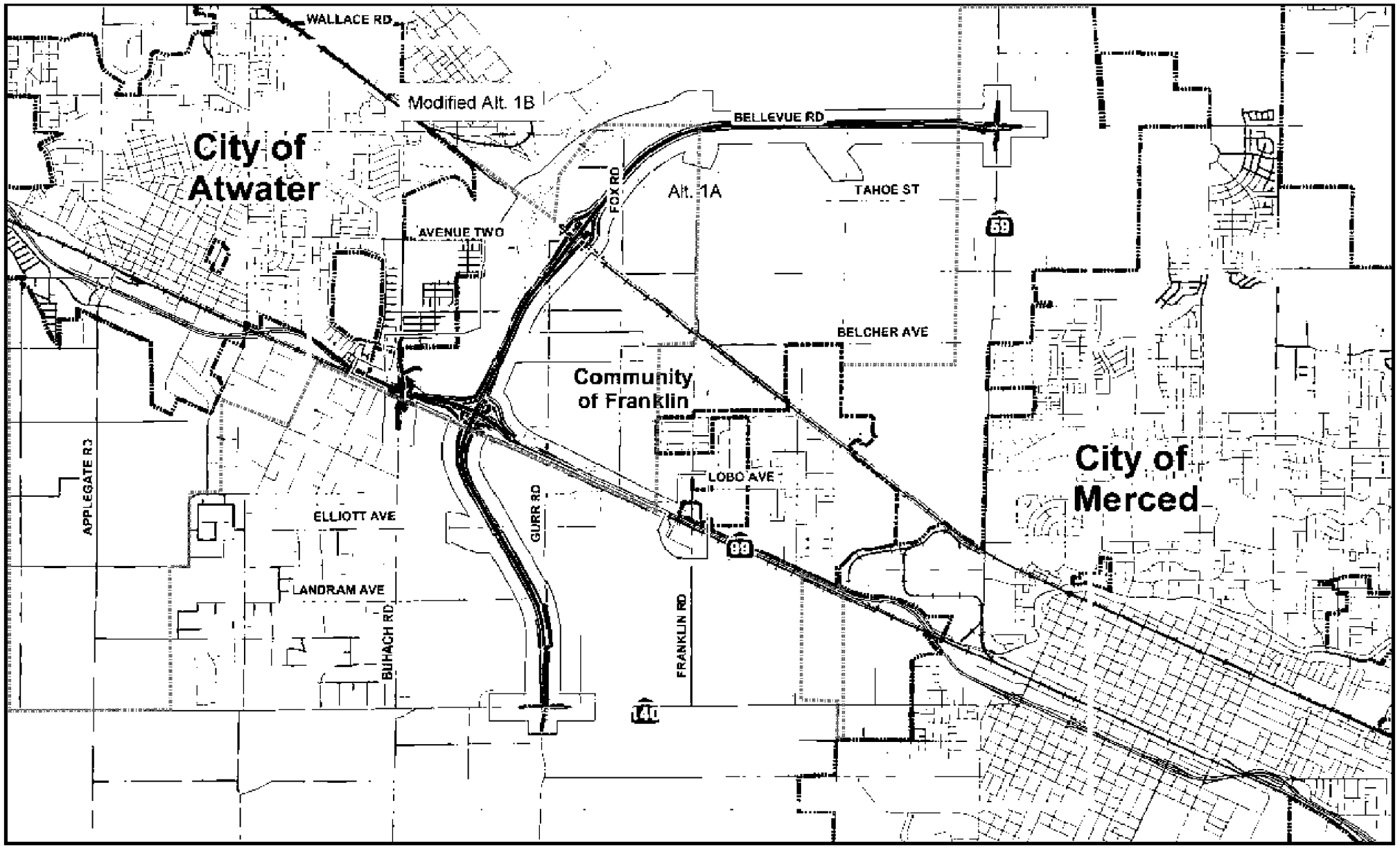


ATWATER-MERCED EXPRESSWAY

City of Atwater Zoning Designations

REVISED FIGURE 4.2-4

Source: Merced Data Special Services, Inc., October 2008.



ATWATER-MERCED EXPRESSWAY

FMMP Designations

REVISED FIGURE 4.2-5

Source: Merced Data Special Services, Inc., October 2008.

4.2.3 POLICY CONSISTENCY ANALYSIS

The establishment of a transportation corridor is not prohibited in any of the land use or zoning designations found in the project area. Therefore, the AME project would not be incompatible with any of the planning designations. There would be impacts to areas presently zoned for agriculture, since the project would convert agricultural areas into an expressway. These impacts are discussed and mitigated in **Section 4.2.4**.

4.2.4 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Based on the CEQA Guidelines (Appendix G), the project would have a significant impact related to land use and agriculture if it would:

a) Create a conflict with applicable land use designations or the zoning of an agency with jurisdiction over the project that would result in a physical change to the environment?

b) Physically divide an established community?

c) 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?

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

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use?

Recent cases decided by the California Court of Appeals have mandated that CEQA documents for larger development project also provide an analysis of a project's potential to cause "urban blight." Therefore, the project would have a significant impact if it would:

f) Result in urban decay and deterioration.

Less Than Significant Impacts

The AME project would not conflict with any applicable land use plan

As noted previously, Modified Alternative 1B is relatively distant from existing development at Castle, but crosses an area planned for commercial development, as set forth in the Castle Reuse Plan. The Castle Reuse Plan and Redevelopment Plan did not anticipate the potential development of an expressway within the plan area boundaries, however, the acreage that would be required for Modified Alternative 1B is expected to be minimal in comparison to the total area of future planned uses at Castle. Furthermore, the AME would greatly improve access to Castle, and to any futures commercial developments in this area. Due to the fact that the impact acreage would be minimal,

and access to the future commercial area improved, conflicts with the Castle Reuse Plan are considered less than significant.

The AME project would not physically divide an established community

As described previously, the AME project would pass through an unincorporated planning community in Merced County, the Community of Franklin Beachwood. This is the only established community in the project study area. The AME would pass adjacent to the Franklin-Beechwood planning area along an already established roadway (SR 99). The project would not divide the Community of Franklin Beachwood.

The AME project would not cause urban blight.

In general, urban decay is defined as the extended vacancy, deferred maintenance, and abandonment of property in an area, usually related to a downtown or commercial/retail center. The impetus of urban decay is usually attributable to individual property owner's financial decline, and overall declining economic conditions in an area.

This can occur when business is diverted away from a commercial center, for example by the construction of a nearby mall or large discount department store. In relation to highway projects, urban decay can occur when a bypass is built that diverts traffic away from a downtown area and toward existing or new highway-commercial businesses.

The AME project would not directly develop any commercial or retail development and the majority of land uses in the vicinity of the project area would remain zoned for agricultural uses with implementation of the project.

Urban blight could occur in the City of Merced if traffic shifted away from SR 59 and SR 140 since these roadways service businesses that are dependant on highway traffic as well as lead to the downtown area of the City of Merced. However, the traffic analysis shows that there will still be substantial traffic on SR 59 and SR 140 even with the AME project (see **Section 4.5, Traffic and Circulation**). As a result, no urban blight impact is anticipated to occur as a result of the AME project.

The project would not result in a direct physical impact to the environment related to the cancellation of a Williamson Act contract.

Table 4.2-2 shows the area of land under Williamson Act contract that would be impacted by the project.

Table 4.2-2 Area Under Williamson Act

Alignment Area	Williamson Act Land (acres)	Considered Prime? (Y/N)	Number of Parcels Under Contract
Direct Impact Area	12	Y	3
Project Study Area	67	Y	5

Source: Mark Thomas Company, 2007

Project implementation would require the cancellation of eight Williamson Act Contracts for 67 acres of farmland.

Information regarding Williamson Act Contracts in the project study area was obtained from a map created by the California Department of Conservation (CDC) titled *Merced County Williamson Act Lands 2006*.[5] South of SR 99, the project study area travels through five parcels under Williamson Act Contract (APN # 059-370-028, 005-200-027, 005-200-028, 059-360-032, and 057-390-034). No non-renewal requests had been submitted for any of the parcels as of January 1, 2006 (California Department of Conservation 2006).

The project would require the cancellation of the portion of the contract that would directly overlap with the project footprint. This cancellation of the contracts would not directly result in physical impacts to the environment. The impacts related to conversion of the agricultural land that is presently under these contracts is addressed below.

Conflict with the Merced County Zoning Ordinance for agricultural parcel size

The project could divide parcels presently designated as General Agriculture (A-1) in Merced County Zoning map so that the remaining areas are less than 20 acres in size. This would conflict with the minimum parcel size as determined by the Merced County Zoning Ordinance.

As discussed previously, the land use and zoning designations in the project study area do not prohibit roadway construction. However, the project would pass through 361 acres of land designated as Agriculture in the County General Plan under Alternative 1A and ~~364~~ **370** acres under **Modified** Alternative 1B. In these areas the project would cross through and physically divide portions of parcels with a zoning designation of General Agriculture (A-1). According to the County's Zoning Ordinance the minimum parcel size for land zoned A-1 is 20 acres. Areas smaller than 20 acres are considered to have reduced agricultural productivity, and are not considered of adequate size for the A-1 designation.

If the project results in right of way acquisitions which have the effect of reducing the size of a parcel with the A-1 zoning designation to less than the 20 acres, these parcels could technically conflict with the minimum parcel size requirements of the A-1 zone. However, this action would not create new parcels and the A-1 zoning for these parcels would not change. Therefore, there would be no change to the land use restrictions on the parcels, and no rezoning would occur as part of this project. There would be no change in the development on the parcel and no physical impact to the environment.

~~If the project would divide a parcel with the A-1 zoning designation so that the area on either side of the roadway is less than 20 acres, it would conflict with the Merced County Zoning Ordinance. Areas less than 20 acres in size would need to be rezoned, most likely as Agriculture Residential, which does not prohibit agricultural production. This conflict with the zoning ordinance would not be considered a physical impact on the environment and no conflict would exist once parcels were rezoned. Therefore, this conflict would be considered a less-than-significant impact.~~

The AME project would convert Prime and Important Farmland to non-Agricultural uses

As shown in **Figure 4.2-6**, the project study area includes land that has been designated with FMMP agricultural resource categories. For the purposes of this analysis, lands that are designated as Farmland of

[5] ftp://ftp.consrv.ca.gov/pub/dlrp/WA/Map%20and%20PDF/Merced/merced_wa_06_07.pdf

Local Importance, Farmland of Statewide Importance, or Unique Farmland have been grouped as Important Farmland when calculating impacts. Project effects to Prime Farmland are discussed separately due to the high agricultural value of land within this FMMP category.

The project would result in farmland within the project ROW being permanently converted to non-agricultural uses. As shown in **Table 4.2-3**, Alternative 1A would convert ~~130~~ **139** acres of Prime Farmland and 169 acres of Important Farmland to non-agricultural uses. **Modified** Alternative 1B would result in the direct conversion of 133 acres of Prime Farmland and ~~170~~ **171** acres of Important Farmland to non-agricultural uses. This would not be considered a significant conversion of farmland, as the approximately 300 acres of lost acreage represents roughly 0.05% of the 589,324[6] Prime and Important Farmland acres in Merced County.

Table 4.2-3 Direct Impact to Prime and Important Farmland

Type of Farmland	Alternative 1A (Acres)	Modified Alternative 1B (Acres)
Prime Farmland	139	~~134~~ **133**
Important Farmland[a]	169	~~172~~ **171**
Total	**308**	~~306~~ **304**

[a] Includes farmland classified as Farmland of Local Importance, Farmland of Statewide Importance, or Unique Farmland by the FMMP
Source: Mark Thomas Company, 2007.

Although the conversion of farmland is considered a less-than-significant impact, MCAG shall mitigate for the loss of agricultural lands in conformance with any countywide program adopted by Merced County prior to the commencement of construction. In the event no such program is in place prior to commencement of construction, the farmland impacts of the AME project should be mitigated by purchasing conservation easements at a 1:1 ratio for impacted farmlands. Under the 1:1 ratio, for every acre of farmland converted by the AME project and equivalent amount of farmland within the County would be placed under conservation easement(s). These conservation easements would ensure that the farmland would be protected in perpetuity for future development.

The AME project would impact farmlands associated with several dairy operations located within the study area. These farmlands are used for growing feed for the dairy cattle and have been included in the acreage calculations shown in Table 4.2-3. Dairy operations are considered businesses and as such impacts to dairies within the study area are discussed in Chapter 4.3 under business relocations.

Construction of the AME would result in temporary impacts to Prime and Important Farmland

Temporary impacts to agriculture would occur during construction of the AME project and would include effects such as removal or damage of crops or pasture to allow for the placement of construction staging

[6] California Department of Conservation Farmland Mapping and Monitoring Program. 2004. Merced County 2002-2004 Land Use Conversion Table A-15. <http://redirect.conservation.ca.gov/DLRP/fmmp/pubs/2002-2004/conversion_tables/mercon04.xls> Last accessed: November 29, 2007.

areas and construction access roadways, or damage of crops or pasture from excessive dust generated during grading and construction activities. These impacts would only occur during construction phases and would be temporary in nature.

After construction has been completed and the expressway is in operation, agriculture could continue up to the edge of the project right-of-way (ROW), thought the crops nearest the roadway could experience minor indirect impacts from motor vehicle emissions and from particulates and trash generated by the vehicles traveling on the expressway. It is difficult to determine the magnitude of these temporary and indirect impacts to agriculture, but given that existing agricultural uses abut roadways throughout the project area and show little signs of impaired productivity, this potential impact is not anticipated to be significant.

4.3 POPULATION, HOUSING AND EMPLOYMENT

This section evaluates the effects of the AME project on existing and forecasted population, housing, and employment in the project study area. This includes current and projected population, housing, and employment in the City of Atwater, the City of Merced, and Merced County. This section is based on information from the 1990 and 2000 U.S. Census, estimates from the Merced County Association of Governments (MCAG) 2007 Regional Transportation Plan, and data provided by the California Department of Finance (CDOF).

4.3.1 EXISTING CONDITIONS

Methodology

1990 AND 2000 UNITED STATES CENSUS

The United States Census Bureau (Census Bureau) conducts a census of the United States every ten years. The latest decennial census was conducted in 2000. The primary purpose of the decennial census is to identify shifts in population that determine both the number of seats in the House of Representatives (currently 435) and the percentage of seats to be allocated among the 50 States. In addition to population data, the Census Bureau also collects demographic information, including data on race, age, sex, household size and type, and employment. Information from the 1990 and 2000 U.S. Census is used to characterize historical trends in population, housing, and employment throughout the project study area.

MERCED COUNTY ASSOCIATION OF GOVERNMENTS

The AME project is located within the MCAG planning area. MCAG represents municipal governments throughout Merced County. MCAG forecasts population, housing, and employment growth for the cities under its jurisdiction. Data on population, housing, and employment within Merced County contained in the MCAG 2007 Regional Transportation Plan and in the MCAG Data Summary Book is included in this section. This information is used to characterize projected future population and housing throughout the project study area. This information also describes the principal sources and distribution of employment in Merced County.

CALIFORNIA DEPARTMENT OF FINANCE

The California Department of Finance (CDOF) provides population estimates for cities and counties throughout California. CDOF data includes estimates on total population, housing units, and household size. County and city population counts are each estimated independently using change models benchmarked to the year 2000 that corrects for omissions and errors in the decennial census. For counties, estimates are calculated by averaging three separately estimated sets of proportions; the State Driver License Address Change (DLAC), ratio-correlation, and income tax return methods. For cities, The Housing Unit (HU) Method is used to estimate total and occupied housing units, household size, household population, and group quarters population. HUs are estimated by adding new construction and annexations, and subtracting

demolitions and conversions from the year 2000 estimate or a prior year's estimate. The HU changes are supplied by local jurisdictions, the U.S. Census Bureau, and Military Installations. Data from the CDOF is used to characterize existing population and housing in Merced County, the City of Atwater, and the City of Merced.

Population

Table 4.3-1 shows population characteristics for the City of Atwater, the City of Merced, and Merced County from the 1990 and 2000 U.S. Census and CDOF estimates of the 2007 population based on that information.

Table 4.3-1 AME Project Study Area Population, 1990,2000, and 2007

Year	Merced County Population[a]	City of Atwater Population	City of Merced Population
1990	178,403	22,282	56,216
2000	210,554	23,113	63,893
2007	251,510	27,618	79,715

[a] The totals include both incorporated and unincorporated areas of Merced County
Source: U.S. Census Bureau, 1990, 2000; California Department of Finance, 2007.

Table 4.3-2 shows the projected growth in population for all three jurisdictions between 2010 and 2030.

Table 4.3-2 AME Project Study Area Population, Future Projections - 2010 to 2030

Year	Merced County Population[a]	City of Atwater Population	City of Merced Population
2010	276,200	30,800	81,900
2015	307,300	33,700	89,400
2020	340,800	36,500	97,700
2025	377,400	39,500	106,800
2030	417,200	42,700	116,800

[a] The totals include both incorporated and unincorporated areas of Merced County
Source: MCAG 2007 Regional Transportation Plan.

The following sections describe historical trends in population between 1990 and 2007 for Merced County, the City of Atwater, and the City of Merced. The forecasted future population between 2010 and 2030 is also discussed.

MERCED COUNTY

The population of Merced County grew by 18 percent between 1990 and 2000, adding 32,151 people. Between 2000 and 2007, the population of the County grew by an estimated 40,956 people, or 19 percent. This rate of growth is slightly higher but consistent with the rate of growth between 1990 and 2000. The State of California experienced an 11 percent increase in population during the same period, nearly half that of the County. Based on MCAG projections, during the 20-year period between 2010 and 2030, the population of Merced County is anticipated to grow by 58 percent, adding an additional 175,700 people.

The 2007 median population of California counties is 180,838 people. Of California's 57 counties, Merced County ranks 25th in terms of population.

CITY OF ATWATER

The population of the City of Atwater grew by four percent between 1990 and 2000, adding 831 people. However, between 2000 and 2007 the estimated population grew by 4,505 people. This represents a 19 percent increase in the population of the City, indicating that in the seven years since the last decennial census, the City has experienced substantial growth. This rate of growth is consistent with the rate of growth experienced by Merced County as a whole during the same time period. Based on MCAG projections, the population of the City is expected to continue to grow increasing by 39 percent between 2010 and 2030. This represents an increase in the population by 11,900 people during this 20-year period.

CITY OF MERCED

The population of the City of Merced grew by 14 percent between 1990 and 2000, adding 7,677 people to the population. However, between 2000 and 2007, the estimated population of the City grew by 25 percent, adding 15,822 people. This represents a substantial increase in the size of the population during the seven years since the last decennial census. This rate of growth is higher than that experienced by Merced County as a whole. However, as the City of Merced is the largest city in Merced County, composing nearly a third of the County's population and serving as a focal point of much of the County's sources of employment, a higher proportion of population growth in this area would be anticipated.

Based on MCAG projections, the population of the City of Merced is expected to continue to grow into the future. The population of the City is expected to grow by 63 percent between 2010 and 2030, adding an additional 34,900 people.

Housing

Table 4.3-3 shows housing and household characteristics for Merced County, the City of Atwater, and the City of Merced. As for population, data from both the 1990 and 2000 census is presented to show growth in housing during the interim 10-year period. Data from the CDOF provides the estimated number of housing units in 2007 for all three jurisdictions.

Table 4.3-3 Housing Growth 1990-2000

	Merced County			City of Atwater			City of Merced		
	1990	2000	2007	1990	2000	2007	1990	2000	2007
Single-Family Units	42,311	50,545	64,126	5,009	5,766	7,113	11,552	13,407	18,700
Multi-Family Units	11,390	12,594	13,602	1,746	1,818	1,822	6,746	7,429	8,244
Other Units	4,709	5,234	5,674	667	505	507	667	708	708
Total Housing Units	**58,410**	**68,373**	**83,402**	**7,422**	**8,089**	**9,442**	**18,965**	**21,544**	**27,652**

Source: U.S. Census Bureau, 1990, 2000; California Department of Finance, 2007.

Table 4.3-4 shows forecasted single- and multi-family housing unit growth rates for Merced County between 2010 and 2030.

Table 4.3-4 Merced County Housing Unit Growth Projections

Housing	2010	2020	2030
Single-Family Units	64,871	83,159	105,980
Multi-Family Units	19,974	22,451	25,475
Total Housing Units	**84,845**	**105,610**	**131,455**

Source: MCAG 2007 Regional Transportation Plan, 2007.

The following sections discuss changes in housing between 1990 and 2007 for Merced County, the City of Atwater, and the City of Merced. The forecasted future population between 2010 and 2030 is also discussed. Projections in the growth in the number of housing units between 2010 and 2030 for the County as a whole are also discussed.

MERCED COUNTY

Merced County had 52,469 housing units in 1990. In 2000, the number of housing units had increased by 11,346 units to a total of 63,815 housing units. Single-family homes increased by 8,234 units, representing a 19 percent increase over 1990 levels. Similarly, both multi-family and other housing units increased by 11 percent by 2000, representing 1,204 housing units and 525 housing units, respectively. Based on CDOF estimates, housing in the County increased to 83,402 units in 2007. This represents an increase of 15,029 units, or a 22 percent increase in the number of housing units in the County. During the same period, the State of California experienced an estimated increase in the number of housing units of nine percent, substantially lower than that experienced by the County. MCAG projections anticipate that single-family housing units will increase by 63 percent between 2010 and 2030, gaining 41,109 units during that 20-year period. Similarly, multi-family units are projected to increase by 43 percent between 2010 and 2030, representing an increase of 5,504 units.

Based on data provided by the 2000 U.S. Census, in 2000 the average household in Merced County contained 3.25 people. CDOF estimates that this number declined slightly by 2007, with the average household containing 3.165 people.

CITY OF ATWATER

In 1990, the City of Atwater had 7,422 housing units, including 5,009 single-family units, 1,746 multi-family units, and 667 other housing units (i.e., mobile homes, houseboats, etc.) By 2000, the number of housing units had expanded with increases in both single-family and multi-family units. Single-family homes increased by 757 units, or a 15 percent increase over 1990 levels. Similarly, multi-family housing units increased by 72 units, or a four percent increase over 1990 levels. However, housing designated as other housing units experienced a substantial drop in numbers between 1990 and 2000. By 2000, the number of these housing units had been reduced by 162 units from 667 units to 505 units. This represents a 24 percent decrease in the number of other housing units in the City of Atwater. Based on CDOF estimates, housing in the City increased to 9,942 units in 2007. This represents an increase of 2,829 units, or a 23 percent increase between in the number of housing units in the City. While slightly higher, this percentage of increase in housing units is consistent with the percentage increase experienced by Merced County as a whole during the same time period.

Based on data provided by the 2000 U.S. Census, in 2000 the average household in the City of Atwater contains 3.13 people. CDOF estimates indicate that this number declined by 2007, with the average household containing 3.062 people.

CITY OF MERCED

The City of Merced had 17,655 housing units in 1990, including 11,552 single-family homes, 6,746 multi-family homes, and 667 other housing units. By 2000, the number of total housing units was 20,480 units, an increase of 2,825 total housing units over 1990 levels. Increases were most substantial among single-family and multi-family housing units. In 2000, single-family housing units had increased by 16 percent, representing a gain of 1,855 units over 1990 levels. Similarly, in 2000 multi-family units had increased by 10 percent, or 683 units over 1990 levels. The number of other housing units also increased, gaining 41 units in 2000, or a six percent increase over 1990 levels. Based on CDOF estimates, housing in the City increased to 27, 652 units in 2007. This represents an increase of 7,172 units, or a 28 percent increase in the number of housing units in the City. This represents a slightly higher increase in the number of housing units compared to the County as a whole.

Based on data provided by the 2000 U.S. Census, in 2000 the average household in the City of Merced contains 3.06 people. CDOF estimates indicate that this number declined slightly by 2007, with the average household containing 2.985 people.

Table 4.3-5 shows the 2000 census housing and population data for all census tract block groups that are included or partially included in the project study area. Portions of the block groups in the project study area are located in the County and other portions enter the municipal boundaries of the cities of Merced and Atwater. **Figure 4.3-1** shows the approximated boundaries of each block group in the project study area.

Employment

The traditional primary source of employment within Merced County was agriculture. However, while still a major source of employment, agriculture has been overtaken by both the service industry and government as the principle sources of employment in the County. **Table 4.3-6** shows the major industries in Merced

County as described by MCAG, the percentage of firms represented within each industry, the number of people employed within each industry, and the total percentage of people employed by each industry.

Table 4.3-5 Population and Housing Units by Census Tract Block Group

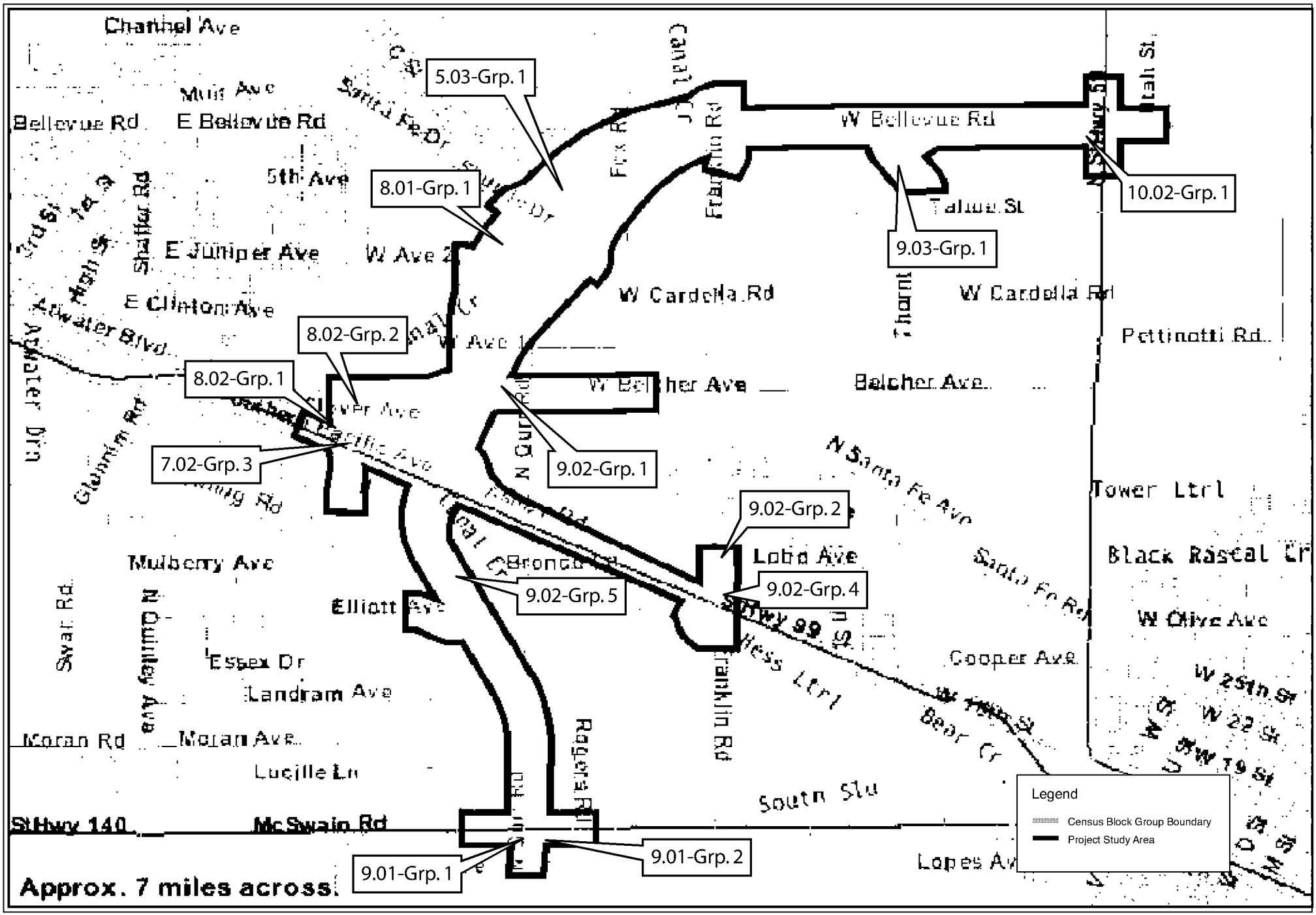
Census Tract Number–Block Group Number	Population	Housing Units
5.03 - 1	552	170
7.02 - 3	1,276	425
8.01 - 1	1,117	837
8.02 - 1	1,421	558
8.02 - 2	1,342	437
9.01 - 1	1,475	499
9.01 - 2	994	319
9.02 - 1	958	301
9.02 - 2	1,950	549
9.02 - 4	1,039	347
9.02 - 5	626	225
9.03 - 1	1,126	394
10.02 - 1	1,117	419
Total	**14,993**	**5,480**

Source: U.S Census Bureau, Census 2000.

Table 4.3-6 Merced County Industry Distribution and Employment - 2007

Industry	Number of Firms	Percent of All Firms in County	Number Employed	Percent of Total Employed
Services	1,779	39%	15,000	24%
Government	-	-	12,200	19%
Agriculture	1,124	25%	11,600	18%
Manufacturing	126	3%	10,400	16%
Retail	725	16%	7,000	11%
Mining, Construction	283	6%	2,100	3%
Finance, real estate	260	5%	1,700	3%
Transportation	164	4%	1,700	3%
Wholesale	139	3%	1,400	2%
Total	**4,580**	**-**	**63,100**	**100%**

Source: MCAG 2007 Regional Transportation Plan.



ATWATER-MERCED EXPRESSWAY

Population and Housing Units by Census Tract Block Group

FIGURE 4.3-1

Source: CirclePoint, February 2008.

4.3.2 REGULATORY SETTING

State Regulations

CALIFORNIA RELOCATION ASSISTANCE ACT

The California Relocation Assistance Act, Government Code § 7260, et seq., establishes uniform policies to provide for the fair and equitable treatment of people displaced from their homes or businesses as a direct result of state and/or local government projects or programs. The Act requires that comparable replacement housing be made available to displaced persons within a reasonable period of time prior to the displacement. Displaced persons or businesses are assured payment for their acquired property at fair market value. Relocation assistance in the form of advisory assistance and financial benefits would be provided at the local level.

LOCAL REGULATIONS

Population and housing in the City of Atwater, the City of Merced, and unincorporated Merced County is guided by their respective General Plans. The General Plans contains no population, housing, or employment goals, objectives, policies or programs that would be applicable to this project.

Policy Consistency Analysis

The California Relocation Assistance Act is applicable to persons and businesses displaced as a result of implementation of projects or programs. Were implementation of the project to result in displacement of persons or business, the project sponsor would provide full compliance with the law.

4.3.3 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. The AME project would have a significant population and housing impact if it would:

a) Induce substantial population growth in the area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure);

b) Displace substantial numbers of existing houses, necessitating the construction of replacement housing elsewhere; or

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

2030 AME Conditions

The following sections describe impacts associated with construction and operation of the AME under 2030 project conditions.

Less Than Significant Impacts

The AME Project would not directly or indirectly induce substantial population growth.

The AME project is the construction of a new roadway through portions of unincorporated Merced County and the City of Atwater that are primarily used for agricultural purposes. Development of new housing or businesses is not included in the AME project. Therefore, no direct inducement of population growth in the project study area is anticipated. Indirect population growth, on the other hand, could result as the AME project may open up areas of future potential development that previously had limited access or was inaccessible. As discussed above, population and housing data from the 1990 and 2000 Census and estimates provided by the CDOF indicate that the County is already experiencing substantial amounts of growth and has been for at least the last 17 years. Local agencies have planned for this growth and the AME was included in local plans and as part of the MCAG 2007 Regional Transportation Plan. The City of Atwater and Merced General Plans have planned for future roadways in the project study area. The AME is a part of the regional growth envisioned in these General Plans and is consistent with long term planning in the region. Therefore, any indirect growth associated with the AME project has already been anticipated in regional projections.

Furthermore, the majority of the AME project, including Alternative 1A **and Modified Alternative 1B**, runs through portions of Merced County zoned A1, General Agricultural. While residential uses are allowed on lands zoned A1 under the Merced County Zoning Code, parcel size is limited to a minimum of 20 acres. Agricultural zoning and parcel size restrictions would not facilitate the development of uses such as residential housing or commercial and/or industrial uses which would generate increases in population. In order to develop most of these areas, Merced County would need to rezone lands to allow for uses other than agriculture.

Finally, a portion of **Modified** Alternative 1B runs through the Castle Air Force Base Reuse Plan area, in a location planned for commercial development. Because of the proximity of the Airport to the AME project, residential land uses would generally not be allowed in the area. Therefore, based on existing zoning, parcel size requirements, and proximity to the Castle Air Force Base, impacts associated with the inducement of substantial population growth are considered less than significant.

Implementation of the AME project would not displace substantial numbers of existing houses or ~~people~~ businesses, necessitating the construction of replacement housing or businesses elsewhere.

Implementation of the AME, including either Alternative 1A or **Modified** Alternative 1B, would result in displacement of existing homes and businesses to make way for the roadway. **Table 4.3-7** identifies each of the displaced properties by alternative with parcel number, existing use, and type of take**.** ~~and~~ **Table 4.3-8** shows displaced residences including street address. **Table 4.3-9 identifies affected businesses, including the type of business and type of property take**.

Table 4.3-7 AME Project Displaced Properties

Parcel Number (APN)	Existing Use	Type of Take
059-370-032	Agriculture/Row Crops	Residence[a]
059-380-006	Agriculture/Row Crops	Residence[a]
005-190-012	Commercial	RV Sales ~~and Repair~~
005-120-011	Commercial	RV Repair
005-120-012	Commercial	Veterinarian Office and Kennels
005-120-013	Commercial	Building Contractors office and yard
005-120-015	Commercial	Disposal System Yard
005-120-021	Commercial	Residence
057-010-042	Ranchette	Residence
057-010-043	Ranchette	Residence
057-010-011	Ranchette	Residence
005-080-009	**Agriculture/Grazing**	**Building and Barn**
005-190-018	Residential	Residence
005-190-021	Residential	Residence
005-190-022	Residential	Residence
005-190-015	Residential	Residence
005-190-014	Residential	Residence
005-190-013	Residential	Residence
005-190-017	**Residential**	**Residence**
207-170-011	**Vineyard**	**Vineyard**
057-020-001	**Residential**	**Residence**
Additional Displaced Properties Under Alternative 1A		
005-110-016	Agriculture/Grazing	**Full Take** ~~Partial Take - Driveway~~
005-090-016	Agriculture/Grazing	Residence
005-090-015	**Agriculture/Dairy**	**Dairy Land**
005-090-013	**Agriculture/Dairy**	**Dairy Land**
005-090-014	**Agriculture/Dairy**	**Dairy Land**
005-100-019	Agriculture/Row Crops	Residence
~~005-120-013~~	~~Commercial~~	~~Business~~
005-100-021	Ranchette	Residence
~~052-220-016~~	~~Ranchette~~	~~Farm Residence~~
~~005-120-021~~	~~Residential~~	~~Residence~~
~~005-190-017~~	~~Residential~~	~~Residence~~
Additional Displaced Properties Under Modified Alternative 1B		
005-070-016	Ranchette	Residence
005-090-006	Ranchette	Residence
005-090-002	Agriculture/Row Crops/**Dairy**	Residence
005-100-001	Agriculture/Row Crops	Residence
052-220-016	**Ranchette**	**Residence**

Parcel Number (APN)	Existing Use	Type of Take
005-080-009	**Agriculture/Row Crops**	**Residence**
005-080-005	**Agriculture/Row Crops**	**Residence**
005-110-015	**Agriculture/Grazing**	**Residence**
~~005-110-014~~	~~Agriculture/Row Crops~~	~~Residence~~
~~005-110-019~~	~~Ranchette~~	~~Residence~~
~~005-120-021~~	~~Residential~~	~~Residence~~
~~005-080-010~~	~~Ranchette~~	~~Partial Take - Driveway~~

[a] Two residences to be taken
Source: Mark Thomas & Co.; ARWS 2007.

Table 4.3-8 AME Project Displaced Residences

Parcel Number (APN)	Physical Address
059-370-032	Gurr Road / Landram Avenue (No site address) [a]
059-380-006	Gurr Road (no site address) [a]
057-010-042	1013 Bellevue Road
057-010-043	1059 Bellevue Road
057-010-011	1109 W Bellevue Road
005-120-021	4231 W Ashby Road
005-190-017	**4137 W Ashby Road**
057-020-001	**943 W. Bellevue Road**
005-190-015	**4105 W Ashby Road**
005-190-014	**4681 Ashby Road**
005-190-013	**Ashby Road (no site address)**
005-190-018	**4165 W Ashby Road**
005-190-021	**4129 W Ashby Road**
005-190-022	**4117 W Ashby Road**
Additional Displaced Properties Under Alternative 1A	
005-090-016	4520 N Fox Road
005-100-019	4284 Santa Fe Drive
005-100-021	3345 Avenue 2
~~052-220-016~~	~~5019 Franklin Road~~
~~005-190-018~~	~~4165 W Ashby Road~~
~~005-190-017~~	~~4137 W Ashby Road~~
~~005-190-021~~	~~4129 W Ashby Road~~
~~005-190-022~~	~~4117 W Ashby Road~~
~~005-190-015~~	~~4105 W Ashby Road~~
005-190-014	4681 Ashby Road
005-190-013	Ashby Road (no site address)

Parcel Number (APN)	Physical Address
Additional Displaced Properties Under Modified Alternative 1B	
~~052-480-007~~	~~Franklin Road~~
005-090-006	4986 N Fox Road
005-090-002	3843 Bradshaw Road
005-100-001	4450 N Santa Fe Drive
005-070-016	4445 Santa Fe Drive
005-080-005	**Avenue Two**
005-080-009	**Avenue Two**
005-110-015	**Avenue One**
052-220-016	**5019 Franklin Road**
~~005-110-014~~	~~Franklin Road~~
~~005-110-019~~	~~4331 W Avenue 1~~
~~005-190-018~~	~~4165 Ashby Road~~

[a] Two residences to be taken
Source: Mark Thomas & Co.; ARWS, 2007.

The specific number of homes and businesses affected by Alternative 1A or Modified Alternative 1B may decrease when more detailed engineering studies are conducted during the final design process of the AME project, which would occur after selection of a preferred alternative and project approval. However, any changes in the number of homes and businesses displaced by either Alternative will not be more than what is represented in the tables above. As a result, the preliminary estimates of home and business displacement for each alternative is considered to be conservative.

RESIDENTIAL RELOCATIONS

Based on data provided by the CDOF, the average household in Merced County is comprised of 3.165 people. Accordingly, **based on the preliminary calculations of relocation,** implementation of Alternative 1A would result in the displacement of 19 homes and approximately 60 people and implementation of **Modified** Alternative 1B would result in the displacement of ~~16~~ **21** homes and approximately ~~51~~ **63**people. **Displacement of homes refers to the displacement and/or demolition of physical structures on a property. Other properties could be reduced in size through partial takes of parcels to accommodate the expressway.**

While construction of the AME would result in the displacement of both homes and ~~people~~ **businesses**, the number of homes and ~~people~~ **businesses** are not substantial enough to warrant construction of replacement housing elsewhere. According to the Housing Element of the Merced County General Plan, the vacancy rates amid existing housing stocks are used to indicate the availability of adequate housing to meet demand and need. In general, a five percent vacancy rate for rental housing and a two percent vacancy rate for housing for sale are the thresholds upon which determination of adequate housing supplies are based. The CDOF reports that as of January ~~2006~~ **2008**, the vacancy rate in Merced County was 6.~~76~~percent, representing approximately 5,500 housing units. Therefore, available housing stock in Merced County should provide more than adequate replacement housing for those displaced as a result of the AME project.

BUSINESS RELOCATIONS

Implementation of the AME would result in the displacement of existing businesses, as shown in Table 4.3-9. Implementation of Alternative 1A would result in the **total** displacement of **nine** ~~five~~ businesses and implementation of **Modified** Alternative 1B would result in the **total** displacement of **six** ~~nine~~ businesses. **In addition to the displaced businesses, implementation of Alternative 1A would take land and remove structures from two existing business properties, while Modified Alternative 1B would take land and remove structures from three businesses. Other commercial properties could be reduced in size through partial takes of parcels to accommodate the expressway right of way.**

Table 4.3-9 AME Project Affected Businesses

Parcel Number (APN)	Type of Business	Type of Affect
005-120-015	Disposal System Yard	Relocation
005-120-011	RV Repair	Relocation [a]
005-120-012	Veterinarian	Relocation [a]
005-190-012	RV Sales	Relocation
005-120-014	Unknown	Partial Affect
207-170-011	Vineyard	Relocation
005-120-013	Building Contractors Office and Yard	Relocation
207-160-006	Dairy	Partial Affect
Affected Businesses Under Alternative 1A		
005-090-015	Dairy	Relocation
005-090-014	Dairy	Relocation
005-090-013	Dairy	Relocation
Affected Businesses Under Modified Alternative 1B		
005-090-002	Dairy	Partial Affect

[a] Two buildings to be demolished
Source: Mark Thomas & Co.; ARWS, 2007.

The number of businesses affected by the implementation of Alternative 1A or Modified Alternative 1B would be small in relation to the total number of businesses within the Merced County region, as previously identified in Table 4.3-6.

Both Alternative 1A and Modified Alternative 1B would impact lands that are part of operating dairies. Dairy operations are quite complex consisting of lands for cattle grazing, feed production and waste management along with facilities for milking and milk processing. Dairies also require construction and/or operating permits from federal, state and local agencies which include, but are not necessarily limited to, Merced County, California Regional Water Quality Control Board and the San Joaquin Valley Unified Air Pollution Control District. As a result, impacts to one element of a dairy's operation could have significant impacts on other aspects of the operation and potentially affect existing permits and the economic viability of the dairy. Table 4.3-10 depicts each Alternative's respective impacts to the dairies in the project area.

Table 4.3-10 AME Project Impacts to Dairies

Dairy	Acres Affected Alternative 1A	Acres Affected Modified Alternative 1B
Migliazzo	95	10
Trindade	16	16
Foriano	0	8

Source: Mark Thomas & Co., 2007.

Based on the preliminary geometric drawings prepared for the project, under Alternative 1A, two dairies would be directly impacted by the location of the AME, one of which would have a substantial amount of land impacted. At the Migliazzo & Sons Dairy, approximately 95 acres of land would be impacted under Alternative 1A. Given the large amount of land that would be required from this dairy, significant changes in dairy operations would be required in order for the dairy to continue operation, including reduction in the production capacity of the facility. Extensive evaluation would be necessary to determine what changes and modifications would be necessary to allow this dairy to remain in operation. In addition, the permits under which this dairy operates would need to be significantly modified or new permits obtained. Given the uncertainties about the modifications that would be necessary and if the operation would be able to continue in an economically viable condition, it is assumed that this dairy would be displaced by Alternative 1A. For the second dairy that would be impacted by Alternative 1B (the Trindade Dairy) , it is not anticipated that any buildings or structures associated with the milking operation would need to be removed. The relatively minor loss of land is not anticipated to affect the dairy such that continued operation would not be possible.

Modified Alternative 1B, would impact lands associated with the same two dairies (and an additional third dairy), however the impacts would be much reduced (approximately 34 acres in total from all three dairies). It is not anticipated that any buildings or structures associated with the milking operations at any of these dairies would need to be removed. Given the relatively small amount of land that would be impacted at each dairy, it is assumed that dairy operations at each dairy would be adjusted but the dairies would be able to remain in operation and in compliance with existing or modified permits.

The calculated area of impacts to these dairies is a conservative estimate. The final expressway right-of-way (ROW) will be determined in the final design and ROW acquisition phases. The final ROW will therefore be designated to minimize adverse effects to dairy operations to the extent possible.

RELOCATION LAWS

Property acquisition for the AME project would be governed by the Eminent Domain Law of the State of California (Code of Civil Procedure Sections 1230.010-1273.050), as well as the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Under these laws, affected property owners would be compensated for their land as well as home and business losses.

Homeowners, and tenants would be compensated for relocation and the loss of homes. ~~In addition, displacement of businesses, housing, and people would require the AME project sponsor to comply with the State of California's Relocation Assistance Act~~. The AME project sponsor would provide relocation benefits to displaced residents, ~~including~~ **such as** financial compensation for acquired properties, assistance in locating and obtaining suitable replacement housing, and information on Federal and State programs that may provide further assistance. As the supply of replacement housing in Merced County is more than adequate and, **it is anticipated that any relocated residents could be resettled in the project vicinity**

Qualified displaced businesses would be provided with relocation benefits, including financial compensation, assistance in obtaining and becoming established in a suitable replacement business location, supply of information concerning other federal and state programs which may be of assistance, and other advisory services to minimize hardships to business owners. The project sponsor would also be required to cover regulatory compliance costs associated with relocation of licensed facilities (such as in the case of relocation of hazardous materials storage structure).

In the event of a complete displacement of a dairy, the owner(s) of the facility could choose to purchase another existing facility or purchase a new site. In the event a new site is purchased, without active permits for the operation of a dairy, the property owner would need to secure numerous land use/environmental permits, including a Conditional Use Permit, Regional Water Quality Control Board Waste Discharge Requirements, Authority to Construct/Permit to Operate from the San Joaquin Valley Air Pollution Control District, and other related permits. These permits would be subject to site-specific, focused environmental review under CEQA. It is not feasible for this EIR to speculate on the exact nature of the regulatory compliance or environmental issues which might be encountered in relocating some portions or all of the dairy facilities.

Right-of-way agents, working in conjunction with the home and business (including dairy) owners, would fully evaluate the economic impact of the AME project as part of the right of way acquisition process and would need to determine whether to relocate businesses or modify and continue operations on the current site. As the AME project sponsor is obligated to comply with the requirements of the State of California's ~~Relocation Assistance~~ Law**s related to relocation and eminent domain**, any impacts associated with displacement of housing or **businesses** ~~residents~~ would be less than significant.

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4.4 VISUAL RESOURCES

This section addresses existing visual conditions, focusing on the visual character of the project study area and views from surrounding public areas, and the potential for the project to affect those conditions. The analysis of the project's potential visual effects is based on field observations of the project site and surroundings, review of project drawings and technical data, aerial maps and ground-level photographs of the project area, topographic data and public planning documents.

4.4.1 EXISTING CONDITIONS

Visual Character

The project is located in the northeast portion of Merced County, north and west of the City of Merced, and south and east of the City of Atwater. This portion of Merced County is located on the valley floor of the Central Valley and features natural aesthetic amenities including panoramic views of both the Coastal ranges and the Sierras.

The overall visual character of the project study area is primarily rural. The area within and surrounding the project alignment consists primarily of undeveloped lands used for grazing or lands in agricultural use, such as orchards, vineyards, and low-level crops. The agricultural land adds greenery to the area, establishing a rural aesthetic character. In most cases, wooden and metal fencing surrounds agricultural parcels as well as green vegetation or brown brush.

The topography of the project study area is generally flat. The somewhat flat nature of the area allows for views that can extend to the horizon, with stands of trees and buildings visible at varying distances from almost any point in the study area. Also visible from most points are any of a number of two-lane rural roads within the area. In general, these roadways are immediately adjacent to parcels occupied with orchards, trees and bushes, and agricultural fields. Long distance views in the project area are frequently constrained by hazy weather conditions.

VISUAL SEGMENT 1

The location of Visual Segment 1 is demonstrated in **Figure 4.4-1**. Visual Segment 1 of the project study area consists primarily of agricultural land, including vineyards and low-level crops. Typical row-crops grown in the area include corn, tomato, and sweet potato. The fields contain plants, generally green in color during growing times, organized into tightly spaced rows with brown soil cover generally between the rows. When the fields have been recently plowed, the soil is exposed and the land is brown in color. Such agricultural visual characteristics are not isolated to Visual Segment 1, however, but are found throughout the project area.

Livestock is also prevalent within the project area, and cows and sheep can be seen standing and sometimes grazing in livestock enclosures. View A of **Figure 4.4-2** provides an example of the livestock and associated livestock features, such as feeding grounds, which add to the rural character of the project area. The majority

of the livestock is located along Bellevue Road. There are also agricultural support structures in this and other segments, such as sheds, barns, and fencing.

There are several clusters of single-story homes located within Visual Segment 1 as well, particularly at the intersection of Bellevue Road and SR 59. The homes resemble ranch-style architecture with rectangular shaped buildings with slightly pitched roofs and some decorative exterior details. The homes are typically decorated with neutral colors, such as brown or taupe. The barns and sheds have wooden walls and tin roofs. A description of the visual nature of these homes is included in the discussion of Visual Segment 2.

Portions of the Castle Airport Center are situated in or near the northwest portion of Visual Segment 1 of the project study area. The Castle Air Base closed in 1995 and has since been used as a public airport and for some commercial reuse of the buildings. The air base site is presently undeveloped in the southern portion, which is near proposed Alternative 1A and which is crossed by **Modified** Alternative 1B. In the more northern portion of the air base, features visible in the distance from the project study area include one-and two-story buildings and a single paved runway. The multi-story air traffic control tower, located in the center of the airfield, is the tallest visual feature at the Castle Airport site and is distantly visible from portions of the project study area.

There are several creeks, including Bear, Black Rascal, and Canal creek, that cross through the project area. Canal Creek, a tributary of Black Rascal Creek, is located in the western portion of Visual Segment 1, adjacent to the southern section of Castle Airport and parallel to the AME. The remaining two creeks are located within Visual Segment 3, discussed below.

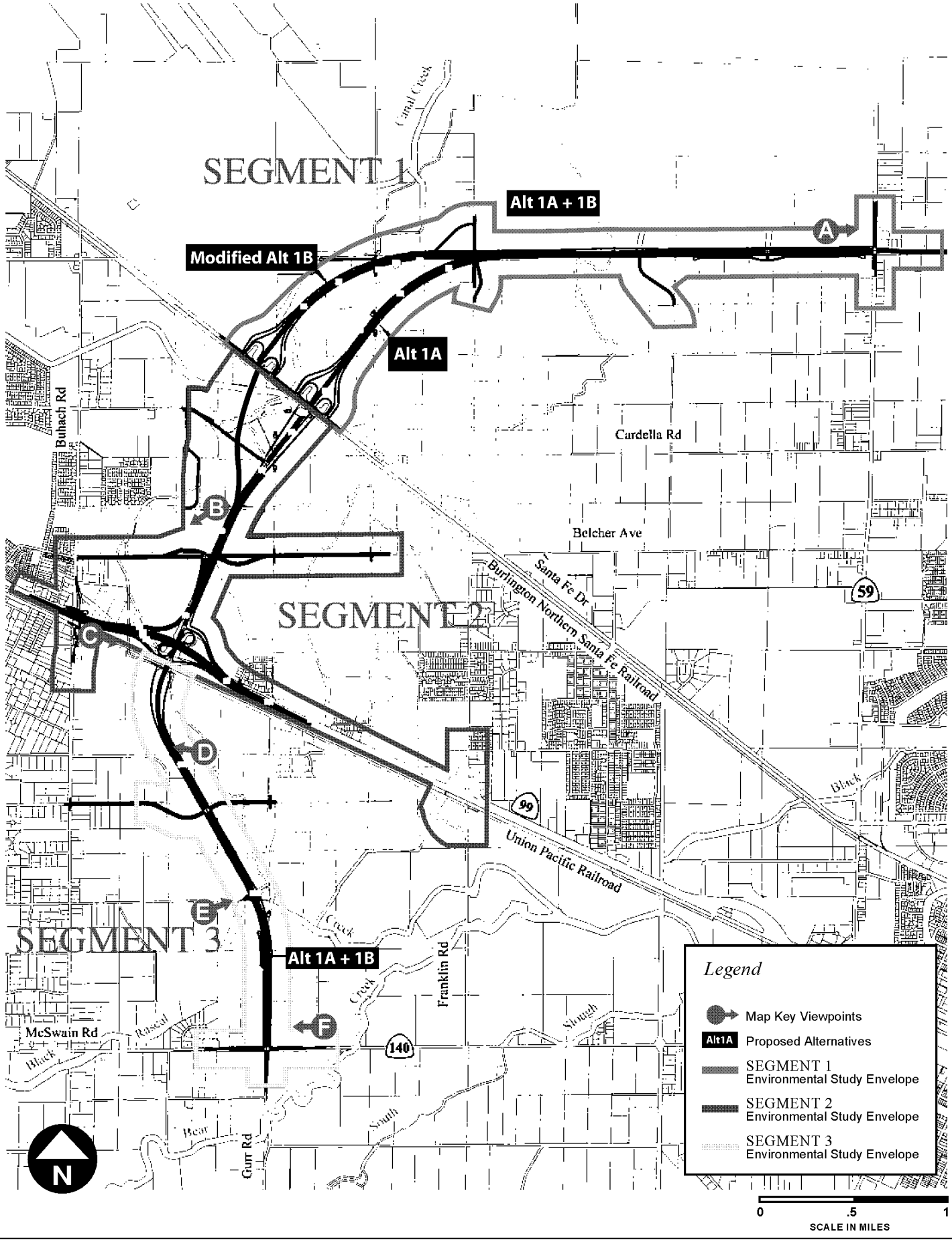
VISUAL SEGMENT 2

Although Visual Segment 2 is primarily composed of undeveloped agricultural land, similar to what is found in Visual Segment 1, there are several clusters of single-story homes within and around this portion of the project study area. These homes are similar to those described in Visual Segment 1, above. **Figure 4.4-1** illustrates the location of Visual Segment 2 within the project study area.

One- to three-story commercial and office buildings are located within the southern section of Visual Segment 2 along the SR 99 corridor and directly west of the project area. The buildings within the project study area generally have wooden exterior walls with low-level pitched roofs. In addition to homes and businesses, the one-story brick and concrete Buhach Colony High School site is located just north of Avenue Two and east of Gurr-**Buhach** Road.

There is also a Church located in the easternmost section of Visual Segment 2 at the intersection of Buhach Road and SR 99. The Buhach Catholic Church is designated as a historic building and is located on Buhach Road 700 feet south of SR 99. The architecture of the Buhach Catholic Church resembles the characteristics of a Spanish Mission through its use of wood form construction and domed bell towers, shaped parapets and arched windows. For more information regarding the Buhach Catholic Church, refer to 4.12, Cultural Resources.

Although the majority of the roads located within the project area are narrow, two-lane county roads, there are several main transportation features crossing through Visual Segment 2. SR 99 and the Union Pacific Railroad traverse along the southern border of Visual Segment 2. SR 99 is a four-lane, highly traveled highway. The landscaping along SR 99 and the railroad includes low-level brush, and some existing



ATWATER-MERCED EXPRESSWAY

Key to Viewpoints

REVISED FIGURE 4.4-1

Source: CirclePoint, 2008.

vegetation, including oleanders in the median of SR99 and eucalyptus scattered along the SR99 corridor. As previously mentioned, there are clusters of commercial and industrial developments along this portion of SR 99 and Union Pacific Railroad corridor. Similarly, Santa Fe Drive and Burlington Northern Santa Fe Railroad run through the northern portion of Visual Segment 2. At four lanes wide, Santa Fe Drive serves as a main thoroughfare for the region.

VISUAL SEGMENT 3

The majority of the orchards within the project area are located within Visual Segment 3 (refer to Figure **4.4-1** for the location of Visual Segment 3). However, there are orchards found throughout the project study area as well. The orchards generally have mature trees over 6 feet tall with dense green foliage during the growing season. The trees are laid out in evenly spaced rows with grassy pathways between. In the project study area, nut tree orchards are common, such as almond and walnut.

There are also several scattered residential units along Gurr Road. The homes represent similar visual characteristics as described above. These homes are typically surrounded by agricultural land and medium to mature tress, illustrating the rural aesthetic quality of the area.

As stated before, several creeks run through the project area. Both Bear Creek and Black Rascal Creek run through Visual Segment 3 of the project area. Black Rascal Creek intersects Gurr Road just south of Elliot Avenue, while Bear Creek runs through the south-eastern most corner of Visual Segment 3. Typical views of the creeks can be seen in View B of **Figure 4.4-2**. Generally, the creeks run below grade level and are narrow in nature, running approximately 15 feet wide. This makes the creeks difficult to see, except from very close range. The creek banks have minimal to none riparian habitat and are primarily lined with dry, brown grass and brush with some low-level green vegetation along the water level.

DESIGNATED SCENIC VISTAS

According to the Merced County General Plan, there are no designated scenic highways within or adjacent to the project study area. The panoramic views of the Costal ranges and the Sierra Mountains are characterized as scenic vistas in the Merced County General Plan. Bear Creek is also designated as a scenic resource within the County's General Plan.

The City of Atwater's General Plan has designated several routes within the project study area as scenic corridors, including portions of Bellevue Road and Buhach Road that are located within the City's boundaries. State Route 99 is considered a gateway into the City of Atwater and policies in the City's General Plan encourage the enhancement of the visual quality of SR 99 through landscaping, signage, and gateway treatments.

OTHER SCENIC RESOURCES

Although there are no designated Heritage Trees or Heritage Tree Ordinances in the City of Atwater or Merced County, larger trees in the project area could be considered scenic resources. Numerous mature eucalyptus trees are located within the project area, three of which can be seen at the intersection of Gurr Road and Black Rascal Creek in Visual Segment 3 (refer to Viewpoint E on **Figure 4.4-3c**). Additionally, orchards of almond and walnut trees located within the project area could also be considered scenic elements. There are also oleanders planted in the median of SR 99 and eucalyptus trees along its corridor that, in

addition to providing an aesthetic resource, also reduce headlight glare. Merced, San Joaquin and Bear Creek river corridors and the mix of agricultural lands, including orchard lands and open field crops, also contribute to the natural and rural aesthetic character of the project area.

Sensitive Views

Viewer groups that could be affected by the project include people that are located within, adjacent, or that travel through the project study area. This includes motorists, pedestrians, bicyclists, and viewers from nearby homes, schools, commercial and office building sites. The degree to which these people's views would be affected by development in the project area varies depending on their physical location and the duration of their view. For example, because the general topography of the area is flat and long-distance views are generally available, motorists traveling in the area would likely have relatively brief views of a new development and it would seem relatively small in scale to the overall landscape. For attendees of a school near a new major development, the development could be a new prominent visual feature and the duration of this changed view would be long-term.

Although views of the Coastal ranges and Sierra mountains (identified as scenic vistas in the Merced County General Plan) are available from locations within the project study area, the ranges are distant and often not visible due and hazy weather conditions.

Area Lighting

As the project study area is primarily rural and undeveloped, nighttime lighting within the area is very limited. In general, street lamps or other exterior lighting elements do not exist within the study area. Existing light sources include common sources such as lighting from the windows of homes, exterior lighting for commercial businesses, and from the headlights of motor vehicles traveling within the area. The majority of the commercial businesses are located within Visual Segment 2 along SR 99 and nighttime light sources are concentrated along this route.

In addition to these homes and businesses, there is florescent lighting on overhead light posts along the perimeter of the Santa Fe Pacific Pipelines property, located at the intersection of Union Pacific Railroad (SR 99) and Buhach Road (refer to Viewpoint C of **Figure 4.4-3b** to see lighting fixtures). This lighting is focused towards the fuel tanks within the area, which are painted white and are clearly visible at night from nearby viewing points.

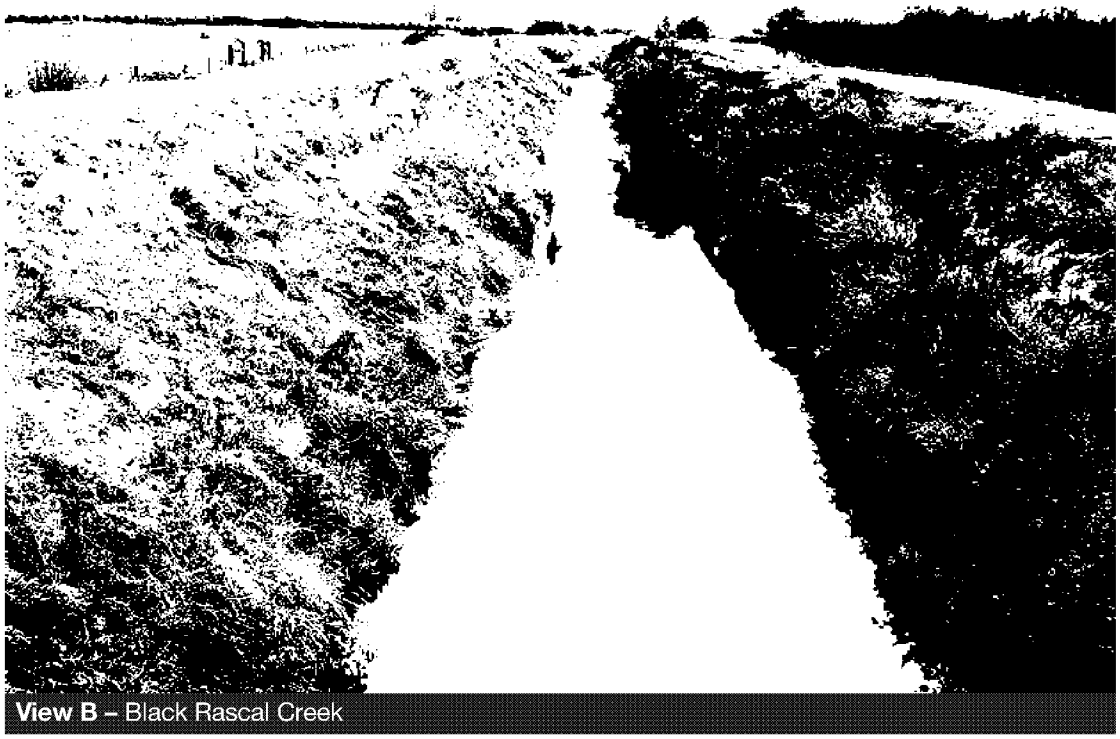
Lighting from motor vehicles traveling through the project area along SR 140, SR 99, and SR 59 produce the major temporary sources of light, as freeways tend to be more densely traveled than rural roads. However, traffic traveling along the rural roads would also contribute to area lighting.

Views of the Project Study Area

The following viewpoints were selected because it was felt that they best represented the visual character and quality and/or the unique visual features of the project study area. **Figure 4.4-2** provides a key indicating the location and direction of these viewpoints.



View A – Typical view of livestock within the project study area



View B – Black Rascal Creek

ATWATER-MERCED EXPRESSWAY

Views A & B

FIGURE 4.4-2

Source: Site Visit Photograph.

VIEWPOINT A – INTERSECTION OF BELLEVUE ROAD AND SR 59

The intersection of Bellevue Road and SR 59 is located on the east side of Visual Segment 1. The two roadways meet at a four-way intersection, with stop signs on Bellevue Road, as shown in Viewpoint A of **Figure 4.4-3a**, which shows the view from this intersection looking east. The roadways in this area have unpaved shoulders and do not have curbs or gutters, demonstrating the rural visual character of the project study area. This viewpoint illustrates the general aesthetic nature of the rural two-lane roads located throughout Visual Segment 1. There are multiple above-ground power lines that intersect within short-range view of this junction.

Also shown in this viewpoint are short- to mid-range view of single story homes located on both the northeast and southeast corners of the intersection. These residences are two stories or less, set back from the roadway, and include typical features associated with a home site, including fencing, driveways, and area landscaping. The fencing surrounding the property line of the home on the northeast corner of the intersection is constructed of wood and is approximately 4 feet tall. Viewpoint A depicts the type of residential development within and adjacent to the project area. Views south down SR 59 include power lines, shrubbery, and medium-sized trees, and ruderal groundcover, while the west side of Bellevue Road is occupied by a vineyard. The westward view down Bellevue Road includes the vineyard and several single story homes along the edge of the roadway, visible in long-range views.

VIEWPOINT B – INTERSECTION OF AVENUE TWO AND PROPOSED ROADWAY

Avenue Two is a two-lane road running through Visual Segment 2 of the project area, ~~just south of the proposed Alternative 1A and B. Avenue Two is~~ bordered by agricultural lands to the north and south. A single story home and accessory structures are also located on the southern side of Avenue Two. The home is situated approximately 200 feet from the road and is surrounded by multiple medium sized trees, haystacks, and other typical residential structures including fences and a dirt driveway.

The home is of a neutral color and is rectangular in nature. Power lines and numerous mature trees line the north side of the road. The trees add greenery to this particular area, as this viewpoint is primarily composed of brown open fields. These views, shown in Viewpoint B of **Figure 4.4-3a**, are typical of this portion of the project area.

VIEWPOINT C – INTERSECTION OF UNION PACIFIC RAILROAD (SR 99) AND BUHACH ROAD

The intersection of Union Pacific Railroad and Buhach Road is located on the western portion of Visual Segment 2. As seen in Viewpoint C of Figure 4.4-3b, there are two large fuel tanks owned by Santa Fe Pacific Pipelines within short-range view , at the southeast corner of the intersection (approximately 500 feet east of SR 99). These tanks are a part of the area fenced off from public access. Buhach Catholic Church (not visible in Viewpoint C) is located on the east side of Buhach Road (for greater detail on the Buhach Catholic Church, refer to Section 4.12, Cultural Resources). Long-range views from this viewpoint location include agricultural crop land, and distant trees. Although Viewpoint C demonstrates views atypical of the project study area as a whole, it exemplifies the way in which industrial features, such as the fuel tanks, are integrated into the landscape, primarily concentrated along SR 99 in Visual Segment 1 and 2.

VIEWPOINT D – ELLIOT AVENUE

Elliot Avenue is a narrow two-lane road that runs east-west through the northern portion of Visual Segment 3 and adjacent to almond orchards and agricultural fields. Elliot Avenue is primarily lined with farm fences, power lines, and almond tree orchards, as seen in Viewpoint D of **Figure 4.4-3b**. The farm fences are approximately 4 feet in height and are constructed of brown steel posts and heavy duty metal wires, allowing viewers to see through the fencing structures. The orchards seen in this viewpoint are indicative of the other orchards within the project study area. The orchard trees are typically dense, evenly spaced, and shorter than 20 feet in height. The orchards provide greenery to the short-range and mid-range views of the project area. An irrigation canal runs in close proximity to Elliot Avenue as well. Short-range views from this point include a single story home situated between two mature trees located approximately 500 feet from the south side of the road. A southwesterly facing view from the home encompasses an open field in the foreground and mature trees along the horizon in the mid-range view, similar to the Viewpoint B of **Figure 4.4-3a**. Long-range views from this viewpoint are obscured by the dense foliage of the orchards.

VIEWPOINT E – CROSSING OF BLACK RASCAL CREEK AND GURR ROAD

The intersection of Black Rascal Creek and Gurr Road is situated in the center of Visual Segment 3 of the project area. The short-range views from the north of Gurr Road include 3 mature trees, 1 located on the eastern side of the road and the remaining 2 on the west. Agricultural land can also be seen within the short-range view towards the northeast. A two-story home is currently being built on the west side of the road, situated between two large eucalyptus trees, as seen in Viewpoint E of **Figure 4.4-3c**. Black Rascal Creek also runs immediately adjacent, just south of the two story home and crosses perpendicularly under Gurr Road. From this viewpoint location, the creek is visible in short-and mid-range views. As described previously, the creek is narrow and lined by grass and brush. Mid-range views from this location also include fencing that separate the agricultural lands from Gurr Road. Large trees, single story homes/businesses, and evenly spaced over-head power lines are visible in long-range views in this area. Viewpoint E illustrates the presence of mature eucalyptus trees along the proposed alignment and the limited number of isolated residential units dispersed throughout the project area.

VIEWPOINT F – INTERSECTION OF MCSWAIN ROAD (SR 140) AND GURR ROAD

McSwain Road (SR 140) and Gurr Road are both narrow two-lane roads that meet at the southern tip of Visual Segment 3 of the project study area, as seen in Viewpoint F of **Figure 4.4-3c**. These rural roadways do not include sidewalks or curbs. Beneath Gurr Road, to the south of the intersection and parallel to McSwain Road, is an agricultural irrigation canal, as shown in Viewpoint F of **Figure 4.4-3c**. Aboveground power and telephone lines run adjacent along McSwain Road. A portion of the Merced County Fire Station (behind the posted sign) can be seen in the foreground at the southwest corner of the intersection as well. Orchards, presumably almond and walnut, occupy the northeast and northwest corners of the intersection. In addition to the orchards, there are several single story homes located within mid-range views along the western sides of McSwain and Gurr Roads. Mid-range and long-range views from this viewpoint consist primarily of agricultural lands including row crop fields and orchards. Evenly spaced power line poles supporting above-ground power lines in this area as well. Viewpoint F is indicative of the project area as a whole, as it represents the presence of two-lane roads lined with orchards and agricultural land and the irrigation canals located within the project area.



Viewpoint A – View east from intersection of Bellevue Road and SR 59



Viewpoint B – View southwest from intersection of Avenue 2 and Proposed Alignment

ATWATER-MERCED EXPRESSWAY

Viewspoints A & B

FIGURE 4.4-3a

Source: Site Visit Photograph.



Viewpoint C – View of Santa Fe Pacific Pipelines Tanks at intersection of Union Pacific Railroad (SR 99) and Buhach Road



Viewpoint D – View west on Elliot Avenue

ATWATER-MERCED EXPRESSWAY

Viewpoints C & D

FIGURE 4.4-3b

Source: Site Visit Photograph.



Viewpoint E – View west from intersection of Gurr Road and Black Rascal Creek



Viewpoint F – View west from intersection of McSwain Road (SR 140) and Gurr Road

ATWATER-MERCED EXPRESSWAY

Viewpoints E & F

FIGURE 4.4-3c

Source: Site Visit Photograph.

4.4.2 REGULATORY SETTING

MERCED COUNTY GENERAL PLAN

The Open Space and Conservation Element of the Merced County General Plan contains the following policies related to aesthetics.

GOAL 3: Open space for recreation, aesthetics and protection from hazards.

Objective 3.B Lands with high aesthetic value are properly managed.

Policy 7 Stream corridors should be maintained in a natural condition and retain the general character of natural slopes and formations.

Policy 9 The location and construction of highways should occur in consideration of the surrounding landscape and topography.

CITY OF ATWATER GENERAL PLAN

The Land Use Element of the City of Atwater General Plan includes the following policy related to visual resources.

GOAL LU-4: Enhance the appearance of primary entrances into and through Atwater.

Policy LU-4.1 Utilize landscaping, signage, and gateway treatments to enhance the aesthetic appearance of primary streets into and through the community including, but not limited to:

- SR 99
- Bellevue Road
- Buhach Road
- Santa Fe Drive

The Conservation and Open Space Element also contains the policies associated with aesthetics.

GOAL CO-10: Enhance and protect the scenic resources within the City.

Policy CO-10.1 Utilize landscaping and other features to enhance and beautify major streets and gateways into and through the City.

Policy CO-10.2. Avoid excessive signage and other features which could detract from the scenic quality of prominent circulation routes.

FINAL CASTLE AIR FORCE BASE REUSE PLAN

Castle Air Force Base is located to the northeast of Visual Segment 1. Alterative 1B would run through the southwest corner of the Base. The Land Use Element of the Final Castle Air Force Base Reuse Plan includes the following policy related to visual resources.

c. Landscaping and Screening
Approximately 1.4 miles of Castle Airport fronts along Santa Fe Road which is a major arterial between the project study area, the cities of Merced and Winton, and streets that connect to Highway 99. Santa Fe Road provides the first view of Castle Airport for motorists. The three gate entries that egress from Santa Fe Road provide another viewing opportunity for motorists. It is recommended that fencing and landscaping standards be developed to govern project design in areas along Santa Fe Road, main entries to Castle Airport, and in other areas of visual significance.

THE ROUTE 99 CORRIDOR ENHANCEMENT MASTER PLAN

Caltrans and local communities along the State Route 99 corridor have worked together to develop a master plan to address capacity needs and improve aesthetics of the corridor. The Route 99 Corridor Enhancement Master Plan was developed with the goal of strengthening community identity, unifying freeway improvements, and developing design concepts that tie communities through the San Joaquin Valley together and foster a valley-wide identity. In addition, it is intended to guide public and private sector decisions in the development of the 99 Corridor by setting specific improvement approaches and themes.

The Route 99 Corridor Enhancement Master Plan identifies the median oleander and the eucalyptus trees along the Route 99 Corridor as an important symbol of the corridor and reiterates the need to preserve the existing highway planting. "These trees are a signature planting of California's highway design era. Although aesthetic in nature, this landscape also serves many functional purposes, such as controlling dust and erosion, providing fire and weed control, delineating the route, and providing headlight screening. Planting is also used to screen objectionable views of adjacent properties, as well as to screen the roadway from the community. In addition, roadside planting can act as a frame for distant vistas."

Policy Consistency Analysis

The project would be consistent with the Merced County and City of Atwater General Plan, the Final Castle Air Force Base Reuse Plan and the Route 99 Corridor Enhancement Master Plan goals and policies related to aesthetics. As part of this analysis, scenic vistas and scenic resources (such as creeks) have been examined to ensure that their aesthetic quality would not be substantially degraded without proper mitigation measures, consistent with County General Plan Policy 7. Furthermore, consistent with County Policy 9, and City Policy LU-4.1, consideration of existing visual conditions, and design of median landscaping, signage, lighting and materials, would be in accordance with local County roadway construction standards so as to maintain and enhance the visual quality of the area and ensure traffic safety. The mitigation measures prescribed in the impacts portion of this section would reduce any impacts to scenic resources or visual quality to the extent possible.

4.4.3 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. The project would have a significant aesthetics impact if it would:

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

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

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

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

Less Than Significant Impacts

The assessments of visual impacts is based on a determination of where visual changes resulting from the implementation of the AME project would significantly change or contrast with the current aesthetic quality of the existing landscape viewed from selected viewing points.

The construction of the proposed AME project would have a less than significant adverse impact on a designated scenic resource, the Bear Creek corridor.

Although Bear Creek crosses through the southeast corner of Visual Segment 3 of the project area, views of the river corridor would not be available from the proposed alignment due to distance, differences in topography, and existing foliage. As stated before, Bear Creek is a small waterway that runs below grade, and therefore cannot be seen in long-range views from the proposed alignment. Project construction would not impact the visual quality or integrity of Bear Creek, as the roadway would not cross or cover any portion of the creek corridor. Therefore, views of the Bear Creek river corridor would not be compromised or affected by the project alignment, and impacts related to scenic vistas would be considered less than significant.

Development of the AME project would not substantially change visual elements of designated scenic roadways including Bellevue Road, Buhach Road and SR 99 and scenic resources, such as trees.

Project construction would require alterations and realignments of scenic corridors within the project area. The scenic corridors located within the project area include portions of Bellevue Road between Franklin Road and SR 59, Buhach Road south of SR 99 and the north of Avenue Two, and SR 99. Although these roadways would be impacted by project construction, views from the roadways would not be significantly altered. The proposed alignment would run along the existing topography, therefore maintaining the current visual elements of the designated scenic roadways. Furthermore, the roadways would be expanded from a

two-lane corridor to a four-lane highway, allowing greater viewing access to the visual elements of the project area. The impacts associated with each designated scenic roadway are discussed below.

Bellevue Road

Although the project would affect Bellevue Road, construction of the AME project alignment would result in similar views to what currently exists and would not compromise the overall existing aesthetic nature of the scenic corridor. Bellevue Road itself will not be upgraded. Although portions of the AME would be elevated above the area's natural topography, this change would not be significant enough to impact visual elements in both short-range and long-range views from Bellevue Road. Views of agricultural land, orchards, vineyards, and mature trees along the horizon would be maintained. The visual elements would remain similar to existing views, as both current and proposed project features are roadways that follow the natural topography of the area. Therefore, impacts to the scenic roadway Bellevue Road would be considered less than significant.

Buhach Road

The current Buhach Road and SR 99 interchange would be replaced by an overpass that would extend over both SR 99 and the Union Pacific Railroad. Although this would be an elevated roadway, views from the overpass would be similar to the existing views because a roadway is already located along the proposed alignment. Although the overpass would obscure some views from the project study area, existing viewers are limited to residents of the small residential developments west of Buhach Road. However, the addition of an overpass would enhance the views of motorists traveling on Buhach Road, as they would be able to see extended mid-range and long-range views of the rural and agricultural aesthetic elements within the area. Therefore, impacts to the scenic Buhach Road and SR 99 interchange would be considered less than significant.

SR 99

As described above, SR 99 is considered a gateway to the City of Atwater. The project would realign a section of SR 99 within the City of Atwater. The realigned portion of SR 99 would be built in accordance with Caltrans roadway construction guidelines for landscaping, signage, lighting, and material usage, and would improve the visual characteristics of this portion of SR 99. Similar to the overpass on Buhach Road, the realignment and creation of an elevated ramping system on SR 99 would enhance the mid-range and long-range views for motorists. South of the Buhach Road overcrossing, the elevated northbound lanes of SR 99 would be lowered to match the grade of the other northbound lanes. Therefore, scenic impacts related to SR 99 would be considered less than significant.

Other Scenic Resources (Trees)

Merced County and the City of Atwater do not have a specific tree preservation Ordinance, or have tree-preservation policies. Therefore, there are no designated scenic trees within the project area. The project would result in the removal of various trees and other vegetation located along and within the project alignment. Because of this, the project would include landscaping along the new expressway as well as the portion of SR 99 that would be reconstructed. Landscaping would be in accordance with local regulations, to preserve the rural visual quality of the area. Temporary ESA fencing would also be used during project

construction to protect existing trees and shrubs and permanent barriers would be installed after construction, consistent with Caltrans design guidelines. Therefore, impacts related to the loss of scenic resources (such as trees) are considered less than significant.

Impacts to existing vegetation within Caltrans facilities, including oleander and eucalyptus trees, are discussed in impact VIS-2 below and are considered less than significant with mitigation.

Alterations to the existing visual character of the area as a result of project construction would have a less than significant impact on the current rural and natural aesthetic quality of the area.

Implementation of the AME project would alter the existing visual character of the project area through the addition of a four lane roadway in a predominantly rural area. As previously described, although there are residential and commercial developments within and in proximity to the project site, the area is primarily agricultural and undeveloped. Changes to the visual character of the area would be experienced by a limited number of affected viewers, including local residents and motorists traveling along the two-lane county roads.

Although there would be an addition of a new roadway through existing agricultural land, the general aesthetic nature of the area would not be substantially altered, as the roadway would primarily follow the existing topography of the area, with the exception of two elevated interchanges, discussed below. The replacement of some agricultural land would take place with project construction; nevertheless, this replacement would not directly degrade or distract from the overall aesthetic nature of the project area as the majority of the open and agricultural land within the area would remain in place. The most significant changes to the agricultural aesthetic quality of the area would occur in Visual Segment 2, as the proposed AME would travel through previously undeveloped agricultural land. However, as there are existing roadways within this segment, the addition of a new and expanded roadway would not significantly distract from the current visual setting.

Although the AME would primarily follow the topography of the area, there would be the addition of two elevated interchange systems, **as well as one grade separated underpass under Modified Alternative 1B, all** ~~both~~ located within Visual Segment 2. The first **elevated interchange** would be located in an area currently used for agricultural production along Santa Fe Road. The second would be located along SR 99. Both elevated interchange systems would be crossing over existing roadways and railroads within the area. **The grade separated underpass proposed with Modified Alternative 1B would cross under Avenue One between the intersections of Avenue Two and Green Sands Road.** As these areas already have major transportation features, the construction of the elevated interchanges **and the grade separated underpass** would not detract or alter the existing visual character of the project area. Additionally, the project does not include buildings that would replace the agricultural visual character of the area with more urbanized aesthetic qualities. Therefore, the direct affect on the visual character of the area are considered less than significant.

4.4.4 SIGNIFICANT IMPACTS

Impact VIS-1: The construction, realignment, and expansion of roadways within the project area could create new sources of daytime and nighttime lighting that could adversely affect day or nighttime views in the area.

As previously discussed, the majority of the existing lighting within the project area is limited to natural sources, nearby residential and commercial buildings, and vehicle traffic lighting along the existing roadways. Project construction and operation would introduce new sources of light and glare to the project area, affecting day and nighttime views.

Construction Phase

Project construction would establish new sources of daytime glare to the area. Construction machinery would be temporarily stationed within the project area during the construction phase. The reflection of sunlight on construction machinery would establish new sources of glare. This glare, however, would be temporary as construction machinery would only remain in the area during the construction phase. Although the reflective glare would introduce sources not previously found in the project area, the sources would be limited and therefore would not significantly impact daytime views in the area.

Construction would also affect nighttime views in the area through the introduction of new light sources. Construction lighting, such as overhead fluorescent light fixtures and construction machinery lighting would create sources of light not previously located within the project area. These sources of lighting would also be temporary. Those primarily affected by the new sources of lighting would be nearby residents and motorists traveling on the county roads. The existing nighttime views are limited to short-range views, as there are limited existing lighting features in the project study area. Construction lighting could cause unwanted nighttime lighting for the nearby residents. As stated before, the majority of residential developments are located to the west of Visual Segment 2. Although the lighting may negatively affect nighttime conditions for the residents in their homes, the impact of construction lighting on nighttime views could be reduced to less than significant with proper mitigation measures (see below).

Operational Phase

The operational phase of the project would also introduce new sources of light and glare. Daytime views of the area would be affected by the reflection of the sunlight from motor vehicles. As there would be both new and expanded roadways, more vehicles would be able to access and travel through the area, therefore establishing new sources of daytime glare. Those primarily affected by the glare would be the motorists themselves. However, the proposed alignment would not create a significant amount of additional glare, as there are existing roadways throughout the project area, and glare from moving vehicles is generally short in duration. Thus, the reflective glare from the vehicles would not produce a significant amount of glare that would create an adverse impact to daytime views of the area.

Nighttime views in the project area would be affected by the light produced by vehicle traffic lights and street lighting fixtures. Those affected by the light include the residential and commercial uses within and in proximity to the roadway alignment. As stated before, the majority of these uses are located along SR 99 and immediately adjacent to Visual Segment 2 to the west. As with construction lighting, the lighting associated with the operational phase could cause unwanted nighttime lighting for nearby residents. However, sound walls would be placed between the residential and commercial uses, which would reduce adverse impacts that traffic and street lighting would have on nighttime views. For further discussion regarding the sound walls, refer to **Section 4.6, Noise**. Similar to the construction lighting, the street lighting along the AME would also allow for views of the project area that were previously unavailable at night. Overhead street lighting fixtures would be located at all proposed intersections and selected AME off-ramps. The lighting fixtures

would be in accordance with Caltrans standard overhead lighting, at approximately 36 to 40 feet in height. Proper mitigation measures could reduce the lighting impacts on nighttime views to less than significant.

With the implementation of the following mitigation measures, impacts related to light and glare would be reduced to a less-than-significant impact:

Mitigation Measure VIS-1a:

Lighting at construction sites shall be shielded and shall face downwards at lot lines so as to not be directly visible from any adjoining sensitive uses, such as residential areas, unless required to maintain safe levels of lighting for work and security, and as necessary to meet Occupational Safety and Health Administration (OSHA) standards.

Mitigation Measure VIS-1b:

Street lighting shall incorporate directional shielding so as not to shine directly on residential areas adjacent to the project site.

Significance After Mitigation: Less than Significant

Impact VIS-2: The removal of existing vegetation within Caltrans facilities could adversely affect existing visual features in these areas.

This project will require the removal of oleander and eucalyptus trees and common low-level brush within Caltrans facilities. Any removal of vegetation from the roadside will result in a noticeable change to the visual environment. Per the Caltrans Highway Design Manual, efforts should be made during the design stage of this project to preserve as much vegetation as possible. The removal of the median oleander will also result in increased head light glare from oncoming traffic.

Mitigation Measure VIS-2:

Any vegetation removal from within the state right-of-way as a result of the proposed construction activities shall be identified prior to removal and shall be replaced within project limits at a ratio approved by Caltrans. Funds shall be set aside by the project sponsor for replacement highway planting. Replacement highway planting must be installed within two years of damage or removal of the existing planting. A minimum 3-year plant establishment period will be included to assure the success of the replacement highway planting.

For any new plantings or plantings within project limits and Caltrans jurisdiction, barriers shall be installed, where possible without compromising motorist safety, in front of vegetation to avoid loss of tree and shrubs from vehicle collisions. During the construction of the project, ESA fencing shall be used to protect existing trees and shrubs will be required.

Significance After Mitigation: Less than Significant

Impact VIS-3: The construction and modification of project features within state facilities could be inconsistent with the visual character being implemented along SR 99.

This project will also include the construction of new bridges and barriers within Caltrans facilities, particularly around the interchange of SR 99 and the AME. In order to maintain visual consistency these new structures will need to incorporate materials and design elements similar to the existing facilities and in accordance with the visual character planned for SR 99.

Mitigation Measure VIS- 3:

Project facilities and features along SR 99 shall be constructed with aesthetic treatments consistent with the design guidelines provided in the Route 99 Corridor Enhancement Master Plan. These design guidelines shall apply to bridges, median plantings and soundwalls on SR 99 within project limits. The aesthetic design shall be approved by Caltrans prior to modification of any state facilities. These aesthetic treatments should be coordinated through the Caltrans Landscape Architecture unit and the Bridge Aesthetics unit at Caltrans Headquarters. This coordination with Caltrans and the incorporation of design features consistent with the Route 99 Corridor Enhancement Master Plan would reduce any impacts related to inconsistent visual features to a less-than-significant level.

Required design features are likely to include aesthetics treatments such as:

- Extended Gore Paving[1]
- Color or architectural concrete barrier used on bridge structures
- Color or texture on slope paving under a bridge abutment
- Color or arch work on the bridge fence
- Use of ~~a cobblestone~~ aesthetic treatment**s** on new soundwalls along SR 99

Significance After Mitigation: Less than Significant

[1] Extended gore area paving is identified in the Route 99 Corridor Master Plan as a design element that can be used to give identity to a community and visually unify the corridor. The Highway Design Manual, Chapter 500 recommends a contrasting surface treatment at non-traversable surfaces.

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4.5 TRAFFIC AND TRANSPORTATION

This section examines existing conditions and transportation-related impacts associated with implementation of the AME project. The project impacts are described in terms of traffic volumes and intersection and roadway levels of service (LOS). Mitigation measures are provided for any identified significant impacts. The information provided in this section is based on the traffic analysis prepared for the project by Dowling & Associates, Inc., February 2007 **and a memorandum update prepared in October 2008.**

4.5.1 METHODOLOGY

Level of Service Analysis

To measure the level of congestion on roadways and at intersections, transportation engineers and planners use a grading system called level of service (LOS). LOS uses categories ranging from LOS A (indicating free flow traffic conditions with little or no delay) to LOS F (indicating high levels of congestion with prolonged delays (i.e., traffic jam)). LOS standards can differ by region and jurisdiction and vary by type of intersection or roadway segment assessed, but failing roadway conditions (exceeding full capacity) are generally considered LOS E and below. The LOS criteria used in this analysis is obtained from the Transportation Research Board's Special Report 209, Highway Capacity Manual, 2000.

Both signalized and unsignalized intersections were assessed as part of this analysis, as well as a number of roadway and highway segments located between intersections. Traffic was analyzed under existing conditions and under three different future scenarios: Year 2030 No project conditions, Year 2030 with Alternative 1A, and Year 2030 with **Modified** Alternative 1B. LOS was calculated for AM-PM weekday peak hour conditions, weekend midday peak hour conditions, and AM-PM monthly peak hour conditions. Impacts were determined by comparing the 2030 No Project intersections and roadway segments to 2030 with Alternative 1A and 2030 with **Modified** Alternative 1B scenarios.

The level of service criteria for various types of intersections and roadways are explained below. A more detailed technical explanation of the methodology used to calculate LOS for signalized intersections is included in the traffic analysis, which can be obtained from Merced County Association of Governments (MCAG).

SIGNALIZED INTERSECTIONS

At intersections with traffic signals, level of service is determined by calculating the average delay for all vehicles entering the intersection and then assigning a corresponding LOS for both the intersection and each approach to the intersection. **Table 4.5-1** presents the average delay criteria used to determine LOS at signalized intersections.

Table 4.5-1 Level of Service Criteria for Signalized Intersections

Level of Service(LOS)	Average Delay[a] (seconds/vehicle)[b]	Description
A	< 10.00	**Very Low Delay:** This level of service occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all.
B	10.1 to 20.0	**Minimal Delays:** This level of service generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.
C	21.0 to 35.0.	**Acceptable Delay:** Delay increases due to only fair progression, longer cycle lengths, or both. Individual cycle failures (to service all waiting vehicles) may begin to appear at this level of service. The number of vehicles stopping is significant, though many still pass through the intersection without stopping
D	35.1 to 55.0	**Approaching Unstable/Tolerable Delays:** The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55.1 to 80.0	**Unstable Operation/Significant Delays:** This is considered by many agencies the upper limit of acceptable delays. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	> 80.0	**Excessive Delays:** Describes operations with average delay in excess of 60 seconds per vehicle. This level, considered to be unacceptable to most drivers, often occurs with oversaturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

[a] Weighted average of delay on all approaches.
[b] Seconds per vehicle.
Source: Highway Capacity Manual, 2000.

UNSIGNALIZED INTERSECTIONS

At intersections without traffic signals, LOS is calculated by determining the average total delay for each vehicle entering the intersection and for each approach to the intersection. In addition, LOS is also calculated at unsignalized intersections for vehicles making left-turns from minor streets, based on their ability to enter the stream of traffic on the major street. Traffic controls at these types of intersections include stop signs, four-way stop signs, yield signs, and simple merging of roadways. **Table 4.5-2** presents the average delay criteria used to determine LOS at unsignalized intersections.

HIGHWAY SEGMENTS

Several different LOS criteria were used to assess differing types of highway segments and ramp merge/diverge areas on highways. **Table 4.5-3** presents the criteria used to assess LOS on two-lane highways and **Table 4.5-4** presents LOS criteria for multi-lane highways.

Table 4.5-2 Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Delay[a] (seconds/vehicle)
A	0.0 to 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	>50.0

[a] Weighted average delay
Source: Highway Capacity Manual, 2000.

Table 4.5-3 Level of Service Criteria for Two-Lane Highways[a]

Level of Service	Percent Time Spent Following Other Vehicles	Average Travel Speed (mph)[b]
A	≤ 35	> 55
B	> 35 to 50	> 50 to 55
C	> 50 to 65	> 45 to 50
D	> 65 to 80	> 40 to 45
E	> 80	≤ 40
F	-traffic generally not moving	-traffic generally not moving

[a] Class I Facilities
[b] mph = miles per hour
Source: Highway Capacity Manual, 2000.

Table 4.5-4 Level of Service Criteria for Multi-Lane Highways

Land Use Element	Density (pc/mi/ln)[a] FFS[b]=60	Density (pc/mi/ln) FFS=55	Density (pc/mi/ln) FFS=50	Density (pc/mi/ln) FFS=45
A	11	11	11	11
B	18	18	18	18
C	26	26	26	26
D	35	35	35	35
E	40	41	43	45
F	>40	>41	>43	>45

[a] pc/mi/ln=passenger cars per mile per lane
[b] FFS = Free Flow Speed (speed of vehicles in miles per hour as density approaches 0)
Source: Highway Capacity Manual, 2000.

Table 4.5-5 presents LOS criteria for basic freeway segments and **Table 4.5-6** presents LOS criteria for ramp merge/diverge areas. The existing roadway network is discussed in greater detail below.

Table 4.5-5 Level of Service Criteria for Basic Freeway Segments

Level of Service	Density pc/mi/ln FFS = 70	Density pc/mi/ln FFS=65	Density pc/mi/ln FFS=60	Density pc/mi/ln FFS=55
A	11	11	11	11
B	18	18	18	18
C	26	26	26	26
D	35	35	35	35
E	45	45	45	45
F	>45	>45	>45	>45

Source: Highway Capacity Manual, 2000.

Table 4.5-6 Level of Service Criteria for Ramp Merge/Diverge Areas

Level of Service	Density (pc/mi/ln)
A	≤ 10
B	> 10 to 20
C	> 20 to 28
D	> 28 to 35
E	> 35
F	-

Source: Highway Capacity Manual, 2000.

Existing Roadway Network

The following section describes the existing roadway network within the study area.

Major Roadways

STATE ROUTE 59

State Route 59 (SR 59) is a two-lane highway that runs north-south through the City of Merced and unincorporated areas of Merced County. Within the City of Merced, SR 59 is considered a principal arterial route. SR 59 functions as a local commuter route within the greater Merced area, as well as an intercity commuter route for neighboring communities. SR 59 serves the agricultural land uses south and north of the City of Merced and the recreational areas of Lake McSwain and Lake McClure.

STATE ROUTE 140

State Route 140 (SR 140) is a two-lane highway and principal arterial route that runs east-west through the unincorporated areas of Merced County and connects with State Route 99 (SR 99) within the City of Merced. SR 140 serves agricultural areas south and west of the Cities of Merced and Atwater and the recreational areas of the Yosemite Valley. It also functions as an intercity commuter route for adjacent communities.

STATE ROUTE 99

SR 99 is a four-lane freeway and principal arterial route that runs northwest-southeast through the City of Merced, unincorporated Merced County, and through the City of Atwater. SR 99 is considered a major lifeline route for industrial, commercial, and agricultural needs as well as a major commuter route within and between the cities it serves.

Bellevue Road

Bellevue Road is a two-lane road that runs east-west from Fox Road to Lake Road, where the road is interrupted by the Castle Airport boundary. A separate portion of Bellevue Road runs between Santa Fe Drive and Winton Way in the City of Atwater.

Santa Fe Drive

Santa Fe Drive is a four-lane road that runs northwest to southeast from SR 132 in the City of La Loma through the City of Atwater to SR 59 in the City of Merced.

Ashby Road

Ashby Road is a two-lane road that runs northwest to southeast, parallel to SR 99 from Buhach Road to West 16th Street in the City of Merced.

Buhach Road

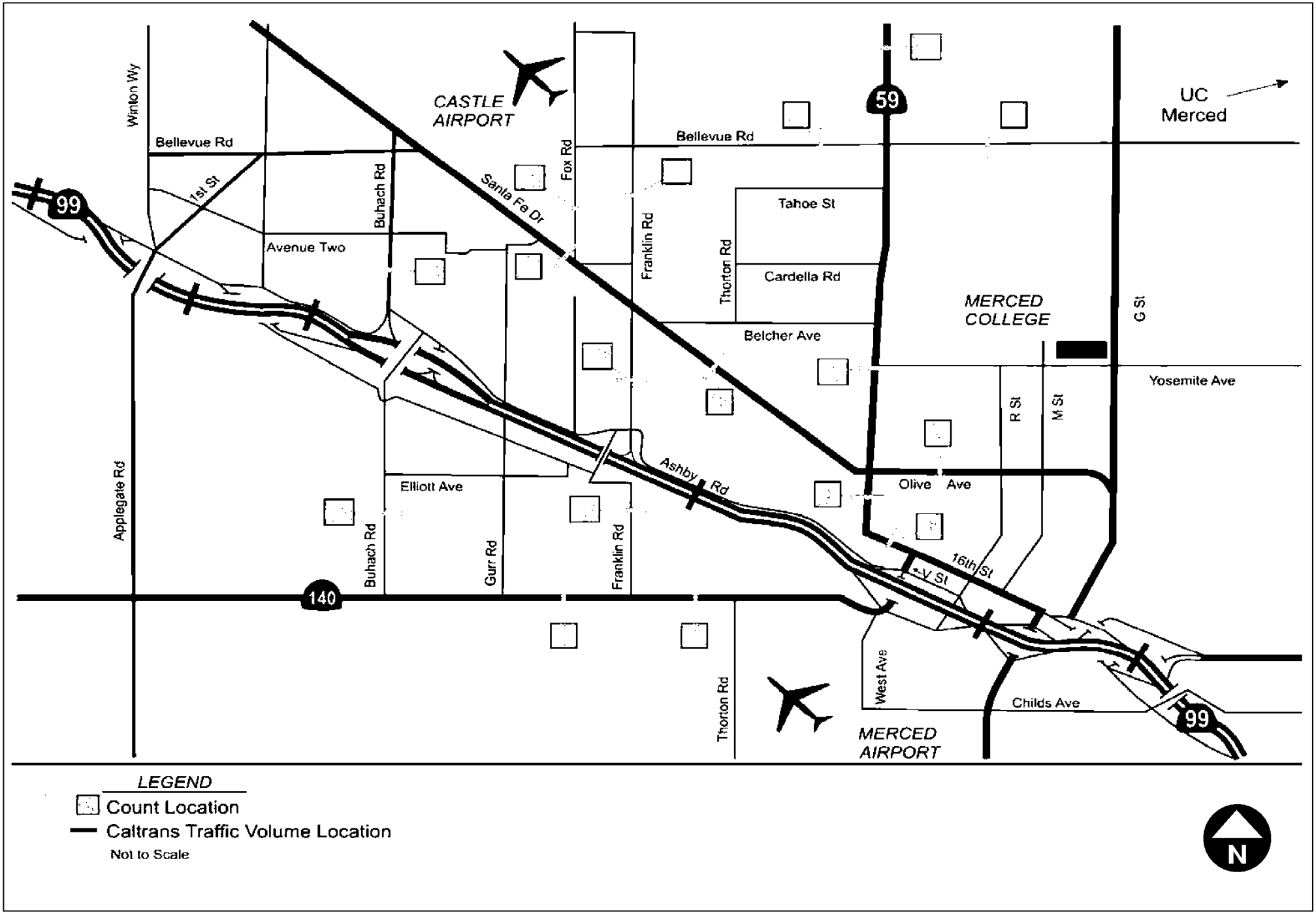
Buhach Road is a four-lane road that runs north-south from Santa Fe Drive to SR 140. It narrows to two lanes south of Green Sands Avenue.

Franklin Road

Franklin Road is a two-lane road that runs north-south from Santa Fe Drive to SR 140.

Roadway Segments Studied

Figure 4.5-1 depicts the location where traffic counts were taken to determine existing levels of congestion. **Table 4.5-7** provides the corresponding list of those locations.



ATWATER-MERCED EXPRESSWAY

Study Area Traffic Count Location

FIGURE 4.5-1

Source: Dowling Associates, Inc., February 2007

Table 4.5-7 Study Area Roadway Segment Locations

No.	Roadway Segment	Segment Limits
1	Bellevue Road	Between G Street and SR 59
2	Bellevue Road	Between SR 59 and Franklin Road
3	Santa Fe Drive	Between SR 59 and Franklin Road
4	Santa Fe Drive	Between Franklin Road and Buhach Road
5	Olive Avenue	Between Austin Street and SR 59
6	16th Street/SR 59	Between V Street and SR 59
7	SR 140	Between Buhach and Franklin Road
8	SR 140	Between Franklin Road and West
9	SR 59	Between 16th Street and Olive Street
10	SR 59	Between Olive Street and Yosemite
11	Franklin Road	Between Bellevue Road and Santa Fe Drive
12	Fox Road	Between Bellevue Road and Santa Fe Drive
13	Buhach Road	Between Avenue Two and Ashby Road
14	Buhach Road	Between SR 99 and SR 140
15	Franklin Road	Between SR 99 and SR 140
16	Franklin Road	Between Santa Fe Drive and SR 99
17	SR 59	n/o Bellevue Road

Source: Dowling Associates, Inc., 2007.

Intersections Studied

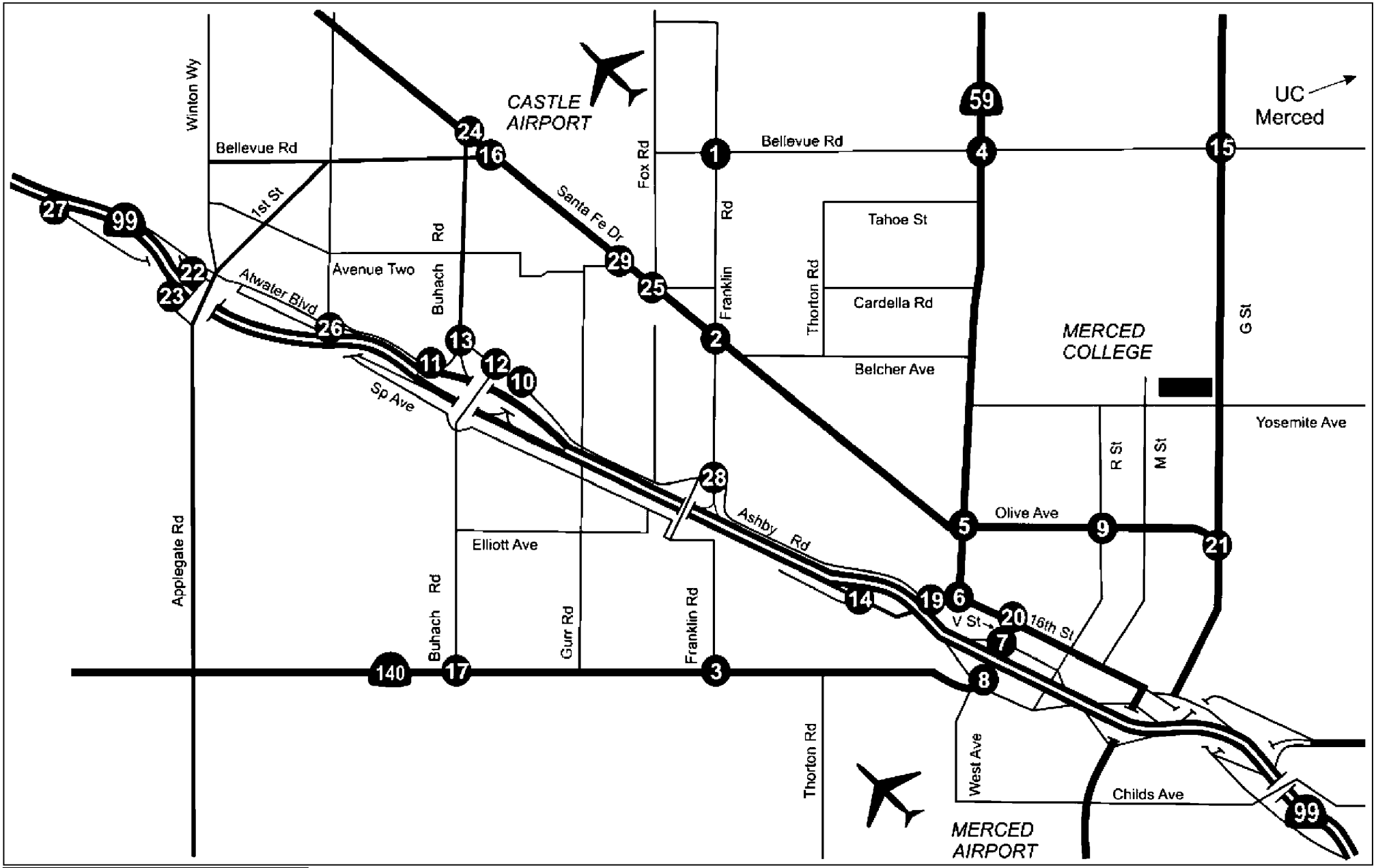
Figure 4.5-2 depicts the location of the intersections studied. **Table 4.5-8** provides the corresponding list of those intersections.

4.5.2 EXISTING CONDITIONS

The following section describes the existing traffic conditions within the study area.

Traffic Volume Counts

In September 2005 and October 2006, traffic was counted on 17 roadway segments within the Study Area. This was used to characterize existing average daily and peak hour weekday and weekend traffic volumes on roadways. The traffic counts also classified the type of vehicles, focusing on three or more axle trucks, as intersection operations are sensitive to the percentage of trucks present during weekday AM and PM peak hours. Traffic was also counted at 15 intersections in the study area in September 2005 for weekday AM and PM peak hours. An additional 14 traffic counts, conducted in 2004, were also used in the analysis to reflect annual traffic growth over time. The analysis determined peak month conditions. The peak month on California highways typically occurs in July in the study area.



ATWATER-MERCED EXPRESSWAY

Study Area Intersection Locations

FIGURE 4.5-2

Source: Dowling Associates, Inc., February 2007

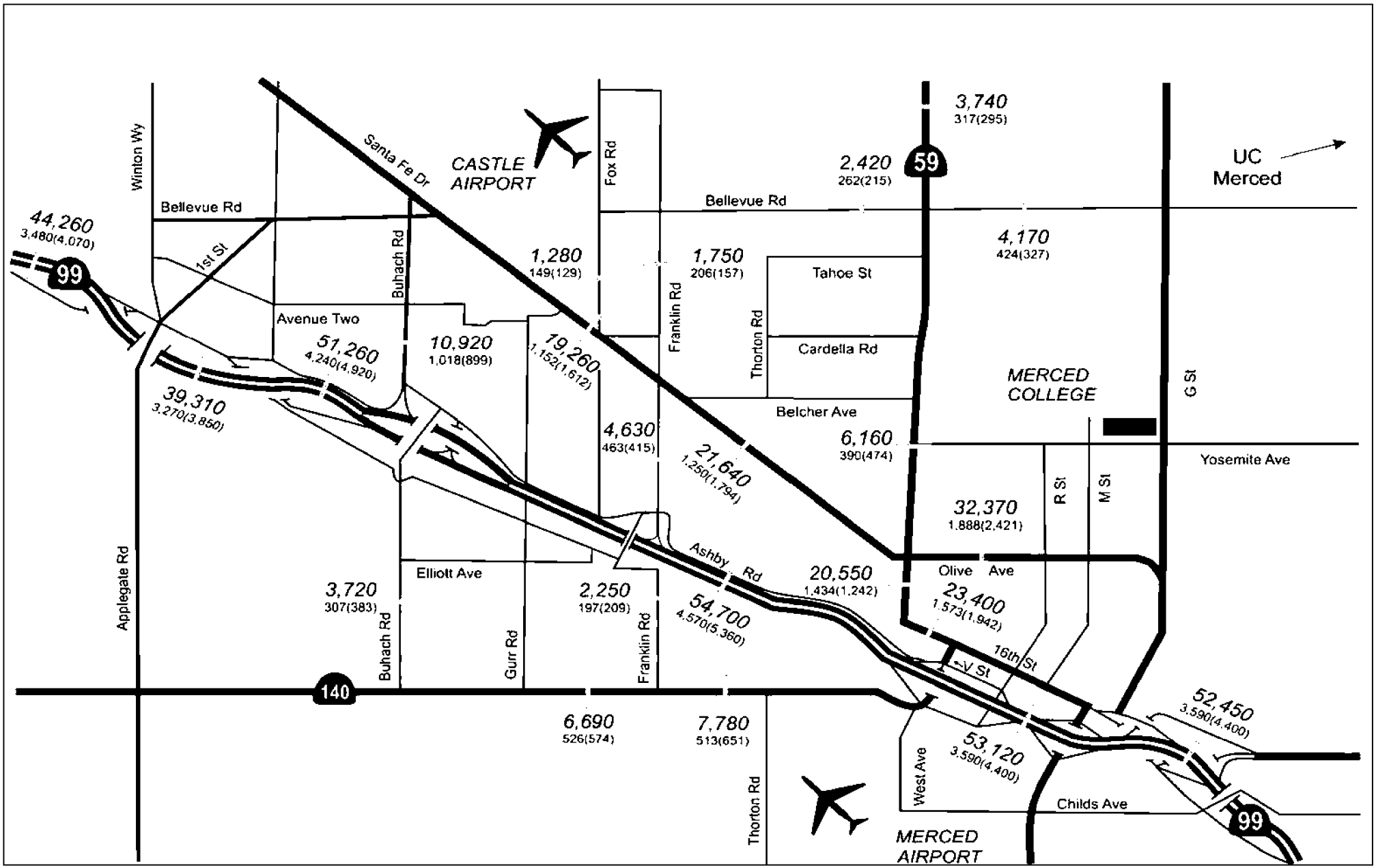
Table 4.5-8 Study Area Intersection Locations

No.	Intersection Location Description
1	Franklin Road and Bellevue Drive (Four-Way Stop Sign)
2	Franklin Road and Santa Fe Drive (Traffic Signal)
3	Franklin Road and SR 140 (Stop Sign)
4	Bellevue Road and SR 59 (Four-Way Stop Sign)
5	Santa Fe Drive and SR 59 (Traffic Signal)
6	16th Street and SR 59 (Four-Way Stop Sign)
7	V Street and SR 99 NB On Ramp (Traffic Signal)
8	V Street and SR 99 SB Off Ramp/SR 140 (Traffic Signal)
9	Olive Street and R Street (Traffic Signal)
10	Ashby Road (Buhach Road) and SR 99 SB Ramps (Stop Sign)
11	Buhach Road and Broadway (Stop Sign)
12	Ashby Road and Buhach Road (Stop Sign)
13	Ashby Road and Buhach Road (North) (Stop Sign)
14	SP Avenue and SR 99 SB Off Ramp (Stop Signs)
15	Bellevue Road and G Street (Four-Way Stop Sign)
16	Santa Fe Drive and Bellevue Road (Yield Sign)
17	SR 140 and Buhach Road (Stop Sign)
18	Not Identified
19	16th Street and SR 99 NB On Ramp (None)
20	16th Street and V Street (Traffic Signal)
21	Olive Avenue and G Street (Traffic Signal)
22	Sycamore Avenue and SR 99 NB Ramp (Stop Sign)
23	Bell Lane and SR 99 SB Ramps (Four-Way Stop Sign)
24	Santa Fe Drive (Aerodrome Entry) and Buhach Road (Traffic Signal)
25	Fox Road and Santa Fe Drive (Stop Sign)
26	Atwater Boulevard and SR 99 NB Off Ramp and Schaffer Road (Traffic Signal)
27	Atwater Boulevard and SR 99 SB Off Ramp (Stop Sign)
28	Franklin Road and Ashby Road (Four-Way Stop Sign)
29	Avenue Two and Santa Fe Drive (Stop Sign)

Source: Dowling Associates, Inc., 2007.

For peak month conditions, counts conducted in September were adjusted by five percent to reflect peak month conditions.

Figure 4.5-3 shows average daily and AM/PM peak hour roadway traffic volumes under existing conditions. **Figure 4.5-4** and **Figure 4.5-5** show the weekday AM/PM peak hour and weekend midday peak hour intersection turning movements, respectively.



LEGEND

15,800 Daily Volume
158(900) AM(PM) Volumes
Not to Scale

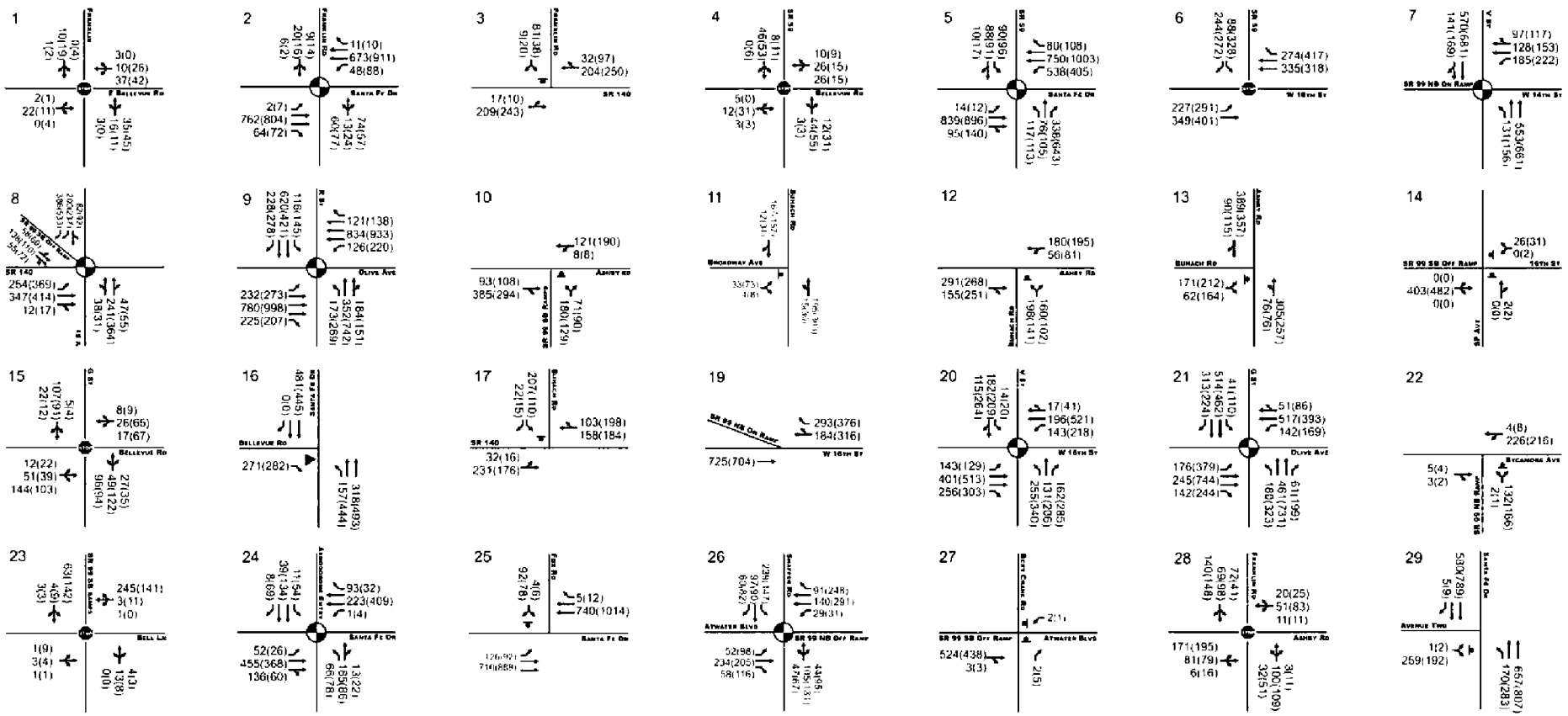
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ATWATER-MERCED EXPRESSWAY

Existing Conditions - Traffic Volumes

FIGURE 4.5-3

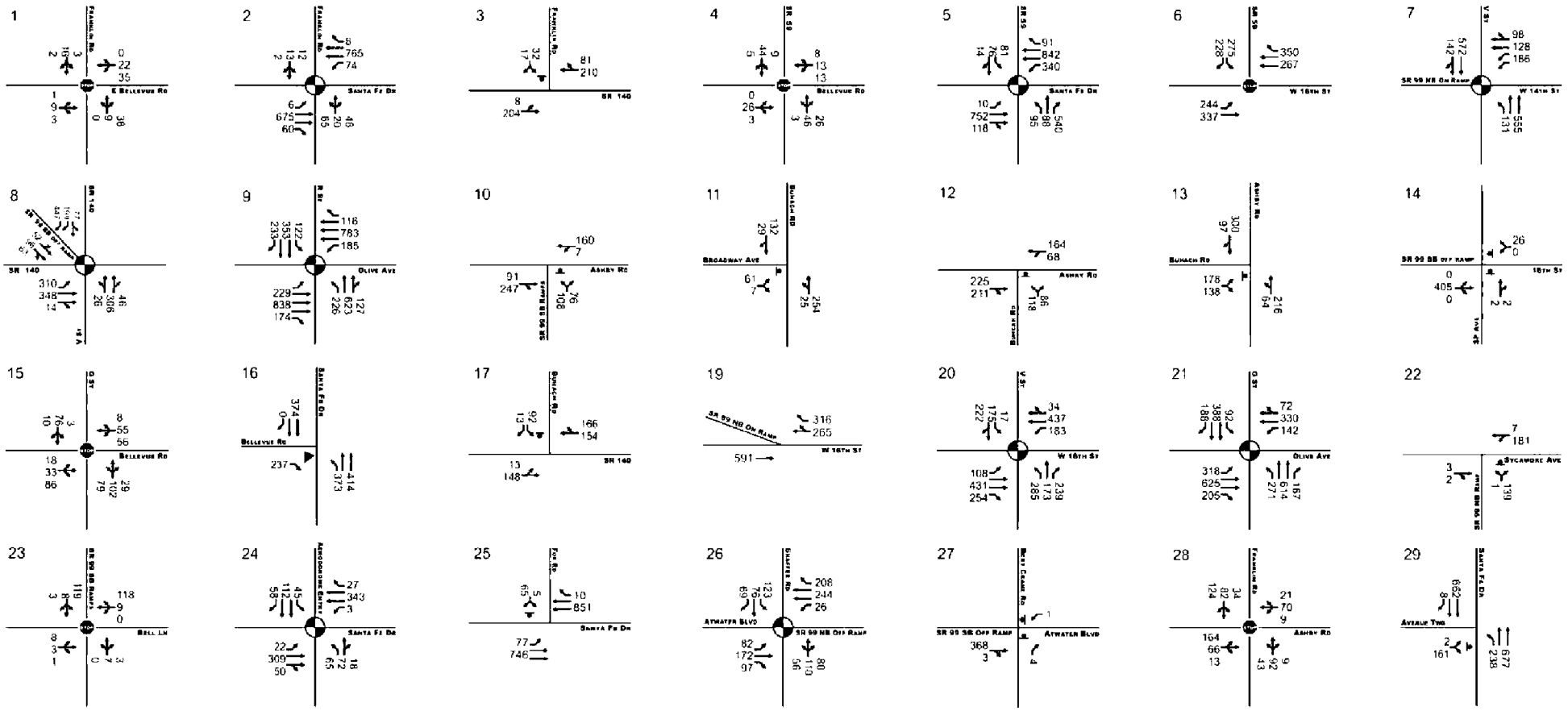
Source: Dowling Associates, Inc., February 2007



ATWATER-MERCED EXPRESSWAY

Existing Conditions - AM(PM) Weekday Peak Hour Traffic Volumes **FIGURE 4.5-4**

Source: Dowling Associates, Inc., February 2007



ATWATER-MERCED EXPRESSWAY

Existing Conditions - Weekend Midday Peak Hour Traffic Volumes

FIGURE 4.5-5

Source: Dowling Associates, Inc., February 2007

Level of Service at Intersections

Under existing conditions, five signalized and three non-signalized intersections within the study area are operating at LOS E or worse conditions. During Peak times, motorists trying to get through these intersections may experience delays of more than ten minutes. The intersections operating at LOS E or worse (considered failing LOS) are described below.

Intersection #5 (Santa Fe Drive and SR 59) – Both the westbound (WB) and eastbound (EB) approaches to Santa Fe Drive and the southbound (SB) approach on Santa Fe Drive to SR 59 experience significant delays during both the AM and PM weekday peak hours. Both WB and SB left turning movements operate at LOS F in the PM peak hour. Heavy delays of more than three minutes occur on the SB SR 59 approach during the PM peak hour. During peak month conditions, the SR 59 northbound (NB) right turning movement also operates at LOS F.

Intersection #8 (V Street and SR 99 SB-Ramps/SR 140) – The SR 140 EB left turn movement experiences one minute delays during the AM/PM peak hour, operating at LOS E.

Intersection #9 (Olive Street and R Street) – This intersection operates at LOS E due to heavy left turning movements on each approach during the PM peak hour.

Intersection #12 (Ashby Road and Buhach Road) – The Buhach NB approach experiences heavy delay with an estimated length of queue of 8 to 10 vehicles and delay of one minute (LOS E) during the AM peak hour.

Intersection #13 (Ashby Road and Buhach Road North) – The Ashby EB approach experiences heavy delay with an estimated length of queue of 18 vehicles with two+ minutes (LOS F) of delay during the PM peak hour.

Intersection #17 (SR 140 and Buhach) – The Buhach SB approach experiences heavy delay with an estimated length of queue of 7 vehicles and delays of 39+ seconds during the PM peak hour (Peak Month only).

Intersection #20 (16 Street and V Street) – Each approach and most turning movements experience delays in the LOS E/F range at this intersection. The 16th Street WB left turning movement experiences delays of seven to ten minutes and the V Street SB through-right movement experiences delays of seven to eight minutes.

Intersection #21 (Olive Street and G Street) – The turning movements at this intersection responsible for the longest delays are the Olive Street EB left turn and the G Street NB left turning movements both of which operate at LOS F during the PM peak hour with delays ranging between 1 and 2 minutes).

Table 4.5-9 shows the average level of service at all study area intersections under existing conditions.

Table 4.5-9 Existing Conditions Intersection Level of Service Results

No.	Intersection	Control	Movement	Existing Weekday AM Peak Hour		Existing Weekday PM Peak Hour		Existing Weekend Midday Peak Hour		Existing Weekday Peak Month AM Peak Hour		Existing Weekday Peak Month PM Peak Hour	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Franklin Road and Bellevue Road	4-way Stop	Average	7.3	A	7.3	A	7.2	A	7.3	A	7.4	A
2	Franklin Road and Santa Fe Drive	Signal	Average	8.7	A	12.1	B	11.0	B	8.9	A	12.8	B
3	Franklin Road and SR 140	1-way Stop	Eastbound Thru-LT	0.7	A	0.4	A	0.4	A	0.7	A	0.4	A
			Southbound Approach	13.5	B	13.0	B	12.0	B	14.0	B	13.7	B
4	Bellevue Road and SR 59	4-way Stop	Average	7.5	A	7.5	A	7.4	A	7.5	A	7.6	A
5	Santa Fe Drive and SR 59	Signal	Average	52.9	D	45.3	D	35.1	D	66.8	D	55.0	D
6	16th Street and SR 59	3-way Stop	Eastbound Approach	12.4	B	21.2	C	15.8	C	13.2	B	28.4	D
			Westbound Approach	8.0	A	9.1	A	8.3	A	8.2	A	9.8	A
			Southbound Approach	8.0	A	13.8	B	11.8	B	9.1	A	15.9	C
7	V Street and SR 99 NB Ramps	Signal	Average	17.2	B	19.1	B	17.1	B	17.8	B	19.4	B
8	V Street and SR 99 SB Ramps/SR 140	Signal	Average	46.0	D	43.8	D	39.0	D	49.9	D	49.6	D
9	Olive Street and R Street	Signal	Average	33.7	C	42.7	D	38.4	D	34.9	C	47.9	D
10	Ashby Road and SR 99 SB off ramp	1-way Stop	Westbound Approach	0.5	A	0.4	A	0.4	A	0.5	A	0.3	A
			Northbound Approach	20.7	C	15.2	C	13.0	B	23.2	C	16.0	C
11	Buhach Road/SR 99 NB Ramp and	1-way Stop	Eastbound Approach	11.5	B	14.1	B	12.6	B	11.7	B	14.7	B

Table 4.5-9 *continued*

No.	Intersection	Control	Movement	Existing Weekday AM Peak Hour		Existing Weekday PM Peak Hour		Existing Weekend Midday Peak Hour		Existing Weekday Peak Month AM Peak Hour		Existing Weekday Peak Month PM Peak Hour	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
	Broadway		Northbound Approach	0.6	A	0.9	A	0.8	A	0.7	A	0.9	A
12	**Ashby Road and Buhach Road**	**1-way Stop**	Westbound Approach	2.2	A	2.8	A	2.7	A	2.3	A	2.9	A
			Northbound Approach	**41.8**	**E**	29.1	D	18.9	C	**56.3**	**F**	35.0	D
13	**Ashby Road and Buhach Road (North)**	**1-way Stop**	Eastbound Approach	**46.9**	**E**	**106.3**	**F**	35.0	D	**75.7**	**F**	**151.8**	**F**
			Northbound Approach	2.3	A	2.4	A	2.3	A	2.4	A	2.5	A
14	SP Avenue and SR 99 SB Ramp	2-way Stop	Northbound Approach	10.8	B	11.4	B	10.9	B	11.0	B	11.8	B
			Westbound Approach	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
15	Bellevue Road and G Street	4-way Stop	Average	10.5	B	11.1	B	9.8	A	10.9	B	11.6	B
16	Santa Fe Drive and Bellevue Road	1-way Yield [1]	Eastbound Approach	14.5	B	13.3	B	11.8	B	15.4	C	13.9	B
			Northbound LT	9.8	A	11.4	B	10.0	A	10.0	A	12.0	B
17	**SR 140 and Buhach Road**	**1-way Stop**	Eastbound Approach	1.3	A	0.8	A	0.8	A	1.4	A	0.9	A
			Southbound Approach	31.4	D	14.8	B	12.9	B	**39.1**	**E**	15.6	C
19	16th Street and SR 99 NB Ramp	Free	-					N/A[b]					
20	**16th Street and V Street**	**Signal**	Average	45.1	D	195.4	**F**	**138.3**	**F**	**46.9**	D	**216.3**	**F**
21	Olive Avenue and G Street	Signal	Average	39.0	D	47.1	D	36.8	D	43.6	D	52.4	D
22	Applegate Road and SR 99 NB	1-way Stop	Westbound Approach	7.5	A	7.4	A	7.3	A	7.6	A	7.4	A

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Table 4.5-9 *continued*

No.	Intersection	Control	Movement	Existing Weekday AM Peak Hour		Existing Weekday PM Peak Hour		Existing Weekend Midday Peak Hour		Existing Weekday Peak Month AM Peak Hour		Existing Weekday Peak Month PM Peak Hour	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
	Ramps		Northbound Approach	9.0	A	9.1	A	8.9	A	9.0	A	9.1	A
23	Applegate Road and SR 99 SB Ramps	4-way Stop	Average	8.2	A	8.3	A	7.9	A	8.3	A	8.4	A
24	Santa Fe Drive and Buhach Road	Signal	Average	21.5	C	21.2	C	20.1	C	21.7	C	21.0	C
25	Fox Road and Santa Fe Drive	1-way Stop	Eastbound LT	10.8	B	11.9	B	10.6	B	11.2	B	12.5	B
			Southbound Approach	14.3	B	17.4	C	14.6	B	14.9	B	18.5	C
26	AtwaterBoulevard-SR 99 NB Ramp and Shaffer Road	Signal	Average	28.9	C	28.1	C	26.0	C	29.6	C	28.9	C
27	Atwater Boulevard and SR 99 SB Ramp	2-way Stop	Northbound RT	13.0	B	11.3	B	10.6	B	13.3	B	11.5	B
			Southbound Thru	14.6	B	12.5	B	11.8	B	15.1	C	12.7	B
28	Franklin Road and SR 99 NB Ramp	4-way Stop	Average	12.4	B	14.0	B	11.4	B	13.1	B	15.3	C
29	Avenue Two and Santa Fe Drive	1-way Stop	Eastbound Approach	21.3	C	18.2	C	14.6	B	24.2	C	19.9	C
			Northbound LT	10.8	B	13.5	B	11.3	B	11.2	B	14.5	B

Note: **Bold text** indicates intersections operating at failing level of service.
[a] Analysis assumes stop controlled on EB, approach the intersection approach is currently signed as yield controlled approach
[b] Two of the 29 study area intersection locations, Intersection 18 and 19, were not included in the LOS analysis. Intersection 18 was found to be unacceptable for inclusion in the study and Intersection 19 had no traffic control or conflicts that would result in production of an LOS.
Source: Dowling & Associates, Inc., 2007.

Level of Service on Highways

RURAL TWO-LANE HIGHWAY LOS

The two lane rural highways and roads in the study area include SR 59, SR 140, Bellevue Road, Franklin Road, Buhach Road, and Fox Road.

The AM and PM weekday peak hours LOS on roadway segment 9 (SR 59 between 16th Avenue and Olive Avenue) and segment 10 (SR 59 between 16th Street and Yosemite Avenue) operates at LOS E (considered failing LOS). Segment 7 (SR 140 between Buhach Road and Franklin Road) and Segment 13 (Buhach Road between Avenue Two and Ashby Road) both operate at LOS C during the AM and PM peak hours. During the weekday AM and PM peak hours, Segment 8 (SR 140 between Buhach Road and West Road) operates in the LOS C/B range. All other two-lane highway segments operate in the LOS A to B range during the weekday peak hours. **Table 4.5-10** shows the LOS results for this analysis.

MULTI-LANE HIGHWAY LOS

The multi-land highway LOS methodology was used to estimate level of service for Santa Fe Drive and Olive Street as their operating characteristics are similar to multi-lane highways.

Results indicate that Segment 6 (SR 59/16th Street, between V Street and SR 59), operates at LOS B during both the weekday AM and PM peak hours. All other multi-lane highway segments analyzed operate at LOS A during all periods. **Table 4.5-11** presents the results of the multi-lane highway LOS analysis.

SR 99 BASIC FREEWAY LEVEL OF SERVICE RESULTS

Results indicate that SR 99 operates at LOS C in both directions for all analysis periods examined, excluding the segment between Franklin and Buhach, which operates at LOS D during the PM peak hour based on existing peak month conditions. **Table 4.5-12** presents the basic freeway LOS analysis results for SR 99.

SR 99 MERGE-DIVERGE LEVEL OF SERVICE RESULTS

Practically all sections of SR 99 generally operate in the LOS C range for all analysis periods. Exceptions include both directions of 16th Street On- and Off- Ramps and the Buhach Road On- and Off-Ramps which operate at LOS D during the PM peak hour, and the northbound Franklin Off-Ramp which operates at LOS E (considered failing LOS) and LOS D during the PM peak hour and weekend midday peak hour respectively.

Table 4.5-10 Existing Conditions – Peak Month Two-Lane Highway Segment LOS Results

Existing Peak Month Two-Lane Highway Segment Levels of Service											
		Existing Peak Month AM Peak Hour					Existing Peak Month PM Peak Hour				
No.	Highway Segment	Vol[a]	PTSF[b]	ATS[c]	V/C[d]	LOS[e]	Vol	PTSF	ATS	V/C	LOS
1.	Bellevue Road Between G Street – SR 59	467	47.6%	51.4	0.23	B	354	32.3%	53.6	0.14	B
2.	Bellevue Road Between SR 59 - Franklin Road	290	31.5%	53.7	0.14	B	230	24.1%	54.7	0.10	B
7.	SR 140 Between Buhach Road - Franklin Road	571	49.8%	45.8	0.25	C	607	44.5%	46.7	0.21	C
8.	SR 140 Between Franklin Road - West	503	44.6%	51.2	0.21	B	668	50.4%	50.2	0.25	C
9.	**SR 59 Between 16th – Olive Avenue**	**1,293**	**75.0%**	**28.8**	**0.50**	**E**	**1,522**	**75.9%**	**28.5**	**0.51**	**E**
10.	**SR 59 Between Olive Avenue - Yosemite Avenue**	**415**	**36.4%**	**38.1**	**0.17**	**E**	**489**	**38.3%**	**38.0**	**0.18**	**E**
11.	Franklin Road Between Bellevue Road - Santa Fe Drive	218	21.1%	55.2	0.08	A	166	15.0%	55.7	0.06	A
12.	Fox Road Between Bellevue Road - Santa Fe Drive	158	16.5%	55.5	0.05	A	136	15.3%	55.7	0.05	A
13.	Buhach Road Between Avenue Two – Ashby Road	1,077	64.4%	47.5	0.37	C	951	59.8%	48.6	0.32	C
14.	Buhach Road Between Elliot – SR 140	325	27.5%	53.6	0.11	B	405	32.5%	53.0	0.14	B
15.	Franklin Road Between SR 99 – SR 140	208	19.9%	55.3	0.07	A	221	19.6%	55.2	0.08	A
16.	Franklin Road Between Santa Fe Drive - Ashby Road	490	37.7%	50.6	0.17	B	439	34.5%	51.1	0.15	B
17.	SR 59 n/o Bellevue Road	335	28.6%	54.0	0.13	B	312	26.3%	54.3	0.12	B

Notes: All Segments analyzed as Class I facilities.
[a] Vol = Two way hourly volume, vehicles per hour.
[b] PTSF = Percent Time Spent Following.
[c] ATS = Average Travel Speed, miles per hour.
[d] V/C = Volume to Capacity ratio.
[e] LOS = Level of Service based on Class I two-lane highway.
Source: Dowling Associates, Inc., 2007.

Table 4.5-11 Existing Conditions – Peak Month Multi-Lane Highway Segment LOS Results

Existing Peak Month Multi-Lane Highway Segment Levels of Service								
			Existing Peak Month AM Peak Hour			Existing Peak Month PM Peak Hour		
No.	Highway Segment	Direction	Vp[a]	D[b]	LOS[c]	Vp	D	LOS
3.	Santa Fe Drive Between SR 59 – Franklin Road FFS = 60 mph 4-Lanes	EB	306	5.2	A	542	9.3	A
		WB	565	9.9	A	535	9.4	A
4.	Santa Fe Drive Between Franklin Road - Buhach Road FFS = 60 mph 4-Lanes	NB	377	6.5	A	524	9.0	A
		SB	488	8.4	A	427	7.3	A
5.	Olive Avenue Between Austin Street – SR 59 FFS = 50 mph 4-Lanes	EB	487	10.3	A	464	9.8	A
		WB	350	7.4	A	482	10.2	A
6.	16th Street (SR 59) Between V Street – SR 59 FFS = 55 mph 4-Lanes	EB	325	6.4	A	624	12.3	B
		WB	323	6.4	A	611	12.2	B

[a] Vp = Adjusted Flow Rate, pcphpl (passenger cars per hour per lane).
[b] D = Density, pc/mi/ln (passenger cars per mile per lane).
[c] LOS = Level of Service based on Class I multi-lane highway.
Source: Dowling Associates, Inc., 2007.

Table 4.5-12 Existing Conditions – Peak Month Basic Freeway Segment SR 99 LOS Results

SR 99 Segment		Existing Peak Month AM Peak		Existing Peak Month PM Peak		Existing Peak Month Weekend Peak	
From	To	Density (pc/mi/ln) [a]	LOS [b]	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
NB off to King Way	NB on from King Way	16.8	B	17.5	B	17.9	B
NB on from King Way	NB off to R St	20.5	C	22.8	C	21.8	C
NB off to R St	NB on from R St	17.6	B	20.0	C	19.0	C
NB on from R St	NB off to SR140/59	19.9	C	23.4	C	21.2	C
NB off to SR140/59	NB on from SR 59/J St	16.7	B	20.5	C	18.2	C
NB on from SR 59/J St	NB on from 16th St	19.3	C	24.0	C	21.6	C
NB on from 16th St	NB off to Franklin Rd	23.7	C	30.7	D	26.3	D
NB off to Franklin Rd	NB on from Franklin Rd	22.2	C	28.1	D	24.6	C
NB on from Franklin Rd	NB off to Buhach Rd	23.4	C	29.3	D	25.3	C
NB off to Buhach Rd	NB on from Buhach Rd	21.1	C	25.1	C	22.6	C
NB on from Buhach Rd	NB off to Atwater Rd	22.2	C	26.4	D	23.3	C
NB off to Atwater Rd	NB off to Applegate Rd	19.0	C	20.7	C	19.8	C
NB off to Applegate Rd	NB on from Applegate Rd	18.0	B	19.3	C	18.8	C
NB on from Applegate Rd	NB on from Atwater Rd	19.4	C	20.8	C	20.2	C
SB off to Atwater Blvd	SB off to Applegate Rd	17.1	B	21.3	C	21.5	C
SB off to Applegate Rd	SB on from Applegate Rd	16.5	B	20.6	C	19.0	C
SB on from Applegate Rd	SB on from Atwater Blvd	16.5	B	20.6	C	19.0	C
SB on from Atwater Blvd	SB off to Buhach Rd	21.1	C	24.5	C	22.8	C
SB off to Buhach Rd	SB on from Buhach Rd	19.9	C	23.0	C	21.7	C
SB on from Buhach Rd	SB off to 16th Street	22.9	C	25.3	C	23.8	C
SB off to 16th St	SB on from 16th St	15.4	B	18.4	C	18.9	C
SB on from 16th St	SB off to SR 59/140	16.7	B	19.2	C	19.4	C
SB off to SR 59/140	SB on from SR140/59	15.1	B	17.5	B	18.0	B
SB on from SR140/59	SB off to R St	17.8	B	21.8	C	21.8	C
SB off to R St	SB on from R St	15.3	B	19.4	C	19.6	C
SB on from R St	SB off to King Way	18.3	C	23.5	C	24.2	C
SB off to King Way	SB on from SR 59/J St	14.8	B	20.3	C	20.8	C

[a] pc/mi/ln = Density expressed in passenger cars per mile per lane.
[b] LOS = Level of Service is based on density as described in the Basic Freeway Segments, Chapter 23, HCM 2000.
Source: Dowling Associates, Inc., 2007.

4.5.3 REGULATORY SETTING

Merced County and its municipalities maintain circulation elements as part of their general plans. These circulation elements establish the service standards for area roadways as well as each community's vision of the future roadway network. The following section discusses the applicable policies and goals from the circulation elements of the City of Atwater and Merced County General Plans and the Merced County Association of Governments 2007 Regional Transportation Plan.

CITY OF ATWATER GENERAL PLAN

Policy CIRC-1.1 Establish and maintain a minimum LOS of D for all arterial and collector streets within the City.

Policy CIRC-1.3 Design roadway improvements and evaluate development projects using established LOS standards.

Policy CIRC-1.4 Develop the City's roadway system in conformance with the planned roadway system shown on the Circulation Plan and the City's adopted cross section standards.

Policy CIRC-2.2 Provide "fair share" City funding for regional transportation improvements at a level equal to the contribution of Atwater-generated traffic on the roadway or intersection. Seek regional, state, or other funding for improvements whose need is generated by traffic originating outside Atwater.

Policy CIRC-3.2 Explore improvements to other roadways connecting the City with UC Merced.

Policy CIRC-6.3 Require new development to provide right of way and construct shelters for bus stops as determined to be necessary by the City of Atwater and the Merced County Transit.

MERCED COUNTY GENERAL PLAN

GOAL 1: A Road system which provides free movement of vehicles throughout the County.

Policy 2 The acceptable level-of-service for roadways located within rural areas of the County shall be LOS "C" or better.

Policy 3 The acceptable level-of-service for roadways located within urban growth areas such as Highway Interchange Centers (HICs), Specific Urban Development Plans (SUDPs) of unincorporated areas, or Rural Residential Centers (RRCs), shall be LOS "D" or better during peak traffic periods.[1]

Policy 4 LOS "D" is acceptable for roadways located outside urban growth areas if the roadway services as a connector between urban growth areas.

[1] **Modified** Alternative 1B of the AME project passes through the Castle Airport & Aviation Development Center, a SUDP within the City of Atwater.

Policy 5 LOS "E" and worse may be allowed on a minor component of the circulation system (such as a left turn movement from a local roadway) if a major component of the circulation system (such as a through movement on a collector or arterial roadway) would be significantly compromised in the process of improving the level-of-service of the minor component.

Policy 7 Right-of-way dedication and roadway improvements shall be required with the approval of land use entitlements to offset circulation impacts resulting from the typical occupancy of such entitlement.

Policy 11 Road rights-of-way and improvements shall be coordinated with incorporated cities and with adjacent counties to ensure compatibility

2007 REGIONAL TRANSPORTATION PLAN FOR MERCED COUNTY

As planning agency for the Merced County area, the Merced County Association of Governments is responsible for producing a Regional Transportation Plan. The following objectives and associated policies are included in the Regional Transportation Plan

Objective 1.1. Maintain a Level of Service of D on all regionally significant roads.

Policy 1.1.1 Fund and implement the projects identified on the Tier 1 priority list in the Action Element of the RTP.[2]

Objective 1.3 Use the existing street and road system in the most efficient possible manner to improve local circulation.

Policy 1.3.1 Maintain street and road system for vehicle travel, transit services, bicycle travel, and pedestrians.

In addition to motor vehicle traffic, the Regional Transportation Plan (RTP) also addresses bicycle transportation. The following goal applies to the AME project.

> The Atwater and Merced Bicycle Plan proposes to create a regional bikeway system connecting the City of Merced, the City of Atwater and the University of California at Merced community, while completing and interconnecting bikeways within the two cities.

POLICY CONSISTENCY ANALYSIS

The AME project is consistent with the above described policies. The AME is designed to enhance access to local, collector, arterial roads, and freeways in the area and to operate at LOS levels that conform to City of Atwater and Merced County standards. In addition, the AME project is accounted for in the Merced County RTP and the City of Atwater General Plan Transportation Element.

[2] The AME is included on the Tier 1 priority list in the Action Element of the Merced County RTP.

Further discussion of the consistency of the AME project with local and county policies can be found in **Section 4.1**, Consistency with Local Plans and Policies.

4.5.4 IMPACTS AND MITIGATION MEASURES

The following sections assess the environmental consequences that would result from implementation of the project alignments, project related impacts, and required measures to mitigate those impacts.

Thresholds of Significance

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have a significant effect on the environment. The project would have a significant traffic and circulation impact if it would:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.

c) Result in a change in air traffic patterns, including an increase in traffic levels or a change in location that results in substantial safety risks.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

e) Result in inadequate emergency access.

f) Result in inadequate parking capacity.

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

2030 No Build Conditions

The following sections discuss year 2030 No Build conditions. Year 2030 conditions include the implementation of already planned and funded intersection and roadway improvements in the interim period between existing conditions and the baseline year 2030. Improvements may include adding additional lanes to deficient roadways, signalization of non-signalized intersections, or channelization (i.e., adding new turning lanes to a roadway). Intersection LOS results are described in greater detail below. The length of queue results for all study area intersections and the AM and PM peak hour left turn storage requirements for each intersection are provided in the Traffic Study.

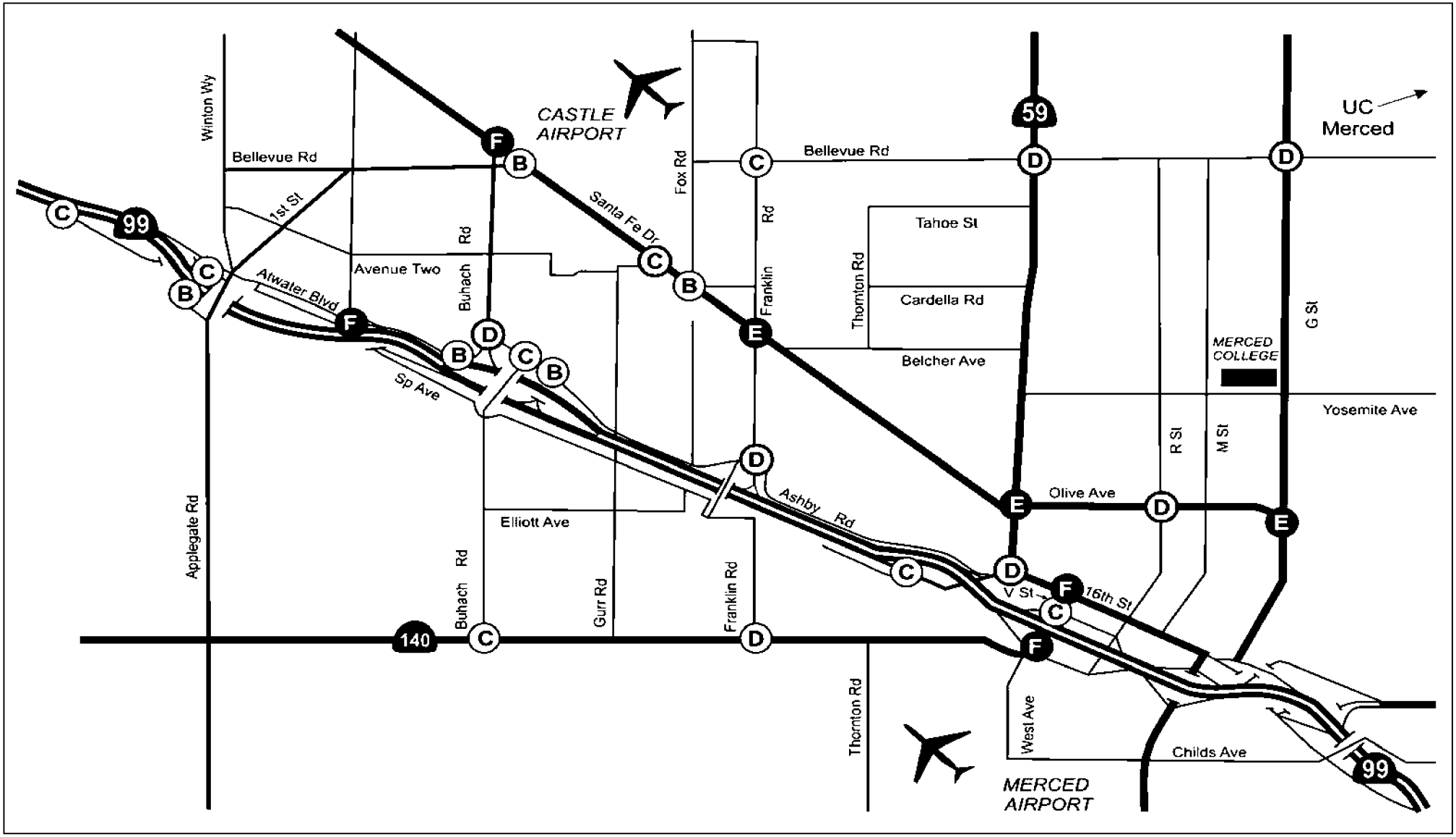
2030 No Build Conditions – Peak Hour Level of Service Results for Intersections

Table 4.5-13 shows LOS results for intersections under 2030 No Build conditions. **Figures 4.5-6** and **4.5-7** depict intersection LOS results under 2030 No Build conditions for AM and PM peak hours, respectively. Under 2030 No Build conditions, **24 of the 27** ~~12 of the 14~~ study area intersections operate at a failing LOS. **The 2030 LOS results assume that anticipated local roadway improvements shown in Table 4.13a would occur by 2030, independently from the AME project.**

2030 No Build Conditions – Peak Hour Level of Service Results for Major Roadways and Highways

Table 4.5-14 shows LOS results for two-lane highway segments under 2030 No Build conditions. Based on the 2030 No Build Conditions two-lane highway LOS analysis, four two-lane highway segments will operate at LOS E. Segment 7 (SR 140 between Buhach Road and Franklin Road) will operate at LOS E during both AM and PM peak hour conditions in 2030. Similarly, Segment 8 (SR 140 between Franklin Road and West Avenue) will begin to reach peak hour capacity by 2030. Based on projected interim and long-term traffic demand forecasts, additional capacity will be needed on this segment after 2015 but before 2030.

Peak hour traffic conditions will also degrade on Segment 10 (SR 59 between Olive Avenue and Yosemite). Peak hour operations will remain at LOS E between 2015 and 2030, but will significantly degrade in terms of average travel speed and percentage of time motorists spend following a queue of vehicles. In addition, without the AME, Segment 13 (Buhach Road between Avenue Two and Ashby Avenue) will operate at LOS E under 2030 No Build conditions.



LEGEND

- (X) Acceptable Average LOS - all movements acceptable
- (X) Acceptable Average LOS - one or several movements deficient
- (X) Deficient Average LOS

Not to Scale

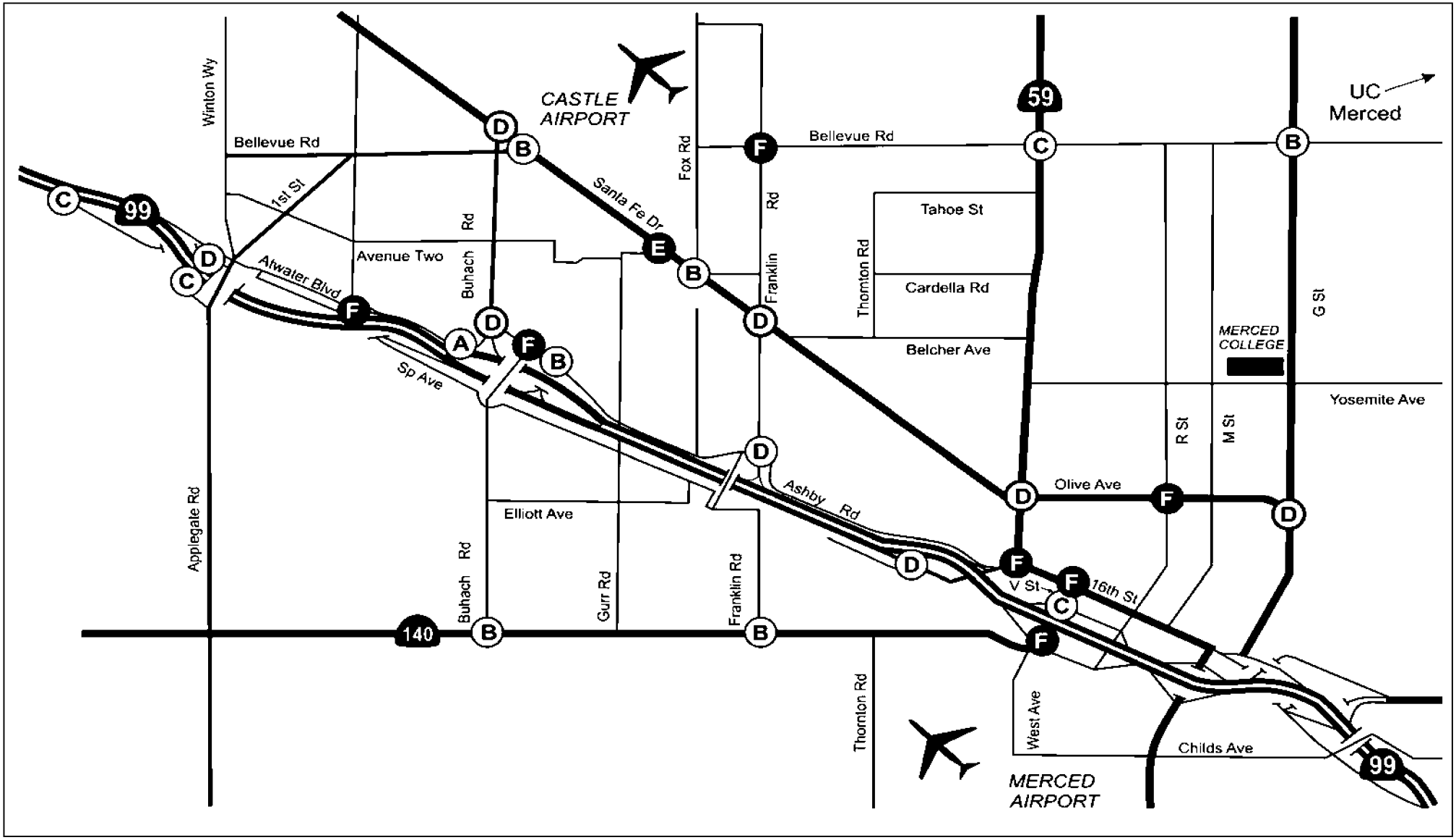
N

ATWATER-MERCED EXPRESSWAY

2030 No Build Conditions - AM Peak Hour Level Of Service

FIGURE 4.5-6

Source: Dowling Associates, Inc., February 2007



LEGEND

- (X) Acceptable Average LOS - all movements acceptable
- (X) Acceptable Average LOS - one or several movements deficient
- X Deficient Average LOS

Not to Scale

N

ATWATER-MERCED EXPRESSWAY

2030 No Build Conditions - PM Peak Hour Level Of Service

FIGURE 4.5-7

Source: Dowling Associates, Inc., February 2007

Table 4.5-13a. Existing Peak Month Intersection Deficiencies and Assumed Mitigation

No.	Intersection	Control	Movement	2030 Weekday AM Peak Hour		2030 Weekday PM Peak Hour	
				Delay	LOS	Delay	LOS
1	**Franklin Rd and Bellevue Rd**	4-way Stop	**Average**	15.1	C	**46.9**	**E**
2	**Franklin Rd and Santa Fe Dr**	Signal	**Average**	**64.9**	**E**	**61.9**	**E**
3	**Franklin Rd and SR 140**	1-way Stop	Eastbound Thru-LT	4.1	A	2.9	A
			Southbound Approach	**	**F**	**	**F**
4	**Bellevue Rd and SR 59**	**4-way Stop**	**Average**	**174.1**	**F**	**269.3**	**F**
5	**Santa Fe Dr and SR 59**	Signal	**Average**	**308.1**	**F**	**265**	**F**
6	**16th Street and SR 59**	3-way Stop	**Average**	**84.1**	**F**	**240**	**F**
7	V St and SR 99 NB Ramps	Signal	Average	20.2	C	21.9	C
8	**V St and SR 99 SB Ramps/SR140**	Signal	**Average**	**158.7**	**F**	**162.5**	**F**
9	**Olive St and R St**	Signal	**Average**	**106**	**F**	**155.8**	**F**
10	**Ashby and SR 99 SB off ramp**	1-way Stop	Westbound Approach	1.9	A	0.8	A
			Northbound Approach	**212.7**	**F**	**471.9**	**F**
11	**Buhach/SR 99 NB Ramp and Broadway**	1-way Stop	**Eastbound Approach**	**204.2**	**F**	**233.1**	**F**
			Northbound Approach	1.3	A	1.9	A
12	**Ashby and Buhach Rd**	1-way Stop	Westbound Approach	1.7	A	6.2	A
			Northbound Approach	**549.5**	**F**	**	**F**
13	**Ashby and Buhach Rd (North)**	1-way Stop	**Eastbound Approach**	**Err**	**F**	**Err**	**F**
			Northbound Approach	4.6	A	9	A
14	SP Avenue and SR 99 SB Ramp	2-way Stop	Northbound Approach	19.3	C	21.8	C
			Westbound Approach	20.6	C	26.2	D
15	***Bellevue Road and G Street***	4-way Stop	***Average***	***280.6***	***F***	***307.4***	***F***
16	***Santa Fe Drive and Bellevue Road***	*1-way Yield*	***Eastbound Approach***	29.5	D	***49.4***	***E***
			Northbound LT	24.6	C	29	D
17	***SR 140 and Buhach Road***	1-way Stop	Eastbound Approach	1.3	A	1.5	A
20	***16th Street and V Street***	Signal	***Southbound Approach***	**	***F***	**	***F***
			Average	***143.3***	***F***	***231.5***	***F***
21	***Olive Avenue and G Street***	Signal	***Average***	***135.7***	***F***	***115***	***F***

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No.	Intersection	Control	Movement	2030 Weekday AM Peak Hour		2030 Weekday PM Peak Hour	
				Delay	LOS	Delay	LOS
22	Applegate and SR 99 NB Ramps	1-way Stop	Westbound Approach	7	A	6.5	A
			Northbound Approach	16.9	C	26.8	D
23	***Applegate and SR 99 SB Ramps***	4-way Stop	***Average***	***46.5***	***E***	***75.7***	***F***
24	***Santa Fe Drive and Buhach Road***	*Signal*	***Average***	***152.8***	***F***	46.4	D
25	***Fox and Santa Fe Drive***	1-way Stop	Eastbound LT	31.1	D	32.5	D
			Southbound Approach	***60.4***	***F***	***278.7***	***F***
26	***Atwater Boulevard-SR 99 Ramp and Shaffer Road***	**Signal**	***Average***	***187.6***	***F***	***159.9***	***F***
27	Atwater Boulevard and SF 99 SB Ramp	2-way Stop	Northbound RT	13.4	B	14.6	B
			Southbound Thru	15.5	C	16.5	C
28	***Franklin Road and SR 99 NB Ramp***	**4-way Stop**	***Average***	***221.3***	***F***	***238.1***	***F***
29	***Avenue Two and Santa Fe Drive***	**1-way Stop**	***Eastbound Approach***	***53.4***	***F***	***479.7***	***F***
			Northbound LT	22.3	C	***41***	***E***

NOTE: Since bold text is used to indicate failing intersections, new text in and below Table 4.5-13 is shown in *underlined italics*.

* Only the widening of SR-59 is currently programmed

** Met Accident Warrant as a Two-Way Stop - County Improved Control to a 4-Way Stop - Signalization Assumed

*** Signalization Assumed based on projected LOS deficiency

Table 4.5-13 2030 No Build Conditions – Peak Hour Intersection Level of Service Results

No.	Intersection	Control	Movement	2030 Weekday AM Peak Hour		2030 Weekday PM Peak Hour	
				Delay	LOS	Delay	LOS
1	**Franklin Rd and Bellevue Rd**	4-way Stop	**Average**	15.1	C	**46.9**	**E**
2	**Franklin Rd and Santa Fe Dr**	Signal	**Average**	**64.9**	**E**	**61.9**	**E**
3	**Franklin Rd and SR 140**	1-way Stop	Eastbound Thru-LT	4.1	A	2.9	A
			Southbound Approach	**	**F**	**	**F**
4	**Bellevue Rd and SR 59**	4-way Stop	**Average**	**174.1**	**F**	**269.3**	**F**
5	**Santa Fe Dr and SR 59**	Signal	**Average**	**308.1**	**F**	**265**	**F**
6	**16th Street and SR 59**	3-way Stop	**Average**	**84.1**	**F**	**240**	**F**
7	V St and SR 99 NB Ramps	Signal	Average	20.2	C	21.9	C
8	**V St and SR 99 SB Ramps/SR140**	Signal	**Average**	**158.7**	**F**	**162.5**	**F**
9	**Olive St and R St**	Signal	**Average**	**106**	**F**	**155.8**	**F**
10	**Ashby and SR 99 SB off ramp**	1-way Stop	Westbound Approach	1.9	A	0.8	A
			Northbound Approach	**212.7**	**F**	**471.9**	**F**
11	**Buhach/SR 99 NB Ramp and Broadway**	1-way Stop	**Eastbound Approach**	**204.2**	**F**	**233.1**	**F**
			Northbound Approach	1.3	A	1.9	A
12	**Ashby and Buhach Rd**	1-way Stop	Westbound Approach	1.7	A	6.2	A
			Northbound Approach	**549.5**	**F**	**	**F**
13	**Ashby and Buhach Rd (North)**	1-way Stop	**Eastbound Approach**	**Err**	**F**	**Err**	**F**
			Northbound Approach	4.6	A	9	A
14	SP Avenue and SR 99 SB Ramp	2-way Stop	Northbound Approach	19.3	C	21.8	C
			Westbound Approach	20.6	C	26.2	D

Notes: Analysis assumes stop controlled on Eastbound Approach, approach is presently signed as a yield controlled.
Bold text indicates intersections operating at failing level of service.

Source: Dowling & Associates, Inc., 2007.

Table 4.5-14 2030 No Build Conditions – Six-Lane Roadway and Highway Segment LOS Results

		2030 Baseline AM Peak Hour					2030 Baseline PM Peak Hour				
No.	Highway Segment	Vol[a]	PTSF[b]	ATS[c]	V/C[d]	LOS[e]	Vol	PTSF	ATS	V/C	LOS
1	Bellevue Rd Btwn G St – SR 59	1,225	69.8%	46.5	0.43	D	1,055	64.5%	48.0	0.37	C
2	Bellevue Rd Btwn SR 59 – Franklin	1,095	65.7%	47.7	0.38	D	1,090	65.5%	47.7	0.38	C
7	**SR140 Btwn Buhach – Franklin**	**1,785**	**82.5%**	**36.5**	**0.62**	**E**	**1,995**	**85.4%**	**34.8**	**0.69**	**E**
8	**SR140 Btwn Franklin - West**	**2,245**	**88.8%**	**37.0**	**0.78**	**E**	**2,515**	**91.4%**	**34.7**	**0.88**	**E**
10	**SR 59 Btwn Olive – Yosemite**	**1,580**	**78.6%**	**28.6**	**0.56**	**E**	**1,725**	**81.5%**	**27.5**	**0.60**	**E**
11	Franklin Btwn Bellevue – Santa Fe	390	31.7%	53.7	0.14	B	430	33.9%	53.3	0.15	B
12	Fox Btwn Bellevue – Santa Fe	580	42.6%	51.9	0.20	B	640	45.9%	51.5	0.22	B
13	**Buhach Btwn Avenue Two - Ashby**	**1,540**	**77.0%**	**43.6**	**0.52**	**D**	**1,710**	**80.5%**	**42.2**	**0.58**	**E**
14	Buhach Btwn Elliot - SR 140	680	47.9%	50.6	0.23	B	750	51.2%	50.1	0.26	C
15	Franklin Btwn SR 99 – SR 140	510	38.8%	52.7	0.18	B	570	42.1%	52.2	0.20	B
16	Franklin Btwn Santa Fe – Ashby	790	53.1%	48.2	0.27	C	880	57.0%	47.4	0.30	C
17	SR 59 n/o Bellevue	910	58.7%	49.2	0.32	C	1,010	62.3%	48.4	0.35	C

Notes: All Segments analyzed as Class I facilities
Bold text indicates intersections operating at failing level of service.
[a] Vol = Two way hourly volume, vehicles per hour
[b] PTSF = Percent Time Spent Following
[c] ATS = Average Travel Speed, miles per hour
[d] V/C = Volume to Capacity ratio
[e] LOS = Level of Service based on Class I two lane highway.
Source: Dowling Associates, Inc., 2007.

2030 No Build Conditions – Peak Hour Level of Service Results for Multi-Lane Roadways and Highways

Table 4.5-15 shows LOS results for multi-lane highway segments under 2030 No Build conditions. All multi-lane highway segments within the study area will continue to operate at an acceptable LOS during the AM and PM peak hours in 2030.

Table 4.5-15 2030 No Build Conditions – Baseline Multi-Lane Roadway and Highway Segment LOS Results

2030 Baseline Peak Month Multi-Lane Highway Segment Levels of Service								
			2030 Peak Month AM Peak Hour			2030 Peak Month PM Peak Hour		
No.	Highway Segment	Direction	Vp[a]	D[b]	LOS[c]	Vp	D	LOS
3	Santa Fe Dr Btwn SR 59 – Franklin FFS = 60 mph 4 Lanes	EB	1,006	17.2	B	926	15.9	B
		WB	841	14.7	B	855	15.0	B
4	Santa Fe Dr Btwn Franklin - Buhach FFS = 60 mph 4 Lanes	NB	702	12.1	B	806	13.9	B
		SB	751	12.9	B	742	12.8	B
5	Olive Ave Btwn Austin St – SR 59 FFS = 50 mph 6 Lanes	EB	931	19.7	C	891	18.9	C
		WB	808	17.1	B	808	17.1	B
6	16th St (SR 59) Btwn V St – SR 59 FFS = 55 mph 4 Lanes	EB	828	16.3	B	1,181	23.2	C
		WB	826	16.5	B	1,251	25.0	C
9	SR 59 Btwn 16th St – Olive Ave. FFS = 55 mph 4 Lanes	NB	1,139	22.4	C	1,198	23.6	C
		SB	961	19.2	C	886	17.7	B

[a] Vp = Adjusted Flow Rate, pcphpl (passenger cars per hour per lane).
[b] D = Density, pc/mi/ln (passenger cars per mile per lane).
[c] LOS = Level of Service based on Class I multi-lane highway.
Source: Dowling Associates, Inc., 2007.

2030 No Build Conditions – Peak Hour Level of Service Results for Freeways

Table 4.5-16 shows LOS results for freeway segments under 2030 No Build conditions. By 2030, freeway mainline operations for practically the entire length of SR 99 within the study area will exceed peak hour capacity. Heavily congested traffic conditions are forecast to occur in both directions on SR 99 during both the AM and PM peak hours and will occur whether or not the AME is constructed. The widening of SR 99 from four to six lanes will be necessary to reduce congestion. Six of the 23 freeway segments will operate at LOS D under AM peak hour conditions and two of the 23 freeway segments will operate at LOS D under PM peak hour conditions. The remaining freeway segments will operate at LOS E or worse under both AM and PM peak hours.

Table 4.5-16 2030 No Build Conditions – Basic Freeway Segment LOS Results

SR 99 Segment (Two Through Lanes per Direction)		2030 No Build AM Peak			2030 No Build PM Peak		
From	To	Pk Hour Volume[a]	Density[b] (pc/mi/ln)[c]	LOS[d]	Pk Hour Volume	Density (pc/mi/ln)	LOS
NB off to King Way	NB on from King Way	4,280	44.8	E	3,750	31.9	D
NB on from King Way	NB off to R St	4,980	> 45.0	F(0)	4,510	> 45.0	F(0)
NB off to R St	NB on from SR 59/J St	4,480	> 45.0	F(0)	3,960	38.1	E
NB on from SR 59/J St	NB on from 16th St	5,010	> 45.0	F(0)	4,540	> 45.0	F(0)
NB on from 16th St	NB off to Franklin St	5,660	> 45.0	F(1)	5,250	> 45.0	F(0)
NB off to Franklin St	NB on from Franklin St	5,300	> 45.0	F(0)	4,850	> 45.0	F(0)
NB on from Franklin St	NB off to Buhach Rd	5,570	> 45.0	F(1)	5,140	> 45.0	F(0)
NB off to Buhach Rd	NB on from Buhach Rd	4,940	> 45.0	F(0)	4,440	> 45.0	F(0)
NB on from Buhach Rd	NB off to Atwater Blvd	5,530	> 45.0	F(1)	5,090	> 45.0	F(0)
NB off to Atwater Blvd	NB off to Applegate Rd	4,730	> 45.0	F(0)	4,130	40.1	E
NB off to Applegate Rd	NB on from Applegate Rd	4,220	42.1	E	3,560	30.8	D
NB on from Applegate Rd	NB on from Atwater Blvd	4,530	> 45.0	F(0)	3,900	35.7	E
SB off to Atwater Blvd	SB off to Applegate Rd	3,600	31.3	D	5,020	> 45.0	F(0)
SB off to Applegate Rd	SB on from Applegate Rd	3,170	26.6	D	4,540	> 45.0	F(0)
SB on from Applegate Rd	SB on from Atwater Blvd	3,610	31.4	D	5,010	> 45.0	F(0)
SB on from Atwater Blvd	SB off to Buhach Rd	4,450	> 45.0	F(0)	5,930	> 45.0	F(2)
SB off to Buhach Rd	SB on from Buhach Rd	4,010	37.6	E	5,440	> 45.0	F(1)
SB on from Buhach Rd	SB off to 16th St	4,510	> 45.0	F(0)	5,990	> 45.0	F(2)
SB off to 16th St	SB on from 16th St	3,570	31.9	D	4,950	> 45.0	F(0)
SB on from 16th St	SB off to SR 59/140	3,940	37.4	E	5,360	> 45.0	F(1)
SB off to SR 59/140	SB on from R St	3,580	32.3	D	4,960	> 45.0	F(0)
SB on from R St	SB off to King Way	4,150	41.9	E	5,580	> 45.0	F(1)
SB off to King Way	SB on from SR 59/J St	3,520	31.2	D	4,880	> 45.0	F(0)

Note: **Bold text** indicates intersections operating at failing level of service.
[a] Peak Hour Volume (prior to passenger car equivalency adjustment)
[b] LOS = Level of Service is based on density as described in the Basic Freeway Segments, Chapter 23, HCM 2000.
[c] pc/mi/ln = Density expressed in passenger cars per mile per lane.
[d] Duration of LOS F: V/C >1.00-1.25 (less than an hour), >1.25-1.35 (1-hour), >1.35-1.45 (2-hours) >1.45 (3-hours). Capacity = 2,300 pcplpm Source: Southern California Association of Governments.

Source: Dowling Associates, Inc., 2007.

By 2030, approximately 65 percent of the deficient SR 99 segments analyzed will experience varying levels of congestion for periods of up to an hour. During the AM peak hour, the most critical segment will be between the Franklin Road and Buhach Road ramps, with varying levels of congestion will last for periods between one and two hours. During the PM peak hour, varying levels of congestion will occur for periods of more than two hours between the Franklin and 16th Street ramps.

Given that traffic levels on SR 99 will exceed capacity by 2030, it was not necessary to perform the merge-diverge ramp LOS analysis as ramp operations will be deficient as a result of the poor freeway operations within the study area.

2030 AME Project Conditions – Peak Hour Level of Service Results for Intersections

Table 4.5-17 shows LOS results for **both Alternative 1A and Modified Alternative 1B intersections.** ~~Alternative 1A and Table 4.5-18 shows LOS results for Alternative 1B~~. **Figures 4.5-8 and 4.5-9** show LOS for the AM and PM peak hours under 2030 AME Project conditions, respectively.

Implementation of the AME project would result in the creation of 10 new intersections. In assessing 2030 AME Project conditions, these ten intersections were included with the 27 study area intersections already analyzed. Under 2030 No Build conditions, 13 of 29 study area intersections are forecast to be deficient. A total of seven intersections would remain deficient under 2030 with AME project conditions.

Of the seven deficient intersections under 2030 with AME project conditions, six would also be deficient under 2030 No Build conditions; however, five of these intersections will experience improved operations (i.e., reduced delay) as a result of the AME. The one intersection that will experience delays as a result of the AME, Intersection #22 (Applegate Road and SR 99 NB-Ramp), will incur a left turn delay in the LOS E range with increased delay of approximately 21 seconds. Under 2030 No Build conditions, the intersection operates at LOS D.

2030 AME Project Conditions - Peak Hour Level of Service Results for Major Roadways and Highways

Table 4.5-18 shows LOS results for two-lane highway segments with implementation of the AME. Under 2030 AME project conditions, five highway segments; Segment 1 (Bellevue Road between G Street and SR 59), Segment 7 (SR 140 between Buhach Road and Franklin Road), Segment 8 (SR 140 between Franklin Road and West Street), Segment 10 (SR 59 between Olive Avenue and Yosemite Avenue), and Segment 19 (SR 140 between the AME and Buhach Road) operate at LOS E. In comparison, under 2030 No Build conditions, four highway segments; Segment 7 (SR 140 between Buhach Road and Franklin Road), Segment 8 (SR 140 between Franklin Road and West Street), Segment 10 (SR 59 between Olive Avenue and Yosemite Avenue), and Segment 13 (Buhach Road Between Avenue Two and Ashby Road) all operate at LOS E.

One segment, Segment 13, would experience improved LOS with the AME project. Under 2030 No Build conditions, Segment 13 operates at LOS D and E, during the AM and PM peak hours, respectively. In comparison, under 2030 AME project conditions LOS at Segment 13 improves, experiencing LOS C and D for the AM and PM peak hours, respectively.

One segment, Segment 1, would become deficient as a result of the AME project. The LOS on Segment 1 will drop from LOS D to LOS E as a result of the added traffic diverted onto Bellevue Road via the AME. Another segment, segment 19, will experience LOS E as a result of implementation of the AME.

Table 4.5-17 2030 AME Project Conditions – Peak Hour Intersection Level of Service Results

				2030 Alternative 1A Weekday			
				AM Peak Hour		PM Peak Hour	
No.	Intersection	Control	Movement	Delay	LOS	Delay	LOS
Conditions Under Both Alternative 1A & Modified Alternative 1B							
1	Franklin Rd and Bellevue Rd	Signal	Average	19.7	B	22.5	C
2	Franklin Rd and Santa Fe Dr	Signal	Average	36.5	D	40	D
3	Franklin Rd and SR140	Signal	Eastbound Thru-LT	37.8	D	20.2	C
			Eastbound LT	54.5	D	50.3	D
			Eastbound Thru	24	C	14	B
			Westbound Thru	51.7	D	28.3	C
			Westbound RT	11.9	B	7.8	A
			Southbound LT	52.5	D	35.1	D
			Southbound RT	24.7	C	28.5	C
4	Bellevue Rd and SR 59	Signal	Average	24.9	C	41.4	D
5	Santa Fe Dr and SR 59	Signal	Average	43.4	D	43.4	D
6	16th Street and SR 59	Signal	Average	32.7	C	26.4	C
7	V St and SR 99 NB Ramps	Signal	Average	28.1	C	23.7	C
8	V St and SR 99 SB Ramps/SR140	Signal	**Average**	**92.3**	**F**	**110.2**	**F**
9	Olive St and R St	Signal	**Average**	46.5	D	**99.7**	**F**
14	SP Avenue and SR 99 SB Ramp	2-way Stop	Northbound Approach	18.6	C	20.8	C
			Westbound Approach	19.8	C	24.8	C
15	Bellevue Rd and G St	Signal	Average	31.1	C	29.3	C
16	Santa Fe Dr and Bellevue Rd	Signal	Average	17.5	B	28.5	C
17	SR 140 and Buhach Rd	Signal	Average	12.8	B	10.3	B
19	16th St and SR 99 NB Ramp	Free	-		N/A		
20	16th St and V St	Signal	**Average**	**96**	**F**	**196.5**	**F**
21	Olive Ave and G St	Signal	**Average**	**64.2**	**E**	49.6	D
22	Applegate and SR 99 NB Ramps	1-way Stop	Westbound Approach	7.3	A	6.8	A
			Northbound Approach	22.8	C	**47.3**	**E**
23	Applegate and SR 99 SB Ramps	Signal	Average	14.5	B	19.3	B
24	Santa Fe Dr and Buhach Rd	Signal	**Average**	**145.6**	**F**	**58.1**	**E**

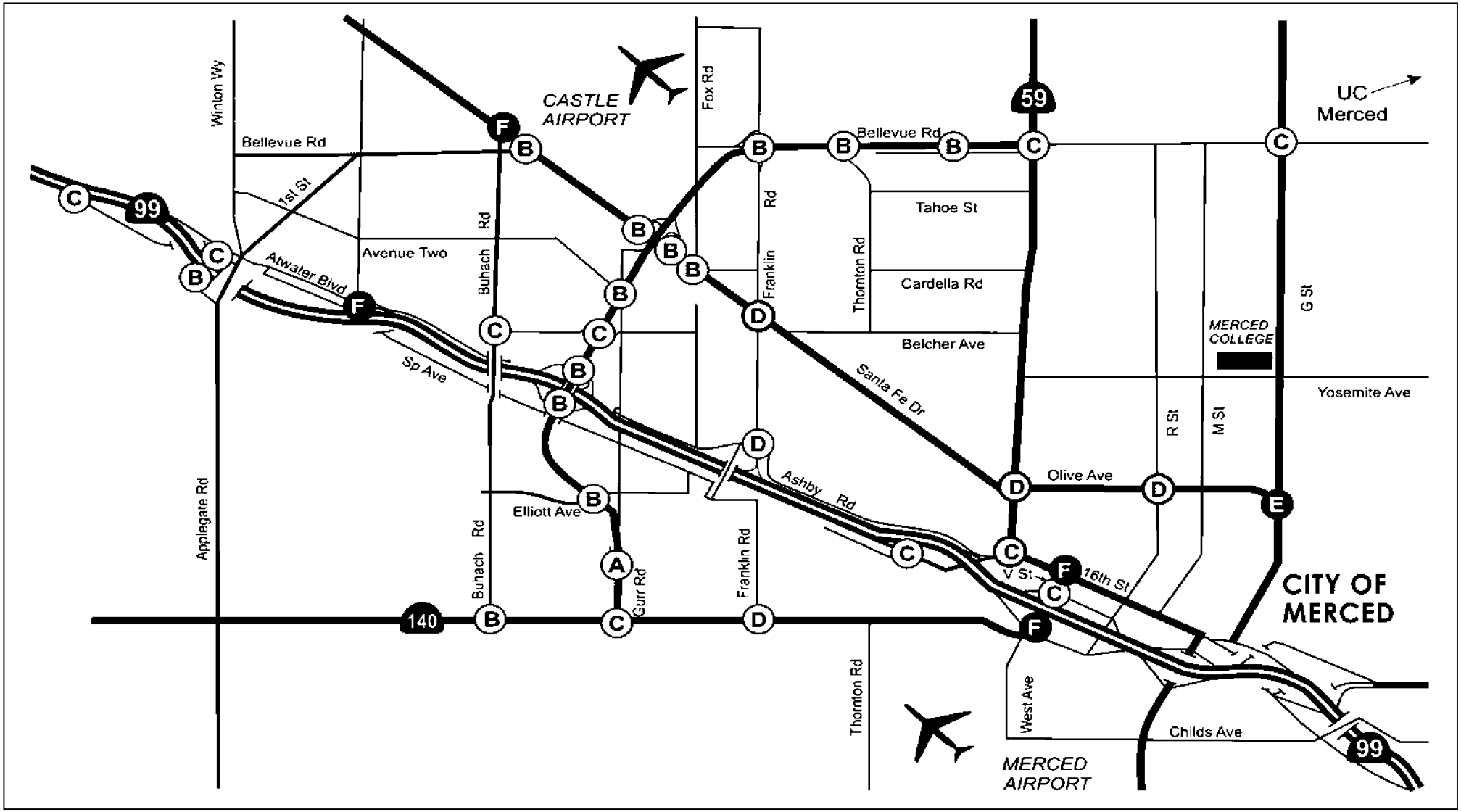
				2030 Alternative 1A Weekday			
				AM Peak Hour		PM Peak Hour	
No.	Intersection	Control	Movement	Delay	LOS	Delay	LOS
26	Atwater Blvd-SR 99 NB Ramp and Shaffer Rd	Signal	**Average**	**147.9**	**F**	**137.2**	**F**
27	Atwater Blvd and SR 99 SB Ramp	2-way Stop	Northbound RT	14.3	B	15.9	C
			Southbound Thru	16.7	C	18	C
28	Franklin Rd and SR 99 NB Ramp	Signal	Average	40.8	D	43.5	D
30	McSwain Rd & SR 140 /Gurr Rd	Signal	Average	28.9	C	34.1	C
31	Frontage Rd & SR 140	Signal	Average	4.2	A	10.1	B
32	Elliot Rd & SR140	Signal	Average	17.2	B	22.8	C
33	SR 99 SB ramp & SR 59/140	Signal	Average	12.5	B	11.4	B
34	SR 99 NB ramp & SR 59/140	Signal	Average	16.9	B	11.4	B
35	Belcher Ave & SR 59	Signal	Average	33.8	C	33.7	C
38	Santa Fe Dr & SR 59 SB Ramp	Signal	Average	19.4	B	14.7	B
39	SR 59 & Thornton Rd	Signal	Average	10.8	B	16.3	B
40	SR 59 & Frontage Rd	Signal	Average	10.6	B	18.1	B
41	Belcher Ave & Buhach Rd	Signal	Average	26.2	C	23.3	C
Conditions Under Alternative 1A							
25	Fox and Santa Fe Dr	Signal	Average	12	B	10.1	B
36	Avenue Two & SR 59	Signal	Average	17.7	B	20.3	C
37	Santa Fe Dr & SR 59 NB Ramp	Signal	Average	15.5	B	13.1	B
Conditions Under Modified Alternative 1B							
25	Fox and Santa Fe Dr	Signal	Average	9.7	A	8.9	A
29	Avenue **Two** and Santa Fe Drive	Signal	Average	~~7.4~~**10.9**	A	~~12.3~~**21.2**	B
36	**Avenue Two & Santa Fe Dr.**	**Signal**	**Average**	**30.4**	**C**	**35.5**	**C**
37	Santa Fe Dr & SR 59 NB Ramp	Signal	Average	15.5	B	13.3	B

Note: Analysis assumes stop controlled on Eastbound Approach, approach is presently signed as a yield controlled.

Two of the 29 study area intersection locations, Intersection 18 and 19, were not included in the LOS analysis. Intersection 18 was found to be unacceptable for inclusion in the study and Intersection 19 had no traffic control or conflicts that would result in production of an LOS.

Bold text indicates intersections operating at failing level of service.

Source: Dowling & Associates, Inc., 2007.

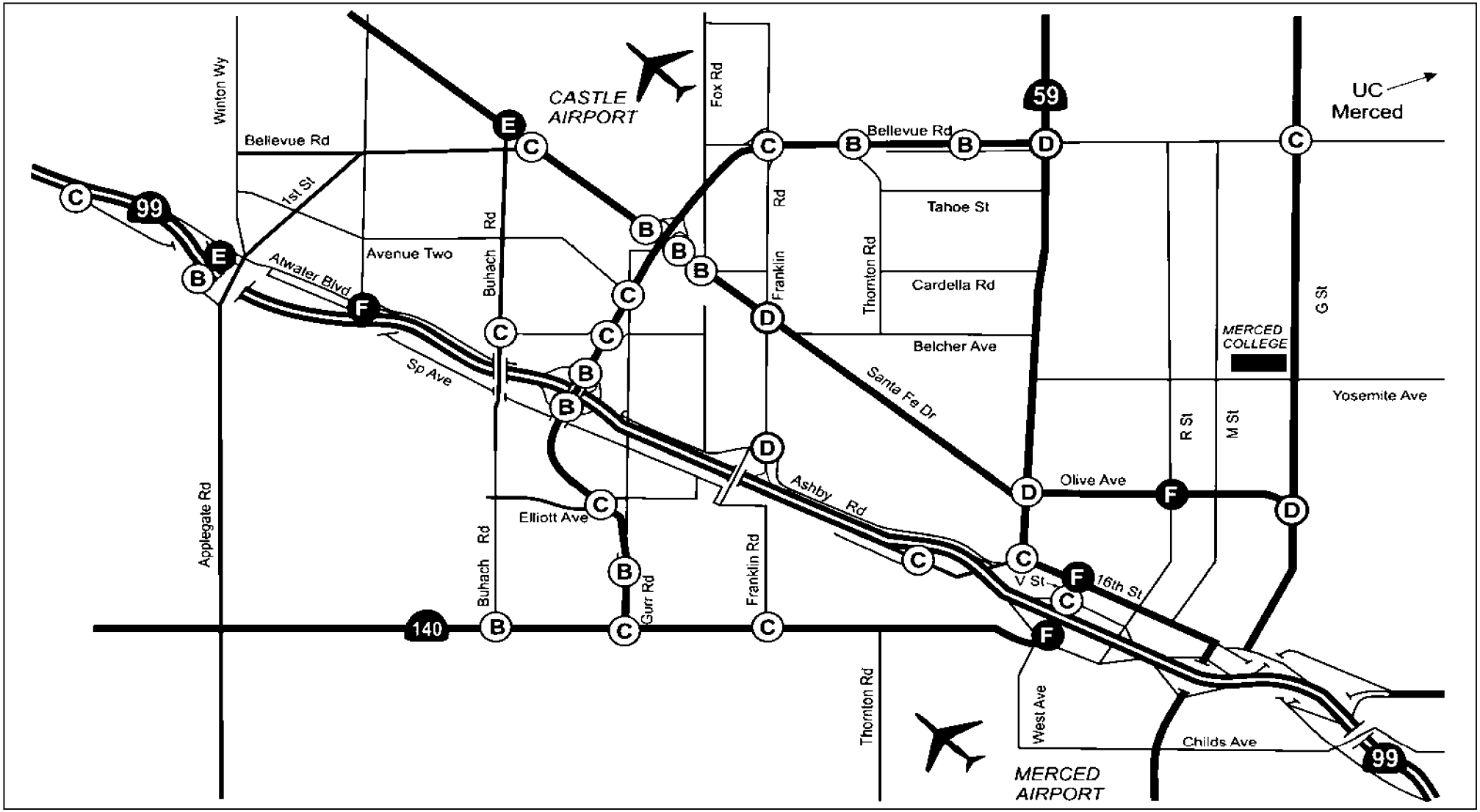


ATWATER-MERCED EXPRESSWAY

2030 AME Project Conditions - AM Peak Hour Level Of Service

FIGURE 4.5-8

Source: Dowling Associates, Inc., February 2007



ATWATER-MERCED EXPRESSWAY

2030 AME Project Conditions - PM Peak Hour Level Of Service

FIGURE 4.5-9

Source: Dowling Associates, Inc., February 2007

2030 AME Project Conditions – Peak Hour Level of Service Results for Major Roadways and Multi-Lane Highways

Table 4.5-19 shows LOS results for multi-lane highway segments with implementation of the AME. All multi-lane highway segments within the study area will continue to operate at an acceptable LOS during the AM and PM peak hours in 2030. In addition, the adjusted traffic flow rate on four highway segments, Segment 3 (Santa Fe Drive between SR 59 and Franklin Road), Segment 5 (Olive Avenue between Austin Street and SR 59), Segment 6 (16th Street between V Street and SR 59), and Segment 9 (SR 59 between 16th Street and Olive Avenue) would go down as a result of the AME, representing a better overall flow rate on area highways.

2030 AME Project Conditions - Peak Hour Level of Service Results for Freeways

Table 4.5-20 shows LOS results for freeway segments with implementation of the AME. Saturated traffic conditions are forecast to occur in both directions on SR 99 during both the AM and PM peak hours and would occur with or without the AME project. Five of the 25 freeway segments will operate at LOS D during the AM peak hour and one segment will operate at LOS D during the PM peak hour. The remaining freeway segments will operate at LOS E or F during both AM and PM peak hours.

Delay for traffic departing the SR-99 ramps will be higher with the AME which includes closure of the Buhach Road ramps. Delay at the Applegate Road and Atwater Boulevard interchanges during peak hours will increase as a result of the AME and Buhach ramp closures. LOS at Applegate/SR 99 NB Off-Ramp intersection is projected to drop from LOS D to E, adding an additional 20 seconds of delay. The less used Franklin Road ramps will be affected by the closure of the Buhach Road ramps, experiencing an increase of just over 25 percent in peak hour traffic on the ramps. Peak hour demand at the V Street ramps within the City of Merced will decrease as a result of the AME.

Widening SR 99 from four lanes to six lanes was examined. This roadway improvement is planned for in the Merced County 2004 RTP. Based on 2030 AME project conditions, widening SR 99 between the City of Merced and the City of Atwater will result in an additional 10 to 12,000 average daily trips (ADT) on SR 99 within the study area. This traffic will be diverted off of the two SR 99 parallel routes within the study area (Ashby Road and Santa Fe Drive). Daily traffic volumes on Santa Fe Drive are projected to drop between 1,200 and 2,700 vehicles while ADT is projected to drop by 1,400 to 5,500 vehicles on SR 140. Traffic on the AME will slightly increase between SR 99 and Santa Fe Drive (450 ADT), but will decrease south of SR 99 and north of Santa Fe Drive. These findings indicate that the AME design assumptions and study area mitigation recommendations would continue to hold if the SR 99 widening improvement was included in the analysis. One possible exception however would be the recommendation to extend the widening of SR 140 from its currently planned limits from Santa Fe Avenue to Campus Parkway further west to Buhach Road. With the traffic diversion off of SR 140, the existing planned limits for this improvement may suffice as a result of the SR 99 widening improvement.

It was not necessary to perform the merge-diverge ramp LOS analysis as ramp operations on SR 99 will be deficient as a result of the poor mainline operations within the study area.

Table 4.5-18 2030 AME Project Conditions - Two-Lane Highway Segment LOS Results

2030 Alternative 1A& Modified Alternative 1B Peak Month Two-Lane Highway Segment Levels of Service

		Peak Month AM Peak Hour					Peak Month PM Peak Hour				
No.	Highway Segment	Vol[a]	PTSF[b]	ATS[c]	V/C[d]	LOS[e]	Vol	PTSF	ATS	V/C	LOS
1.	**Bellevue Rd Btwn G St – SR 59**	**1,640**	**89.5%**	**37.1**	**0.81**	**E**	**2,545**	**91.2%**	**35.6**	**0.87**	**E**
7.	**SR 140 Btwn Buhach Rd – Franklin Rd**	**2,290**	**88.8%**	**32.5**	**0.78**	**E**	**2,570**	**91.4%**	**30.2**	**0.88**	**E**
8.	**SR 140 Btwn Franklin Rd – West St**	**2,430**	**90.2%**	**35.9**	**0.83**	**E**	**2,775**	**92.9%**	**32.9**	**0.94**	**E**
10.	**SR 59 Btwn Olive Ave – Yosemite Ave**	**2,055**	**86.0%**	**24.8**	**0.71**	**E**	**1,715**	**80.6%**	**27.9**	**0.59**	**E**
11.	Franklin Rd Btwn Bellevue Rd – Santa Fe Dr	190	19.3%	55.5	0.07	A	210	18.4%	55.3	0.07	A
12.	Fox Road Btwn Bellevue Rd – Santa Fe Dr	120	13.7%	55.9	0.04	A	130	14.9%	55.8	0.05	A
13.	Buhach Rd Btwn AveTwo – Ashby Rd	1,000	61.6%	48.2	0.34	C	1,110	65.4%	47.3	0.38	D
14.	Buhach Rd Btwn Elliot St – SR 140	560	41.5%	51.6	0.19	B	620	44.8%	51.2	0.21	B
15.	Franklin Road Between SR 99 - SR 140	710	49.4%	51.1	0.24	B	790	53.1%	50.4	0.27	C
16.	Franklin Rd Btwn Santa Fe Dr – Ashby Rd	770	52.2%	48.4	0.26	B	850	55.8%	47.7	0.29	C
17.	SR 59 n/o Bellevue Rd	840	55.8%	49.8	0.29	C	930	59.3%	49.1	0.32	C
19.	**SR 140 Btwn AME – Buhach Rd**	**1,615**	**78.6%**	**38.2**	**0.55**	**E**	**1,830**	**82.6%**	**36.4**	**0.62**	**E**

Note: All Segments analyzed as Class I facilities

Bold text indicates intersections operating at failing level of service.

[a] Vol = Two-way hourly volume, vehicles per hour.
[b] PTSF = Percent Time Spent Following.
[c] ATS = Average Travel Speed, miles per hour.
[d] V/C = Volume to Capacity ratio.
[e] LOS = Level of Service based on Class I two-lane highway.

Source: Dowling Associates, Inc., 2007.

Table 4.5-19 2030 AME Project Conditions - Multi-Lane Highway Segment LOS Results

No.	Highway Segment	Direction	2030 Peak Month AM Peak Hour			2030 Peak Month PM Peak Hour		
			Vp[a]	D[b]	LOS[c]	Vp	D	LOS
3.	Santa Fe Dr Btwn SR 59 – Franklin Rd	EB	736	12.6	B	837	14.3	B
	FFS = 60 mph 4-Lanes	WB	727	12.7	B	906	15.9	B
4.	Santa Fe Dr Btwn AME – Buhach Rd	NB	888	15.3	B	976	16.8	B
	FFS = 60 mph 4-Lanes	SB	872	15.0	B	988	17.0	B
5.	Olive Ave Btwn Austin St – SR 59	EB	641	13.6	B	877	18.6	C
	FFS = 50 mph 4-Lanes	WB	715	15.1	B	780	16.5	B
6.	16th St (SR 59) Btwn V St – SR 59	EB	568	11.2	B	871	17.1	B
	FFS = 55 mph 4-Lanes	WB	790	15.8	B	1,103	22.0	C
9.	SR 59 Btwn 16th St – Olive Ave	NB	753	14.8	B	1,112	21.9	C
	FFS = 55 mph 4-Lanes	SB	923	18.4	C	881	17.6	B
11.	AME Btwn Frontage – Elliot St	NB	645	12.0	B	524	9.8	A
	FFS = 55 mph 4-Lanes	SB	463	8.6	A	728	13.6	B
12.	AME Btwn Elliot St – SR 99 SB-Ramps	NB	686	12.8	B	524	9.8	A
	FFS = 55 mph 4-Lanes	SB	529	9.9	A	772	14.4	B
13.	AME Btwn SR 99 NB-Ramps – Belcher Rd	NB	961	17.9	B	621	11.6	B
	FFS = 55 mph 4-Lanes	SB	789	14.7	B	848	15.8	B
14.	AME Btwn Belcher Road – Ave Two	NB	773	14.4	B	604	11.3	B
	FFS = 55 mph 4-Lanes	SB	654	12.2	B	794	14.8	B
15.	AME Btwn Avenue Two – Santa Fe Dr	NB	748	14.0	B	635	11.8	B
	FFS = 55 mph 4-Lanes	SB	643	12.0	B	822	15.3	B
16.	AME Btwn Santa Fe Drive – Franklin Rd	NB	756	14.1	B	722	13.5	B
	FFS = 55 mph 4-Lanes	SB	490	9.1	A	990	18.5	C
17.	AME Btwn Franklin Rd – Thornton Rd	NB	629	11.7	B	710	13.2	B
	FFS = 55 mph 4-Lanes	SB	534	10.0	A	985	18.4	C
18.	AME Btwn Thornton Rd – SR 59	NB	532	9.9	A	682	12.7	B
	FFS = 55 mph 4-Lanes	SB	515	9.6	A	873	16.3	B

[a] Vp = Adjusted Flow Rate, pcphpl (passenger cars per hour per lane).
[b] D = Density, pc/mi/ln (passenger cars per mile per lane).
[c] LOS = Level of Service based on Class I multi-lane highway.
Source: Dowling Associates, Inc., 2007.

Table 4.5-20 2030 AME Project Conditions – Basic Freeway Segment LOS Results

SR 99 Segment (Two Through Lanes per Direction)		2030 AME AM Peak			2030 AME PM Peak		
From	To	Pk Hour Volume[a]	Density[b] (pc/mi/ln)[c]	LOS[d]	Pk Hour Volume	Density (pc/mi/ln)	LOS
NB off to King Way	NB on from King Way	4,370	> 45.0	F(0)	3,840	35.7	E
NB on from King Way	NB off to R St	5,180	> 45.0	F(0)	4,730	> 45.0	F(0)
NB off to R Street	NB on from SR 59/J St	4,580	> 45.0	F(0)	4,060	40.0	E
NB on from SR 59/J Street	NB on from 16th St	5,110	> 45.0	F(0)	4,640	> 45.0	F(0)
NB on from 16th St	NB off to Franklin Rd	5,750	> 45.0	F(2)	5,340	> 45.0	F(1)
NB off to Franklin Rd	NB on from Franklin Rd	5,290	> 45.0	F(0)	4,830	> 45.0	F(0)
NB on from Franklin Rd	NB off to Expressway	5,640	> 45.0	F(1)	5,210	> 45.0	F(0)
NB off to Expressway	NB on from Expressway	5,060	> 45.0	F(0)	4,580	> 45.0	F(0)
NB on from Expressway	NB on from SB Expressway	5,400	> 45.0	F(1)	4,980	> 45.0	F(0)
NB on from SB Expressway	NB off to Atwater Blvd	5,815	> 45.0	F(2)	5,395	> 45.0	F(1)
NB off to Atwater Blvd	NB off to Applegate Rd	5,045	> 45.0	F(0)	4,455	> 45.0	F(0)
NB off to Applegate Rd	NB on from Applegate Rd	4,445	> 45.0	F(0)	3,795	34.0	D
NB on from Applegate Rd	NB on from Atwater Rd	4,795	> 45.0	F(0)	4,175	41.0	E
SB off to Atwater Blvd	SB off to Applegate Rd	3,730	33.1	D	5,110	> 45.0	F(0)
SB off to Applegate Rd	SB on from Applegate Rd	3,360	28.5	D	4,700	> 45.0	F(0)
SB on from Applegate Rd	SB on from Atwater Blvd	3,880	35.4	E	5,260	> 45.0	F(0)
SB on from Atwater Blvd	SB off to Expressway	4,670	> 45.0	F(0)	6,110	> 45.0	F(2)
SB off to Expressway	SB on from Expressway	3,880	35.4	E	5,240	> 45.0	F(0)
SB on from SB Expressway	SB on from NB Expressway	4,205	41.7	E	5,565	> 45.0	F(1)
SB on from NB Expressway	SB off to 16th St	4,470	> 45.0	F(0)	5,880	> 45.0	F(2)
SB off to 16th St	SB on from 16th St	3,570	31.9	D	4,880	> 45.0	F(0)
SB on from 16th St	SB off to SR 59/140	4,010	38.6	E	5,350	> 45.0	F(1)

Table 4.5-20 *continued*

SR 99 Segment (Two Through Lanes per Direction)		2030 AME AM Peak			2030 AME PM Peak		
From	To	Pk Hour Volume[a]	Density[b] (pc/mi/ln)[c]	LOS[d]	Pk Hour Volume	Density (pc/mi/ln)	LOS
SB off to SR 59/140	SB on from R Street	3,650	33.2	D	4,950	> 45.0	F(0)
SB on from R St	SB off to King Way	4,210	43.4	E	5,550	> 45.0	F(1)
SB off to King Way	SB on from SR 59/J St	3,650	32.9	D	4,930	> 45.0	F(0)

Note: **Bold text** indicates intersections operating at failing level of service.
[a] Peak hour volume (prior to passenger car equivalency adjustment)
[b] LOS = Level of Service is based on density as described in the Basic Freeway Segments, Chapter 23, HCM 2000.
[c] pc/mi/ln = Density expressed in passenger cars per mile per lane.
[d] Duration of LOS F: V/C >1.00-1.25 (less than an hour), >1.25-1.35 (1-hour), >1.35-1.45 (2-hours) >1.45 (3-hours)
Capacity = 2,300 pcplpm Source: Southern California Association of Governments
Source: Dowling Associates, Inc., 2007.

No Impact

The project will not result in inadequate parking capacity.

The project is the construction of a new expressway and does not include any parking nor would it affect parking within the vicinity. Therefore no impact to parking or parking capacity is anticipated.

Less Than Significant Impacts

The AME project will not contribute to level of service deficiencies at area intersections or roadway segments or directly result in an exceedance of Merced County or City of Atwater LOS standards.

INTERSECTION OPERATIONS

Implementation of the AME would result in improved traffic operations at the majority of the study intersections, when compared to 2030 No Build conditions. This would benefit regional transportation by reducing traffic congestion and decreasing travel times during peak hours. The estimated improvement in operations would not result in a full LOS grade change for the many of intersections studied, but intersection delays would generally be reduced with construction of the AME project. As documented in the traffic study, without the AME project, 13 of the 27 intersections studied and forecast to operate at a deficient LOS during either the AM or PM peak period. With the AME, six of these intersections are anticipated to operate deficiently, but all but one is forecasted to improve with construction of the AME.

One intersection, Intersection #22 (Applegate Road/SR 99 NB-Ramp) will incur a left turn delay in the LOS E range during the PM peak hour with construction. Because all other approaches and movements at this intersection would function at a LOS considered acceptable, and because this deficient operation only effects one turn movement during a limited number of hours of the day, this impact is considered to be less-than-

significant. Additionally, realignment and reconstruction of the Applegate/SR 99 interchange is identified in the MCAG 2004 RTP and improvements to this interchange are presently being studied as a separate project. No further mitigation is required.

ROADWAY SEGMENT OPERATIONS

Construction of the AME would also result in improved traffic operations at the majority of the roadways segments studied, when compared to 2030 No Build conditions. The AME is forecasted to improve roadway segment operations on SR 59, portions of SR 99 (south of the Franklin Road ramps), and several other key county roadways including Franklin Road, Fox Road, and Buhach Road.

Tables 4.5-21 and **4.5-22** provide summaries of two-lane and multi-lane roadway segment LOS results under existing, No Build, and proposed conditions. **Table 4.5-23** provides a summary of roadway segment LOS results specific to SR 99 under existing, No Build, and proposed conditions.

Two-Lane Road Segment Operations

As shown on **Table 4.5-21**, traffic operations would operate at an acceptable LOS on all studied two-lane road segments. About half of the studied two-lane road segments would either improve or function at the same LOS with construction of the AME. One roadway segment in unincorporated Merced County (Bellevue Road between G Street and SR 59) would experience a reduced LOS be adversely affected as a result of the AME. The LOS on Bellevue Road between G Street and SR 59 would drop from LOS D to LOS E as a result of the added traffic diverted onto Bellevue Road via the AME. This road segment lies outside of the AME project footprint and is planned to be widened (according to MCAG 2004 RTP). No specific mitigation is necessary as part of the AME project, though the AME design has included improvements to the SR 59/Bellevue Road intersection that would enable this future widening and should contribute to reduced traffic congestion on this road segment in the future. No further mitigation is required.

Table 4.5-21 Summary of Two-Lane Road Segment LOS Results

		Existing LOS		No Build LOS		AME LOS	
No.	**Highway Segment**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
1.	Bellevue Road Between G Street – SR 59	B	B	D	C	E	E
7.	SR 140 Between Buhach Road - Franklin Road	C	C	E	E	E	E
8.	SR 140 Between Franklin Road – West	B	C	E	E	E	E
10.	SR 59 Between Olive Avenue - Yosemite Avenue	E	E	E	E	E	E
11.	Franklin Road Between Bellevue Road - Santa Fe Drive	A	A	B	B	A	A
12.	Fox Road Between Bellevue Road - Santa Fe Drive	A	A	B	B	A	A
13	Buhach Road Between Avenue Two – Ashby Road	C	C	D	E	C	D
14	Buhach Road Between Elliot – SR 140	B	B	B	C	B	B
15.	Franklin Road Between SR 99 – SR 140	A	A	B	B	B	C
16.	Franklin Road Between Santa Fe Drive - Ashby Road	B	B	C	C	B	C
17.	SR 59 n/o Bellevue Road	B	B	C	C	C	C

LOS= Level of Service is based on Class I two-lane highway.
Source: Dowling Associates, Inc., 2007

Multi-Lane Highway Segment Operations

As shown in **Table 4.5-22**, all multi-lane highway segments would function at an acceptable LOS with development of the AME project. The project would either improve or not adversely affect operations on any of the studies segments. The AME project itself would function at LOS A or LOS B during both the morning and afternoon peak hour periods.

Multi-Lane Freeway Segment Operations

Based on regional growth projections, all studied segments of SR 99 are anticipated to operate at a failing level of service during morning or evening peak hours in 2030. Freeway mainline operations for practically the entire length of SR 99 within the study area will exceed peak hour capacity. Heavily congested traffic conditions are forecast to occur in both directions on SR 99 during both the AM and PM peak hours and, in general, are not anticipated to be substantially different with development of the AME project.

Table 4.5-23 provides a summary of the changes in LOS anticipated on different segments of SR 99 during morning and afternoon peak hours.

As discussed previously, the widening of SR 99 from four to six lanes will be necessary to reduce congestion along SR 99. Widening the stretch of SR 99 between Merced and Atwater is identified as a long-term improvement in the MCAG 2004 RTP. The portion of SR 99 that would be realigned with the AME would be built as a six-lane facility with adequate width to accommodate eight travel lanes. Therefore, construction of the AME would widen this portion of SR 99 and would be consistent with the objective of long-term widening for this state facility in the future. Widening of this portion of SR 99 would be seen as a beneficial impact resulting from development of the AME.

The project will not result in a change in air traffic patterns, including an increase in traffic levels or a change in location that results in substantial safety risks.

The project would construct a new roadway and does not include any component related to an airport or an airport related facility that would result in changes to air traffic or air traffic patterns. However, a portion of the project is located within the Approach Surfaces Area as defined under FAA Order 8260.3 and 14 CFR Part 77 of Runway 31 at the Castle Airport, requiring the submittal of Form 7460 "A Request for Alteration and Construction" with the FAA Airport District Office to ensure that no obstacles penetrate the Runway 31 Approach Surface. Further discussion of this can be found in **Section 4.10**, Hazards and Hazardous Materials. Regardless, the project would not result in increased air traffic levels that could result in substantial safety risks and any impact would be less than significant.

The project will not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses.

The AME project has been designed in compliance with applicable local, regional and state guidelines governing roadway development. The roadway would not include construction of features such as sharp curves or dangerous intersections that would increase hazards for motor vehicle traffic. Improvements included as part of the AME project, including modification and addition of interchanges and intersections, would reduce traffic deficiencies and improve travel safety throughout the area.

Table 4.5-22 Summary of Multi-Lane Highway Segment LOS Results

			Existing LOS		No Build LOS		AME LOS	
No.	**Highway Segment**	**Direction**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
3.	Santa Fe Drive Between SR 59 – Franklin Road	EB	A	A	B	B	B	B
		WB	A	A	B	B	B	B
4.	Santa Fe Drive Between Franklin Road - Buhach Road	NB	A	A	B	B	B	B
		SB	A	A	B	B	B	B
5.	Olive Avenue Between Austin Street – SR 59	EB	A	A	C	C	B	C
		WB	A	A	B	B	B	B
6.	16th Street (SR 59) Between V Street – SR 59	EB	A	B	B	C	B	B
		WB	A	B	B	C	B	C
9	SR 59 Btwn 16th St – Olive Ave.	NB	-	-	C	C	B	C
		SB	-	-	C	B	C	B
11.	AME Btwn Frontage – Elliot St	NB	-	-	-	-	B	A
		SB	-	-	-	-	A	B
12.	AME Btwn Elliot St – SR 99 SB-Ramps	NB	-	-	-	-	B	A
		SB	-	-	-	-	A	B
13.	AME Btwn SR 99 NB-Ramps – Belcher Rd	NB	-	-	-	-	B	B
		SB	-	-	-	-	B	B
14.	AME Btwn Belcher Road – Ave Two	NB	-	-	-	-	B	B
		SB	-	-	-	-	B	B
15.	AME Btwn Avenue Two – Santa Fe Dr	NB	-	-	-	-	B	B
		SB	-	-	-	-	B	B
16.	AME Btwn Santa Fe Drive – Franklin Rd	NB	-	-	-	-	B	B
		SB	-	-	-	-	A	C
17.	AME Btwn Franklin Rd – Thornton Rd	NB	-	-	-	-	B	B
		SB	-	-	-	-	A	C
18.	AME Btwn Thornton Rd – SR 59	NB	-	-	-	-	A	B
		SB	-	-	-	-	A	B

LOS= Level of Service is based on Class I two-lane highway.
Source: Dowling Associates, Inc., 2007

Table 4.5-23 Summary of Basic Freeway Segment LOS Results for SR 99

SR 99 Segment		Existing LOS		No Build LOS		AME LOS	
From	To	AM	PM	AM	PM	AM	PM
NB off to King Way	NB on from King Way	B	B	E	D	F	E
NB on from King Way	NB off to R St	C	C	F	F	F	F
NB off to R St	NB on from R St	B	C	F	E	F	E
NB on from R St	NB off to SR140/59	C	C	F	F	F	F
NB off to SR140/59	NB on from SR 59/J St	B	C	F	F	F	F
NB on from SR 59/J St	NB on from 16th St	C	C	F	F	F	F
NB on from 16th St	NB off to Franklin Rd	C	D	F	F	F	F
NB off to Franklin Rd	NB on from Franklin Rd	C	D	F	F	F	F
NB on from Franklin Rd	NB off to Buhach Rd	C	D	F	F	F	F
NB off to Buhach Rd	NB on from Buhach Rd	C	C	F	E	F	F
NB on from Buhach Rd	NB off to Atwater Rd	C	D	E	D	F	F
NB off to Atwater Rd	NB off to Applegate Rd	C	C	F	E	F	D
NB off to Applegate Rd	NB on from Applegate Rd	B	C	D	F	F	E
NB on from Applegate Rd	NB on from Atwater Rd	C	C	D	F	D	F
SB off to Atwater Blvd	SB off to Applegate Rd	B	C	D	F	D	F
SB off to Applegate Rd	SB on from Applegate Rd	B	C	F	F	E	F
SB on from Applegate Rd	SB on from Atwater Blvd	B	C	E	F	F	F
SB on from Atwater Blvd	SB off to Buhach Rd	C	C	F	F	E	F
SB off to Buhach Rd	SB on from Buhach Rd	C	C	D	F	E	F
SB on from Buhach Rd	SB off to 16th Street	C	C	E	F	F	F
SB off to 16th St	SB on from 16th St	B	C	D	F	D	F
SB on from 16th St	SB off to SR 59/140	B	C	E	F	E	F
SB off to SR 59/140	SB on from SR140/59	B	B	D	F	D	F
SB on from SR140/59	SB off to R St	B	C	E	D	E	F
SB off to R St	SB on from R St	B	C	F	F	D	F
SB on from R St	SB off to King Way	C	C	F	E	F	E
SB off to King Way	SB on from SR 59/J St	B	C	F	F	F	F

LOS= Level of Service is based on density as described in the Basic Freeway Segments, Chapter 23, HCM 2000.

Bold text indicates freeway segments where operation LOS would decline during either the AM or PM peak hour as a result of the AME.

Source: Dowling Associates, Inc., 2007.

Heavy equipment, such as farm machinery, may periodically use the AME to travel to fields adjacent to the roadway. It is not anticipated that there would be substantial farm vehicle traffic on the AME because farm workers would continue to be able to use the existing local roadways to access the majority of the agricultural fields in the area. Therefore, impacts associated with hazards or incompatible uses are considered to be less than significant.

The project will not conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

The 2003 Atwater and Merced Bicycle Plan prepared by MCAG lists construction of a bike lane along Bellevue Road connecting the City of Atwater and the University of California at Merced as a priority project

within the region. It would be unsafe to have bicycles using the expressway to travel between SR 59 and Franklin Road because of the high traffic volumes and speeds anticipated on the expressway. The project would construct the new expressway just north of Bellevue Road between SR 59 and Franklin Road. Portions of Bellevue Road would be utilized to provide local access. If MCAG or another agency decides to pursue this priority bicycle project in the future, Bellevue Road could be utilized as a bicycle route. Connections would have to be built in order for bicycles to access Bellevue Road from points south of SR 59 and north of Franklin Road. Therefore the project would not interfere with construction and operation of a bicycle lane along this portion of Bellevue Road.

Significant Impacts

Impact TRAF-1: During construction, the project may result in inadequate emergency access.

The project is a roadway construction project providing improved roadway access to areas within Unincorporated Merced County and the City of Atwater and improved regional access that would also benefit motorists in the City of Merced. Implementation of the project would ultimately result in increased and improved emergency access. However, during the construction phase of the project, emergency access could be adversely impacted on already existing area roadways that are part of or connected to the project alignment. Implementation of the following mitigation measure would reduce impacts to emergency access to a less-than-significant level:

Mitigation Measure TRAF-1:

During construction of the AME, the project sponsor shall be required to provide a minimum number of through lanes and turning lanes open on all existing roadways to accommodate vehicular traffic. Emergency service providers in the City of Atwater, the City of Merced, and Merced County shall be notified throughout the construction phase as to any road closures or detours as lane reductions in existing roadways would impede emergency access.

Significance After Mitigation: Less than Significant

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4.6 NOISE

This section describes the existing noise conditions in the project study area and potential noise impacts arising from implementation of the AME project. Information presented in this section is primarily based on a noise impact analysis prepared by Illingworth & Rodkin, Inc. in June 2007 (amended September 2007). The complete noise impact analysis can be obtained from Merced County Association of Governments (MCAG). This section also includes a brief evaluation of project consistency with applicable regulations and policies from the City of Atwater General Plan and the Merced County General Plan. Mitigation measures are presented to reduce identified impacts to the maximum extent possible.

4.6.1 CHARACTERISTICS OF NOISE

Noise is generally defined as unwanted sound of a disturbing or annoying nature. Noise may be considered objectionable due to its pitch or loudness. Pitch is the height or depth of a sound. Higher pitched sounds seem louder to the human ear than lower pitched sounds. Loudness is the intensity of sound combined with the ability of the ear to receive noise.

Sound levels are usually described using the decibel (dB) scale. The decibel is a unit of measurement that indicates the relative volume of a sound. Zero on the decibel scale roughly corresponds with the lowest sound detectable to a healthy human ear.

Most sounds that we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency combine to generate a sound. Because the human ear is not capable of hearing all sound frequencies, decibels are often "A" weighted, giving more weight to those sounds to which the human ear is more sensitive. The resulting "A" weighted decibel is abbreviated as "dBA".

Decibels are logarithmic units and dBA measurements cannot be simply added. An increase of 10 dBA represents a 10-fold increase in sound energy while a 20 dBA increase represents a 100-fold increase of sound energy. However, to the human ear, each 10 dBA increase in sound is perceived as an approximate doubling of noise.

If two sounds of equal magnitude are added together it does not result in a doubling of noise, but rather in an increase of 3 dB. For example, if the sound level is measured at 70 dBA when 100 cars pass by a noise receiver, if then 200 cars passed by the same receiver the decibel level would increase to 73 dBA. The human ear would perceive the doubling of the amount of traffic as a slight increase in noise levels, but it would not seem twice as loud.

Table 4.6-1 shows the dbA levels typical of various common sources.

Table 4.6-1 Range of Typical A-Weighted Noise Levels

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	120 dBA	
Jet fly-over at approximately 984 Feet		Rock concert
	110 dBA	
Pile driver at approximately 66 Feet		Night club with live music
	100 dBA	
Large truck pass-by at approximately 49 Feet		
	80 dBA	Noisy Restaurant
Gas lawn mower at approximately 98 Feet	70 dBA	Garbage Disposal at approximately 3 Feet Vacuum cleaner at approximately 10 Feet Normal Speech at approximately 3 Feet
Commercial/Urban daytime Suburban expressway at approximately 295 Feet	60 dBA	Active office environment
Urban area nighttime	50 dBA	Quiet office environment
Suburban nighttime Quiet rural areas	40 dBA	
Wilderness area	30 dBA	Library Quiet bedroom at night
	20 dBA	
Most quiet remote areas	10 dBA	Quiet recording studio
Threshold of human hearing	0 dBA	Threshold of human hearing

Source: Illingworth & Rodkin, 2007.

Noise Metrics

Although the A-weighted noise level may adequately indicate the level of environmental noise at any moment in time, noise levels within communities may vary. Most environmental noise includes a conglomeration of noise from distant sources, which create a relatively steady background noise, or ambient noise, in which no particular noise is identifiable. Several noise metrics have been devised to measure sound over periods of time to provide a picture of the average noise environment. The metrics used in this analysis are described below.

EQUIVALENT SOUND LEVEL (L_{EQ})

The Equivalent Sound Level (L_{eq}) is the average A-weighted noise level during a particular period of time. Typical periods of measurement include one hour, eight hours, and 24-hours. L_{eq} represents the average noise level during the period of time noise is measured.

DAY-NIGHT AVERAGE SOUND LEVEL (L_{DN})

The way people react to noise can vary depending on the time of day the noise is being generated. At night,

exterior background noise levels are generally lower than during the daytime. However, most household noise also decreases at night, thus exterior noise may become more noticeable. In addition, most people sleep at night and may be more sensitive to loud noises than they would be during the day. To capture these day and night variations in noise sensitivity, the Day-Night Average Sound Level (L_{dn}) is used. L_{dn} calculations measure the average noise level at a particular location over a 24-hour period and divide the 24-hour day into a daytime period (7:00 a.m. to 10:00 p.m.) and a nighttime period (10:00 p.m. to 7:00 a.m.). To account for increased sensitivity to noise during nighttime hours, a 10 dB penalty is added to noise measured during the nighttime period. L_{dn} is calculated by averaging L_{eq} for each hour in a 24-hour period, including the 10 dB nighttime penalty. Sound levels used in this in this analysis have been provided as L_{dn} to be consistent with Merced County noise standards. **Table 4.6-2** provides definitions of various terms used in this section.

Table 4.6-2 Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period. The hourly L_{eq} used for this report is denoted as dBA L_{eq}[h].
Lmax RMS Level	The maximum root-mean-square (RMS) sound pressure level during a measurement – measured using the "fast" exponential time constant.
Linear Peak Level	Peak sound pressure level based on the largest absolute value of the instantaneous sound pressure over the frequency range from 20 Hz to 20,000 Hz.
L01, L05, L10, L90	The A-weighted noise levels that are exceeded 1%, 5%, 10%, and 90% of the time during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Illingworth & Rodkin, 2007.

Methodology

EXISTING NOISE CONDITIONS

The primary land use in the project study area is agricultural with a mixture of residential uses (single-family residential and rural residential), and commercial uses. To the north of State Route 99 (SR 99) and south of Santa Fe Avenue there are several residential subdivisions under construction and more in the early planning stages. Along the north side and adjacent to SR 99 there are locations where several existing homes are grouped together. Near the beginning of the AME project alignment along Bellevue Road and the existing State Route 59 (SR 59) is another group of homes. Outside these two areas large, residential land uses tend to be separated by open fields. The noise environment in the study area results primarily from vehicular traffic along SR 99 and traffic on the existing network of county roads.

In 2005, a noise monitoring survey was conducted from October 30 to November 1, 2006 to quantify the existing noise environment in the project vicinity. Four long-term noise measurements and 17 short-term noise measurements were made at representative locations of noise sensitive land uses or receivers in the project area.

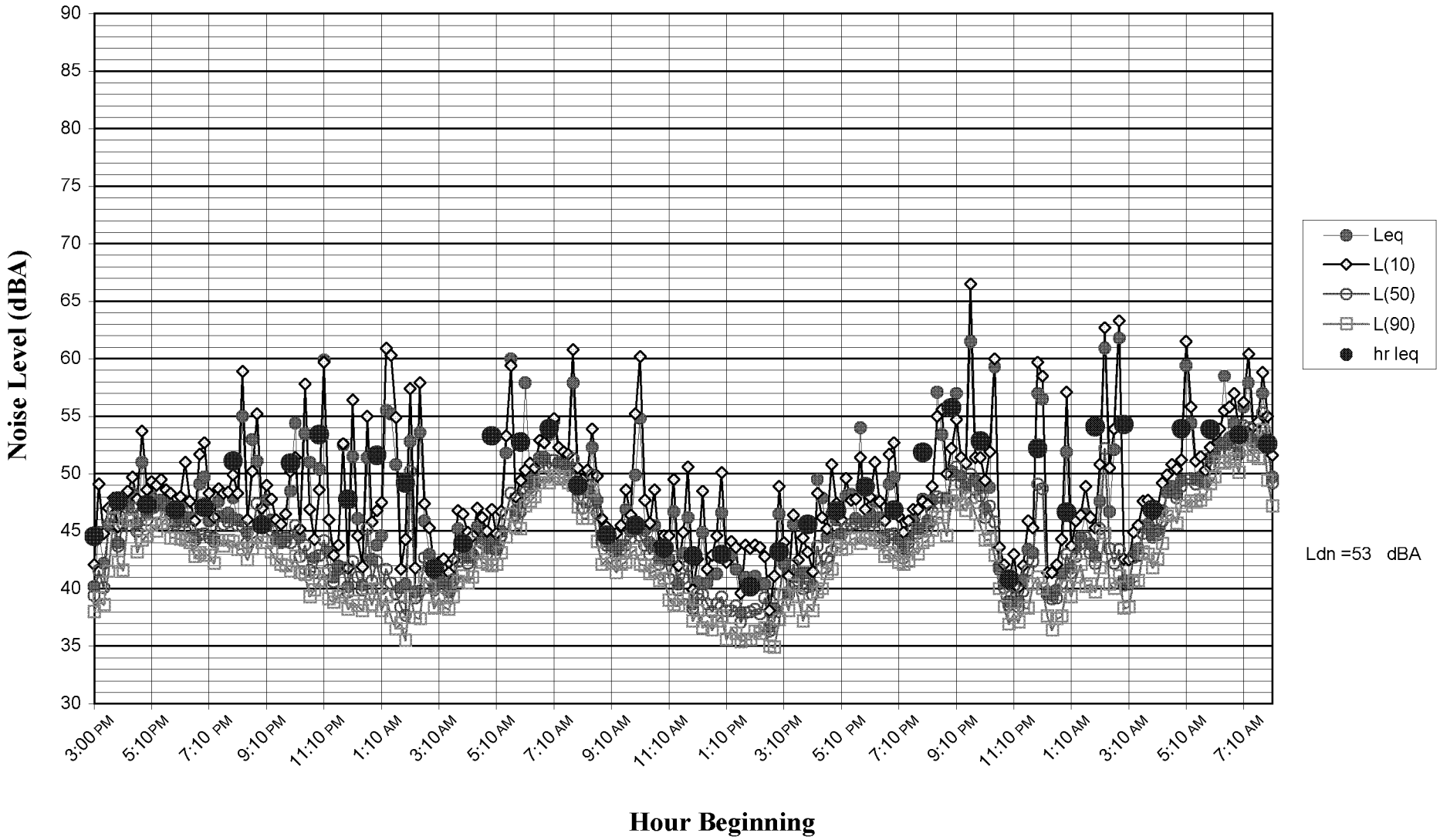
Long Term Noise Measurements

The first long-term noise measurement (LT-1) was located in the back yard of a residence at 2056 Canon Persido. **Figure 4.6-1** shows noise levels at LT-1 for the period of measurement between October 30 and November 1. This property is located approximately 500 feet from the centerline of the proposed roadway of **Modified** Alternative 1B and 1800 feet from Alternative 1A. The land behind the backyard is currently an orchard. The primary noise sources in the area are from non-transportation noise sources such as frogs croaking and occasional farming activities associated with the care and harvesting of the orchard.

Unusually high noise levels were measured during the early evening hours and late night hours. During these periods, the lows ranged from 37 to 49 dBA L_{min} and the highs ranged from 44 to 80 dBA L_{max}. The average low was 41 dBA and the average L_{max} was 59 dBA. These highs appeared to be very short in duration and are most likely attributed to sounds that occurred very near the sound level recording device, such as frogs croaking or other similar natural noises.

Hourly-equivalent daytime noise levels typically ranged from approximately 40 dBA to 56 dBA L_{eq}. At night, noise levels typically ranged from approximately 41 dBA to 54 dBA L_{eq}. Taken as a whole, the L_{dn} for this area was calculated (with the short duration extreme highs removed) to be 53 dBA.

The second long-term noise measurement (LT-2) was made in the front yard of a residence at 1159 Bellevue Road, approximately 230 feet from the existing center of Bellevue Road. **Figure 4.6-2** shows noise levels at LT-2 for the period of measurement between October 30 and November 1. The front yard of this residence had a direct line of sight to the Bellevue Road. The primary noise source at this residence was vehicular traffic on Bellevue Road. Noise levels at this residence represent the existing traffic noise patterns from Bellevue Road. The hourly-equivalent daytime noise levels typically ranged from approximately 51 dBA to 60 dBA L_{eq}. At night, noise levels typically ranged from approximately 42 dBA to 55 dBA L_{eq}. The L_{dn} was for this area was calculated to be 58 dBA.

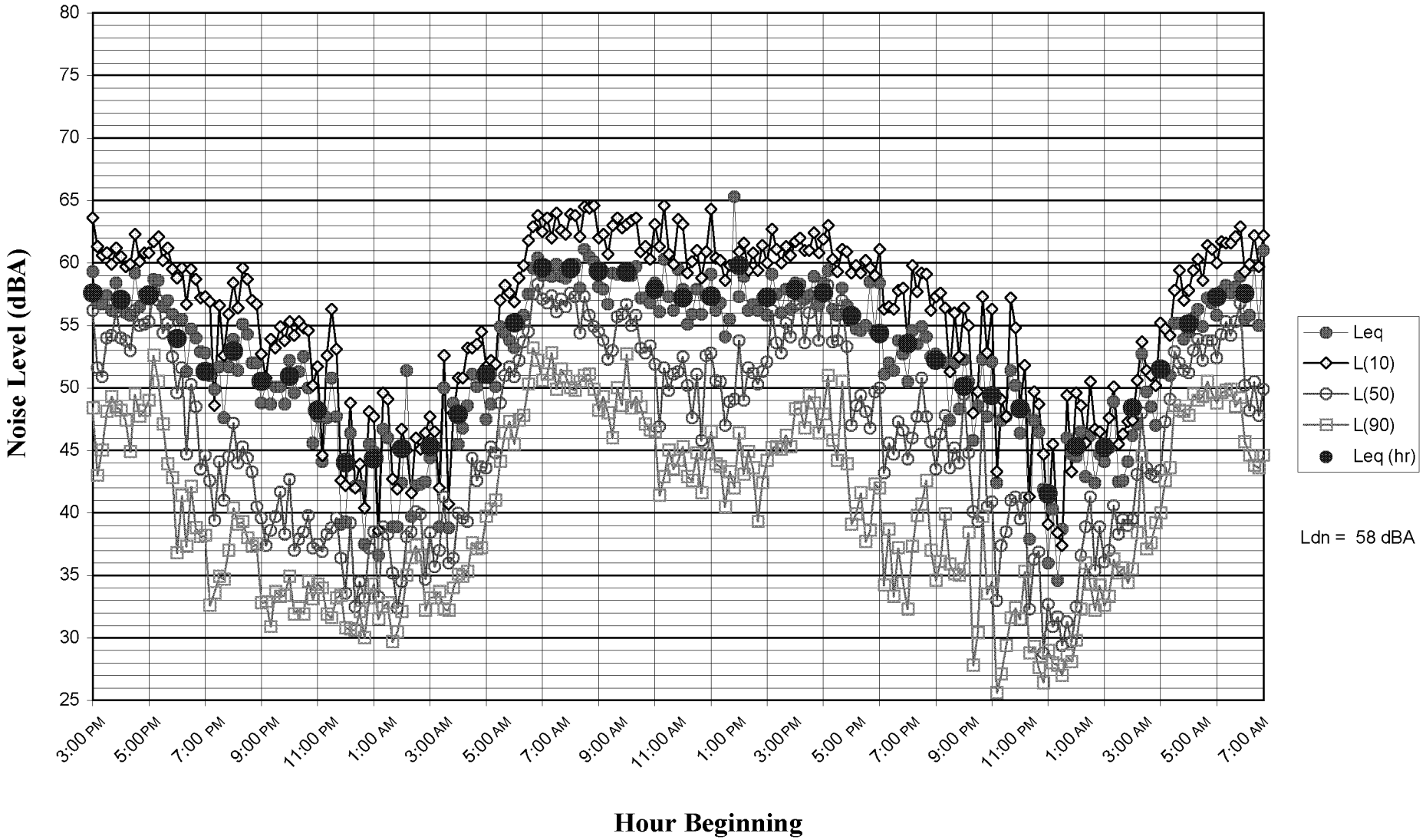


ATWATER-MERCED EXPRESSWAY

Noise Levels at LT-1 - October 30 - November 1, 2006
Backyard at 2056 Canon Persido

FIGURE 4.6-1

Source: Illingworth & Rodkin, Inc., May 2007



ATWATER-MERCED EXPRESSWAY

Noise Levels at LT-2 – October 30 - November 1, 2006
Front Yard at 1159 Bellvue Road

FIGURE 4.6-2

Source: Illingworth & Rodkin, Inc., May 2007

The third long-term noise measurement (LT-3) was made near several residences on the east side of Ashby Avenue, adjacent to SR 99, north of Langtry Avenue. **Figure 4.6-3** shows noise levels at LT-3 for the period of measurement between October 30 and November 1. The sound level meter was located approximately 165 feet from the near lane of SR 99 and represents the traffic noise levels in this area from vehicular traffic on SR 99. Daytime hourly average noise levels ranged from 74 to 79 dBA. At night, noise levels typically ranged from approximately 71 dBA to 78 dBA L_{eq}. The L_{dn} for this area was calculated to be 81 dBA, well in excess of Merced County noise standards.

Finally, the fourth long-term noise measurement (LT-4) was made in the back yard of a residence at 2015 Gurr Road, approximately 650 feet from the location of the AME project alignment. **Figure 4.6-4** shows noise levels at LT-4 for the period of measurement between October 30 and November 1. The meter was placed in the rear of the residence to represent the ambient noise levels near the south end of the AME project. Daytime hourly average noise levels ranged from 47 to 55 dBA. At night, noise levels typically ranged from approximately 48 dBA to 55 dBA L_{eq}. The L_{dn} for this area was calculated to be 58 dBA.

Short Term Noise Measurements

Short-term noise measurements were conducted at 11 locations throughout the project area (ST-1 to ST-11). Locations for short-term noise measurements were selected to quantify noise levels along the existing roadways and to reflect ambient noise levels in areas where there is very little traffic. **Table 4.6-3** summarizes the results of the short-term noise measurements. The L_{dn} is estimated by correlating the short-term measurement to a corresponding time period at the nearby long-term noise measurement site.

Future Noise Conditions

Modeling of future year (2030) traffic conditions predicts that noise levels will increase with general growth in the area, including the AME project, by approximately 1 to 18 dBA L_{dn} at noise sensitive receivers in the study area with the project. Under existing conditions, most receivers in the project area currently experience noise levels below the Merced County noise significance criteria of 65 dBA L_{dn} and the City of Atwater Noise significance criteria of 60 dBA L_{dn}.

To determine future noise levels, noise modeling was performed using projected year 2030 traffic conditions, as provided in the traffic study prepared for the project. These calculations are designed to provide a "baseline," 2030 No Build conditions, establishing noise levels without the AME project and consider projected traffic volumes, levels of congestion, and vehicular mix of trucks to passenger cars. The resulting noise levels are discussed in **Section 4.6.4**, where 2030 No Build conditions are compared to noise levels anticipated with development of the AME project.

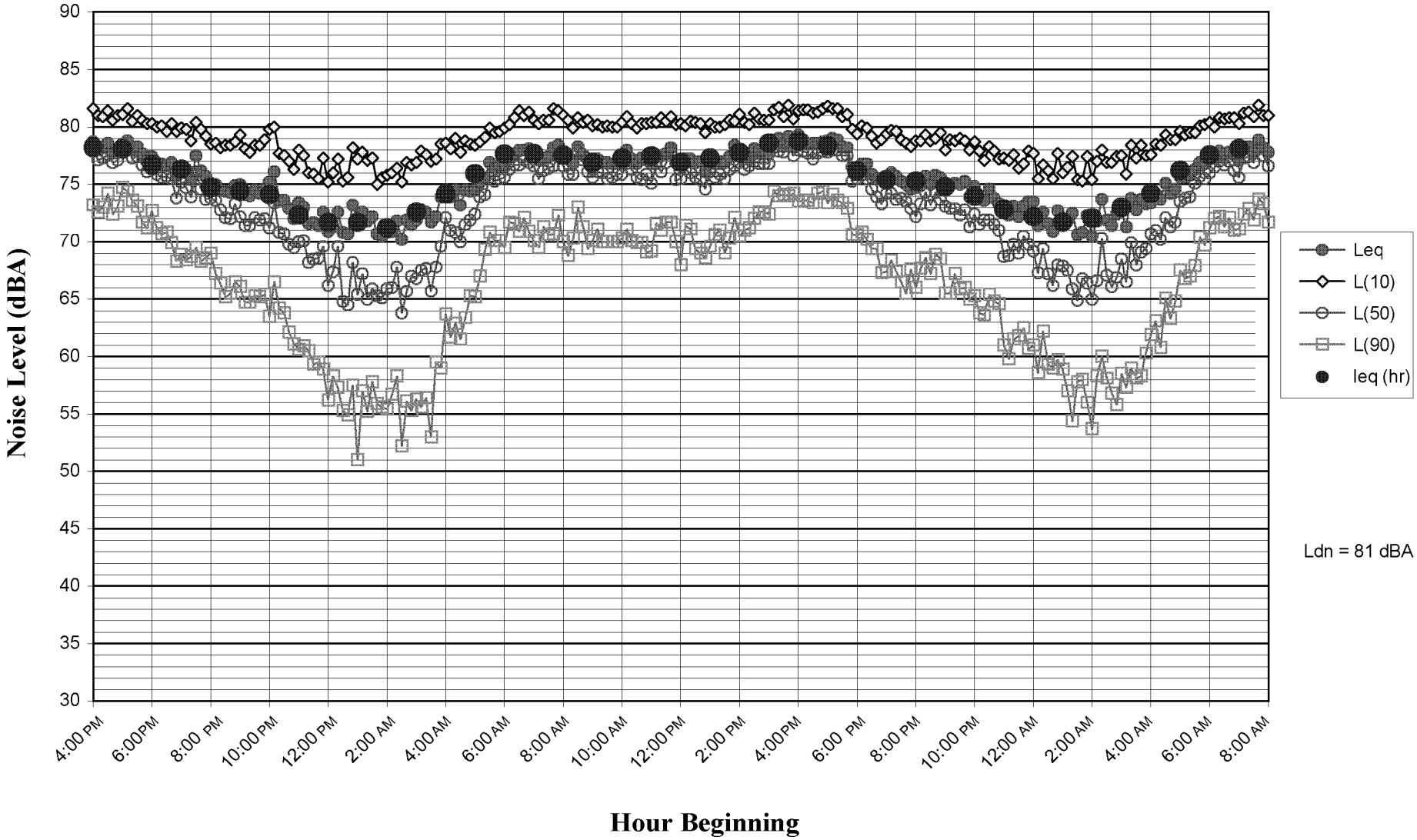
Table 4.6-3 Summary of Short-Term Noise Measurement Data

Noise Measurement Location (Date and Time)	L_{eq} During Measurement Period	Peak L_{eq}	Calculated L_{dn}
ST-1: 120 feet north of Bellevue Road on Utah Street - (10/31/06, 11:50-12:00)	60.8	62	60
ST-2: On SR 59 South of Bellevue Road near West Tahoe Street. - (10/31/06, 12:10-12:20)	62.3	64	62
ST-3: Southeast Corner of Fox Road and Bellevue Road - (10/31/06, 11:30-11:40)	47.3	50	48
ST-4: Along Ashby Road approximately 250 feet from SR 99 - (10/31/06, 09:00-09:10)	**68.0**	**70**	**72**
ST-5: Along Ashby Road north of homes approximately 300 feet from SR 99 typical set back of homes from freeway - (10/31/06, 09:20-09:30)	**67.1**	**70**	**72**
ST-6: Along Avenue One near ditch near proposed Alternatives - (10/31/06, 10:10-10:20)	50.4	57	56
ST-7: On dirt road near Green Sands/Belcher Road extension. - (10/31/06, 10:40-10:50)	41.1	44	48
ST-8: Near the intersection of Gurr Road and Avenue Two, approximately 600 feet from the rail road tracks along Santa Fe drive. No trains (10/31/06, 12:40-12:50)	58.9	62	60
ST-8B: Same location as ST-6 Near the intersection of Gurr Road and Avenue Two, approximately 600 feet from the rail road tracks along Santa Fe drive. One train during the measurement time. (10/31/06, 12:50-13:00)	72.1	N/A	N/A
St-9: On Camrose Street near the proposed extension of Green Sands Avenue at the end of the street nearest the new lot layouts. - (10/31/06, 16:30-16:40)	46.3	52	53
ST-10: On Gurr Road near irrigation ditch north of SR 140 - (10/31/06, 14:00-14:10)	47.9	55	58
ST-11: ~ On Elliot Road near Alternatives 1A and 1B. (10/31/06, 13:10-13:20)	43.4	48	51

Notes: Peak L_{eq} and L_{dn} approximated by correlating to corresponding period at long-term site.

Bold Text indicates that measurements at this location exceed Merced County noise standards

Source: Illingworth & Rodkin, 2007.

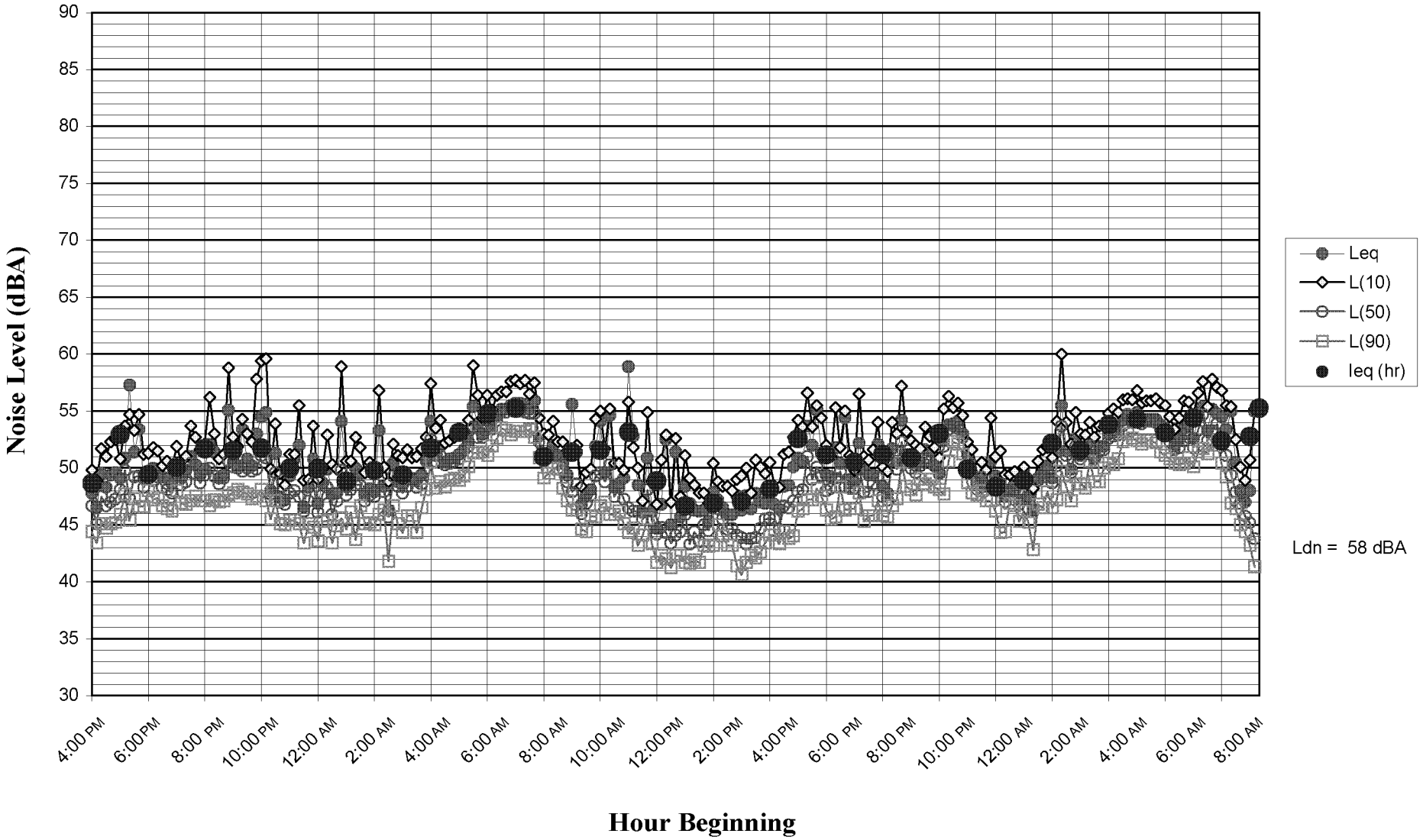


ATWATER-MERCED EXPRESSWAY

Noise Levels at LT-3 – October 30 - November 1, 2006
On Power Pole Near Ashby Road

FIGURE 4.6-3

Source: Illingworth & Rodkin, Inc., May 2007



ATWATER-MERCED EXPRESSWAY

Noise Levels at LT-4 – October 30 - November 1, 2006
In Tree Located Near Back of House at 2015 Gurr Road

FIGURE 4.6-4

Source: Illingworth & Rodkin, Inc., May 2007

4.6.2 REGULATORY SETTING

City of Atwater General Plan

The Noise Element of the 2000 City of Atwater General Plan provides general goals and policies to guide development within the city. The policies are primarily related to noise and the land use compatibility of proposed residential developments. The following policies are relevant to the AME project:

Policy NO-2.0 Protect residents from exposure to excessive transportation related noise.

Policy NO-2.4 Mitigate noise created by new transportation noise sources consistent with the levels specified in **Table 6-6** in outdoor activity areas or interior spaces of existing noise-sensitive land uses.[1]

Policy NO-2.5 Consider the significance of noise level increases associated with major roadway improvement projects prior to construction. In instances where mitigation will not reduce noise volumes to the levels recommended in **Table 6-6**, the following criteria should be used as a test of significance for roadway improvement

a) Where existing traffic noise levels are less than 60 dBA L_{dn}, in the outdoor activity areas of noise sensitive uses, roadway improvement projects that increase noise levels to 60 dBA L_{dn} will not be considered significant.

b) Where existing traffic noise levels range between 60 and 65 dBA L_{dn}, in the outdoor activity areas of noise sensitive uses, a +3 dBA L_{dn} increase in noise levels due to a roadway improvement project will be considered significant.

c) Where existing traffic noise are greater than 65 dBA L_{dn}, in the outdoor activity areas of noise sensitive uses, a +1.5 dBA L_{dn} increase in noise levels due to a roadway improvement project will be considered significant.

Table 4.6-4 describes maximum allowable noise exposure levels under the City of Atwater General Plan criteria.

[1] Table 6-6 of the Noise Element is duplicated and shown as Table 4.6-4 in this section.

Table 4.6-4 City of Atwater Maximum Allowable Noise Exposure - Transportation Noise Sources

Land Use	Outdoor Activity Areas[a] L_{dn} dBA	Interior Spaces	
		L_{dn} dBA	L_{eq} dBA[b]
Residential	60[c]	45	--
Transient Lodging	60[c]	45	--
Hospitals, Nursing Homes	60[c]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60[c]	--	40
Office Buildings	--	--	45
Schools, Libraries, Museums	60[c]	--	45
Playgrounds, Neighborhood Parks	70	--	--

[a] The exterior noise-level standard shall be applied to the outdoor activity area of the receiving land use. Outdoor activity areas are normally located near or adjacent to the main structure and often occupied by porches, patios, balconies, etc.
[b] As determined for a typical worst-case hour during periods of use
[c] Where it not possible to reduce the noise in outdoor activity areas to 60 dBA L_{dn}/CNEL or less using a practical application of best available noise reduction measures, an exterior noise level of up to 65 dBA L_{dn} /CNEL may be allowed, provided that exterior noise level reduction measures have been implemented ant that interior noise levels are in compliance with this table.

Source: City of Atwater General Plan Noise Element, 2000.

There are no policies in the City of Atwater General Plan that are applicable to construction related noise.

MERCED COUNTY GENERAL PLAN

The Noise Element of the Merced County General Plan contains policies regarding the compatibility of noise and residential land uses but does not contain any policies specifically related to transportation projects. Noise standards for residential properties, as shown in **Table 4.6-5**.

Table 4.6-5 Merced County Residential Land Use Compatibility Standards

Noise Source	Exterior Standard	Interior Standard
Traffic on Public Roadways, Railroad Line Operations & Aircraft Flight	65 dB L_{dn}	45dB L_{dn} [a]
	Daytime Noise Standard (7a.m. – 10 p.m.)	**Nighttime Noise Standard (10 p.m. – 7 a.m.)**
Other Noise Sources	Hourly L_{eq} of 55 dBA and a Maximum level of 75 dBA	Hourly L_{eq} of 45 dBA and a maximum Level of 65 dBA

[a] Windows and doors closed.
Source: Merced County General Plan.

In addition, existing residential land use areas that are or would be exposed to exterior noise levels of 65 dBA L_{dn} or greater are considered "noise impacted" and must be reviewed by Merced County to identify possible means of reducing noise levels. The County does not define what constitutes a "substantial noise increase."

Policy Consistency Analysis

The policies presented above generally require noise impact analysis for new projects and provide some quantitative criteria by which to determine impacts. These criteria have been used to determine significant impacts in this noise impact analysis. Proposed mitigation measures are intended to reduce noise impacts to the extent feasible. Implementation of these measures would ensure that the project is consistent with the policies of both the City of Atwater and Merced County General Plans.

4.6.3 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Appendix G of the California Environmental Quality Act (CEQA) contains guidelines to evaluate the significance of effects of environmental noise attributable to a given project. Under the CEQA Guidelines, the AME project would have a significant noise impact if it would:

a) Expose persons to or generation of noise levels in excess of standards established in the local General Plan or Noise Ordinance, or applicable standards of other agencies.

b) Cause exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.

c) Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

d) Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels existing without the project.

e) Cause exposure of people residing or working in the project area to excessive noise levels if the project is located within an area covered by an airport land use plan, or where such plan has not been adopted, within two miles of public airport or public use airport.

f) Cause exposure of people residing or working in the project area to excessive noise levels if the project is located in the vicinity of a private airstrip.

CEQA does not define what noise level increase would be considered substantial; allowing local jurisdictions to identify these thresholds. To determine whether increases in noise levels are significant, the following criteria have been developed based on the Merced County and City of Atwater Guidelines:

- Criteria 1 - Project-generated noise level increases of 3 dBA L_{dn} or greater would be considered significant where exterior noise levels would exceed the normally acceptable noise level standard (65 dBA L_{dn}).
- Criteria 2 - Where noise levels would remain below the normally acceptable noise level standard with the project, noise level increases of 5 dBA L_{dn} or greater would be considered significant. (65 dBA L_{dn}).

Less than Significant Impacts

Although the AME project is located within two miles of a public airport, it would not result in the exposure of people residing or working in the AME project study area to excessive noise levels.

Both Alternatives 1A and 1B pass through the Castle Airport Land Use Influence Area and **Modified** Alternative 1B passes through the southern edge of the Castle Airport Boundary. However, the project involves the construction of a roadway and would not include construction of residential or other noise sensitive land uses that would result in exposure of people to excessive noise levels. Therefore, no impact is anticipated.

The AME project would not result in exposure of people residing or working in the project area to excessive noise levels arising from use of a private airstrip.

The Atwater-Merced Expressway project does not include the development or the construction of a private airstrip. In addition, there are no existing private airstrips existing within the project study area. Therefore, no impact is anticipated.

Significant Impacts

Impact N-1: Project construction would cause a substantial temporary or periodic increase in ambient noise levels, groundborne vibration, and groundborne noise levels in the project vicinity above existing levels.

Construction activities would result in temporary noise level increases at receivers along the project alignment. Road construction is anticipated to last two years. Construction equipment would likely include air compressors, paving machines, forklift trucks, loaders, pavement grinders, dump trucks, trenching machines, compactors, and backhoes. All equipment and material staging for the project would occur within adjacent parcels, existing public right-of-way, or on private property subject to landowner approval.

Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receivers. Construction activities generate considerable amounts of noise, especially when heavy equipment is used. At times, these activities would occur immediately adjacent to residential receivers. The highest maximum noise levels generated by project construction would typically range from about 90 to 98 dBA L_{max} at a distance of 50 feet from the noise source. Typical hourly average construction generated noise levels are about 79 dBA to 88 dBA L_{max} measured at a distance of 50 feet from the center of the site during busy construction periods. Noise levels described above would be expected when construction occurs in the immediate vicinity of receivers along the project alignment. Construction generated noise levels drop off at a rate of about 7.5 dBA per doubling of distance between the source and receiver. Shielding provided by buildings or terrain result in lower construction noise levels at distant receivers. Construction noise levels would at times exceed 60 dBA L_{eq} and the ambient by at least 5 dBA L_{eq} at nearby receivers.

If the elementary school at the Avenue One school site is opened prior to construction of the AME, construction noise levels of 70 to 75 dBA dBA could occur when construction is within 200 feet of the

school site and 60 to 70 dBA within 400 feet. Noise levels would be highest during grading operations, during most other construction operations noise levels would be 10 dBA lower. Under Modified Alternative 1B, once the depressed section of roadway is excavated, construction would be shielded from the school site helping to reduce construction-period noise levels further. However, noise levels during construction could periodically and temporarily exceed local noise standards.

While construction related noise would be less than significant, the following mitigation measures would help reduce temporary noise associated with construction activities.

Mitigation Measure N-1:

The Project Sponsor shall enforce the following actions during construction of the AME:

- Noise-generating activities at the construction site or in areas adjacent to the construction site associated with the project in any way shall be restricted to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday. Should it become necessary to work on weekends, holidays, or after 7:00 p.m., residents shall be notified and noise levels for the needed work shall be subject to a special provision that would limit noise levels from construction activities to not exceed 82 dBA at 50 feet.
- All internal combustion engine driven equipment shall be outfitted with appropriate intake and exhaust mufflers in good condition.
- "Unnecessary" idling of internal combustion engines shall be strictly prohibited.
- Staging of construction equipment shall be avoided within 200 feet of residences and all stationary noise-generating construction equipment, such as air compressors and portable power generators, shall be placed as far as practical from existing noise sensitive receivers. Temporary barriers to screen stationary noise generating equipment shall be utilized when located in areas adjoining noise sensitive land uses.
- "Quiet" air compressors and other stationary noise sources shall be utilized where technology allows such uses.
- All construction traffic to and from the project site shall be routed via designated truck routes. Construction related heavy truck traffic shall be prohibited in residential areas where feasible. Construction truck traffic shall be prohibited in the project vicinity during non-allowed hours.
- All adjacent residents to the project site shall be notified of the construction schedule in writing.
- A "noise disturbance coordinator" responsible for responding to any local complaints about construction noise shall be designated. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. A telephone number for the disturbance coordinator at the construction site shall be conspicuously posted and included in the notice sent to neighbors regarding the construction schedule. The project sponsor shall be responsible for designating a noise disturbance coordinator and the contractor shall be responsible for posting the phone number and providing construction schedule notices.
- **If the Avenue One school site is open prior to or during construction of the AME project,**

grading operations within 500 feet of the schools site shall be coordinated with the school schedule such that major grading activities do not occur at times when school is in session. The grading plans shall indicate which areas are to be avoided to prevent disruption of school activities.

Significance After Mitigation: Less than Significant

Impact N-2: Implementation of the AME project would cause a substantial permanent increase in ambient noise levels in the project vicinity and expose persons to noise levels in excess of standards established in the City of Atwater or Merced County General Plans.

The AME project would construct a new roadway and therefore create a new source of noise within the AME project area. Noise levels generated by traffic on Alternatives 1A and 1B were compared to both noise levels under existing conditions and under 2030 No Build conditions to determine the potential for a substantial permanent noise level increase at noise receivers in the AME project area. Utilizing noise impact criteria established in the Merced County General Plan, significance thresholds would be exceeded at 25 of the 80 noise receiver locations modeled for Alternative 1A and 23 of the 80 noise receiver locations modeled for **Modified** Alternative 1B. There would be no exceedance of City of Atwater significance thresholds for the 15 modeled receivers located within the jurisdiction of the City of Atwater. Analysis of noise impacts and mitigation measures are addressed in four major sections:

- Section 1 extends from the beginning of the project alignment at Bellevue Road and SR 59 and extends to the intersection of Bellevue Road and Franklin Road. Within this section, the alignment is the same for both Alternatives 1A and 1B.
- Section 2 begins at the intersection of Bellevue Road and Franklin Road and extends to Santa Fe Drive. Within this section Alternatives 1A and 1B diverge.
- Section 3 begins at Santa Fe Drive and extends to State Route 99. Both Alternatives 1A and 1B occupy separate alignments within this section.
- Section 4 extends from State Route 99 to the end of the project at the intersection of Gurr Road and McSwain Road. Within this section both Alternatives 1A and 1B follow the same alignment.

SECTION 1

Figure 4.6-5 shows noise receivers in Section 1 of the project alignment. The primary source of noise is vehicular traffic on SR 59 and Bellevue Road. Noise sensitive land uses are primarily single-family residences spread out within both sides of the AME project area. Single-family homes fronting SR 59 are located on both sides of the roadway. Along Bellevue Road there are homes on both sides of the roadway to the east of SR 59 and west of SR 59 homes are located on the south side of the roadway. The project would construct the AME as a separate four-lane roadway just north of Bellevue Road, extending from SR 59 to Franklin Road.

Table 4.6-6 presents existing conditions and 2030 No Build conditions compared with 2030 project conditions within Section 1 of the project area. Under 2030 project conditions, 12 noise sensitive receivers, representing 17 homes, would experience noise levels in excess of Merced County noise standards. There would be approximately 11 homes along the east side of SR 59 and six homes west of SR 59 and south of

Bellevue Avenue that would experience noise in excess of Merced County noise standards.

Table 4.6-6 Section 1 - Existing and Predicted Noise Levels Shown in dBA, L_{dn}

		No Build		AME	
Receiver ID	Number of Homes Represented	Existing Conditions	2030 No Build	Year 2030 With AME Project	Significant Impact?
R1	2	58	64	73	Yes[a]
R2	3	56	62	67	Yes[b]
R3	1	50	58	62	No
R4	1	54	61	72	Yes[b]
R5	1	55	62	65	Yes[a]
R6	2	54	62	64	No
R7	1	54	63	65	No
R8	1	54	62	65	Yes[a]
R9	1	54	62	65	Yes[a]
R10	2	55	63	66	Yes[a]
R11	2	50	58	62	No
R12	2	60	66	68	No
R13	1	57	62	65	Yes[a]
R14	2	50	55	60	Yes[b]
R15	1	47	52	57	Yes[b]
R16	1	41	46	53	Yes[b]
R17	1	44	49	56	Yes[b]

[a] Project-generated noise level increases of 3 dBA L_{dn} or greater would be considered significant where exterior noise levels would exceed the normally acceptable noise level standard (65 dBA L_{dn}),

[b] Where noise levels would remain below the normally acceptable noise level standard with the project, noise level increases of 5 dBA L_{dn} or greater would be considered significant. (65 dBA L_{dn}).
Source: Illingworth & Rodkin, 2007.

SECTION 2

Alternatives 1A and 1B diverge in Section 2, with **Modified** Alternative 1B located further to the west. **Figure 4.6-6** shows noise receivers in Section 2 of the project alignment. Land uses within Section 2 are generally agricultural with a few homes spread out over large areas. Under existing conditions, the primary source of noise within this section is vehicular traffic on Santa Fe Drive and trains utilizing the Burlington Northern Santa Fe Railroad that runs alongside Santa Fe Drive. **Table 4.6-7** shows existing conditions and 2030 No Build compared to 2030 project conditions. The following sections describe impacts associated with Alternative 1A and **Modified** Alternative 1B.

SECTION 2 – ALTERNATIVE 1A

Implementation of Alternative 1A would result in one home, represented by receiver R22, experiencing noise levels in excess of Merced County noise standards.

SECTION 2 – MODIFIED ALTERNATIVE 1B

Implementation of Alternative 1B would result in one home, represented by receiver R22, experiencing noise levels in excess of Merced County noise standards. In addition, four homes, represented by receivers R18, R19, R20, and R23, would require relocation.

Table 4.6-7 Section 2 - Existing and Predicted Noise Levels Shown in dBA, L_{dn}

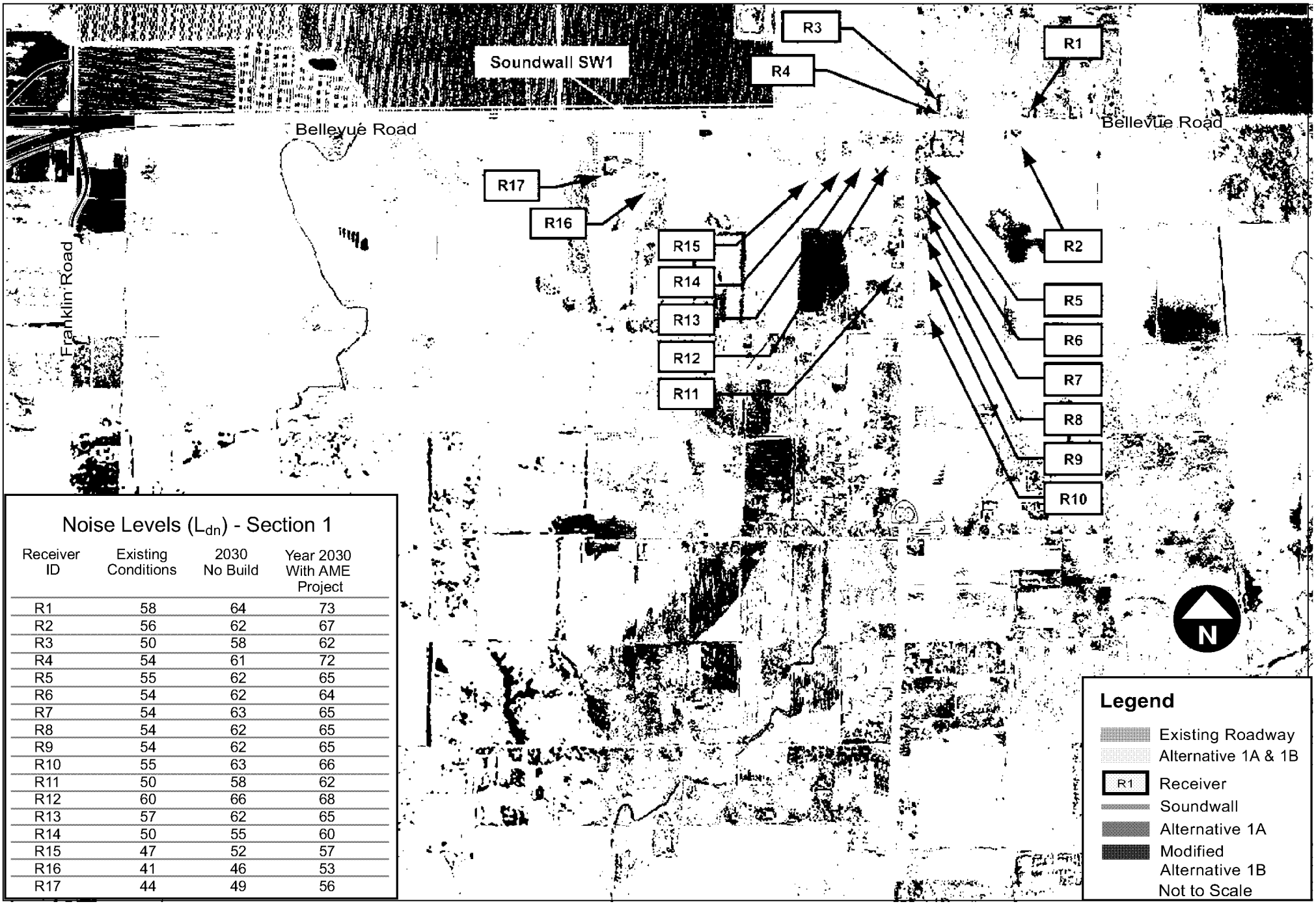
		No Build		Alternative 1A		Modified Alternative 1B	
Receiver ID	Number of Homes Represented	Existing Conditions	2030 No Build	Year 2030 With AME Project	Significant Impact?	Year 2030 With AME Project	Significant Impact?
R18	1	63	68	59	No	N/A	Displaced
R19	1	51	56	55	No	N/A	Displaced
R20	1	60	65	53	No	N/A	Displaced
R21	1	62	68	64	No	54	No
R22	1	45	48	57	Yes[b]	55	Yes[b]
R23	1	58	60	62	No	N/A	Displaced
R24	2	56	60	57	No	56	No
R25	2	61	64	62	No	62	No
R26	3	64	66	64	No	64	No

Note: Project-generated noise level increases of 3 dBA L_{dn} or greater would be considered significant where exterior noise levels would exceed the normally acceptable noise level standard (65 dBA L_{dn}). Where noise levels would remain below the normally acceptable noise level standard with the project, noise level increases of 5 dBA L_{dn} or greater would be considered significant. (65 dBA L_{dn}).
Source: Illingworth & Rodkin, 2007.

SECTION 3

Alternatives 1A and 1B follow two separate alignments within Section 3, up to just east of SR 99 where they converge before the SR 99 ramps. **Figure 4.6-7** shows noise receivers in Section 3 of the project alignment.

SR 99 will be realigned to the east of the existing alignment to allow for a new interchange with the AME. This realignment will move SR 99 closer to 10 homes along Ashby Road between Gurr Road and Valley Drive south of the AME. To the north of the expressway along Broadway Avenue between Buhach Road and Station Avenue, SR 99 will be moved closer to approximately 12 homes adjacent to North Buhach Road and Broadway Avenue. The Atwater Elementary School District owns an 18-acre future school site within this section of the project area **(the Avenue One school site)**, with plans to construct a school with a proposed opening date **sometime after 2012** ~~in the 2009/2010 school year~~. The parcel is located north of Avenue One and south of Canal Creek. **The existing noise levels in the area of the school range from 50 to 52 dBA L_{dn}**. **Table 4.6-8** shows existing conditions and 2030 No Build compared to 2030 project conditions. The following sections describe impacts associated with Alternative 1A and **Modified** Alternative 1B.



Noise Levels (L_{dn}) - Section 1

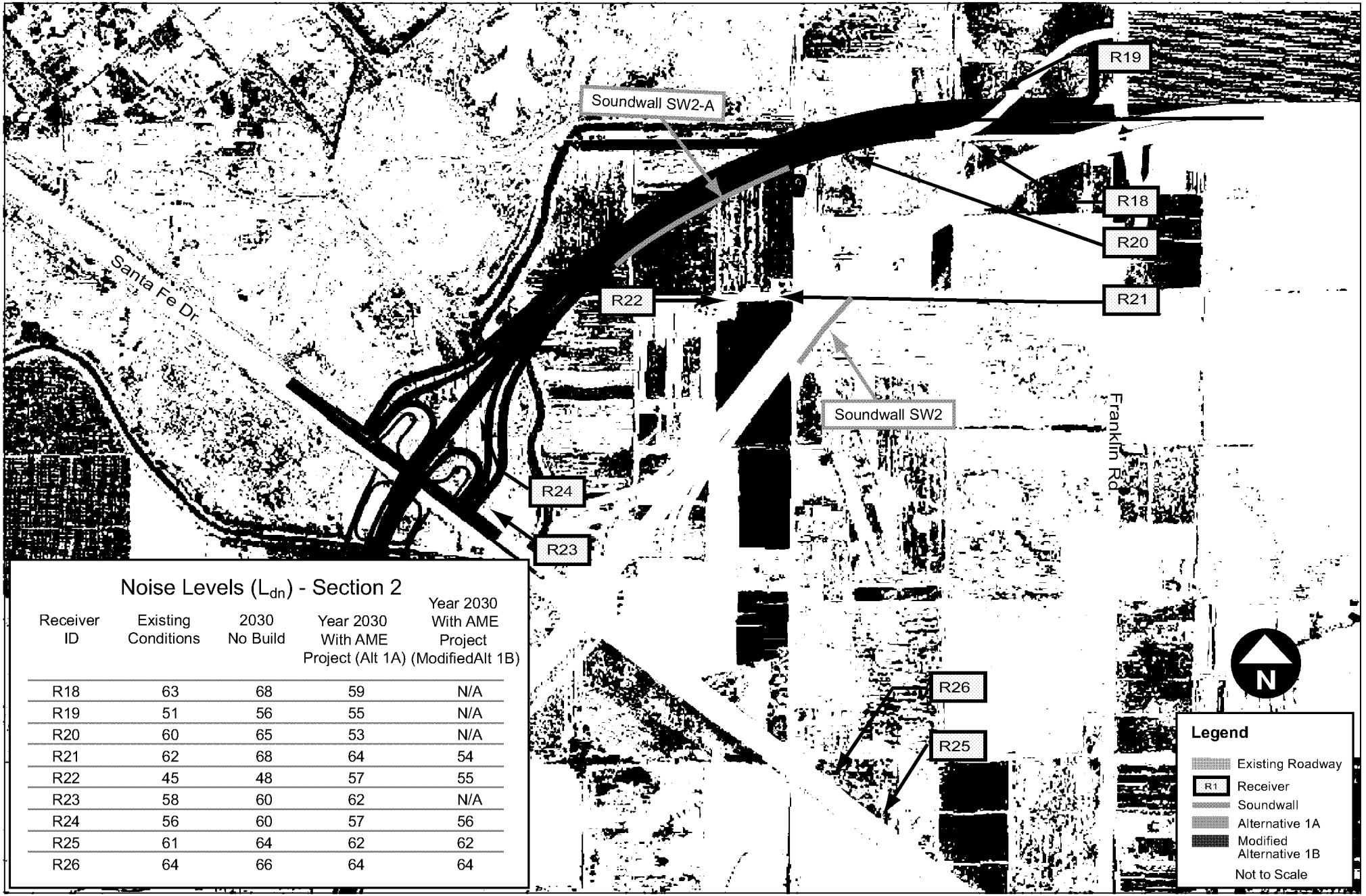
Receiver ID	Existing Conditions	2030 No Build	Year 2030 With AME Project
R1	58	64	73
R2	56	62	67
R3	50	58	62
R4	54	61	72
R5	55	62	65
R6	54	62	64
R7	54	63	65
R8	54	62	65
R9	54	62	65
R10	55	63	66
R11	50	58	62
R12	60	66	68
R13	57	62	65
R14	50	55	60
R15	47	52	57
R16	41	46	53
R17	44	49	56

ATWATER-MERCED EXPRESSWAY

Section 1 - Noise Receivers

FIGURE 4.6-5

Source: Illingworth & Rodkin, Inc., May 2007.



Noise Levels (L_{dn}) - Section 2

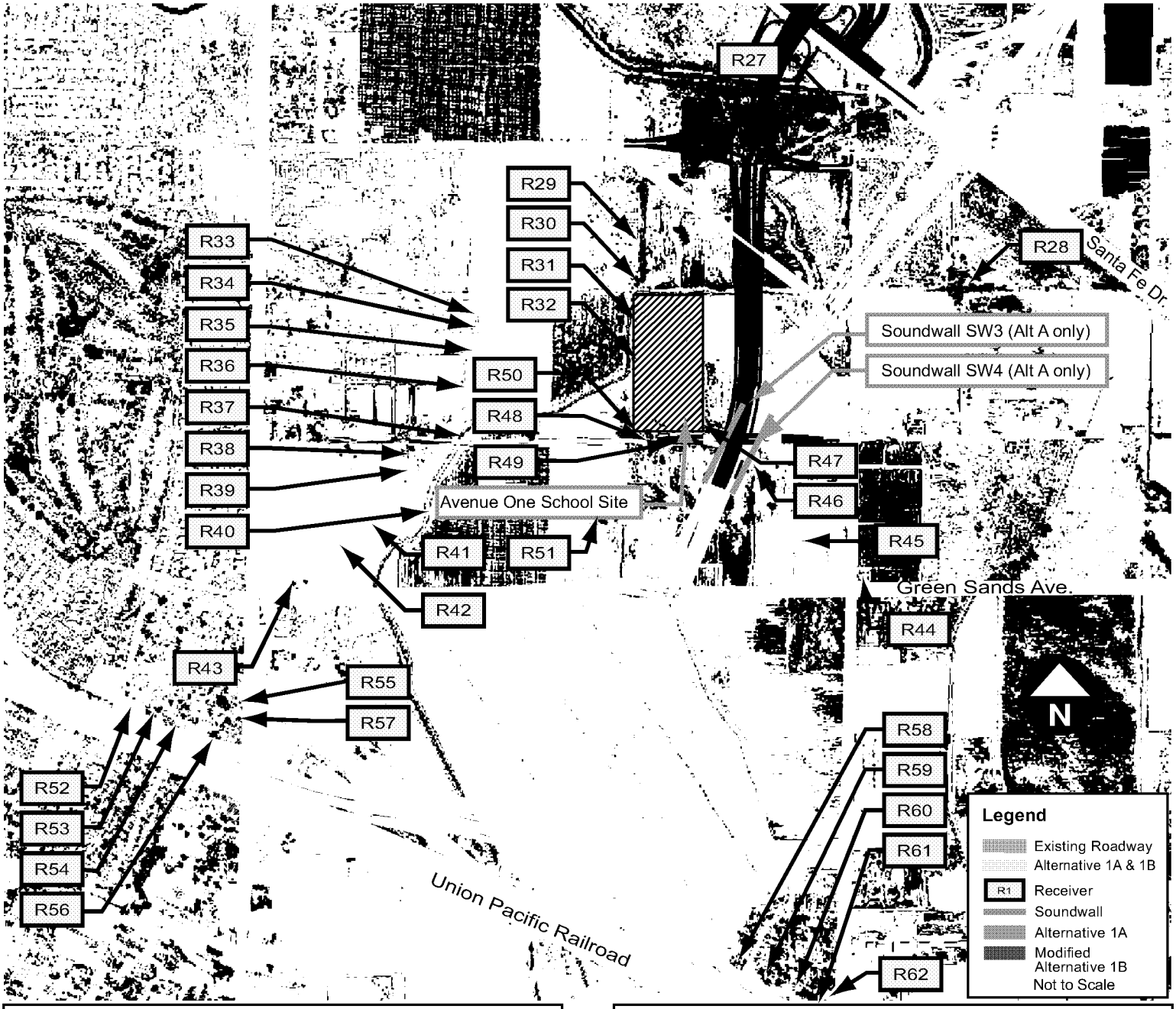
Receiver ID	Existing Conditions	2030 No Build	Year 2030 With AME Project (Alt 1A)	Year 2030 With AME Project (ModifiedAlt 1B)
R18	63	68	59	N/A
R19	51	56	55	N/A
R20	60	65	53	N/A
R21	62	68	64	54
R22	45	48	57	55
R23	58	60	62	N/A
R24	56	60	57	56
R25	61	64	62	62
R26	64	66	64	64

ATWATER-MERCED EXPRESSWAY

Section 2 Noise Receivers

REVISED FIGURE 4.6-6

Source: Illingworth & Rodkin, Inc., October 2008.



Noise Levels (L_{dn}) - Section 3

Receiver ID	Existing Conditions	2030 No Build	Year 2030 With AME Project (Alt 1A)	Year 2030 With AME Project (Modified Alt 1B)
R27	59	61	60	57
R28	50	52	59	54
R29*	54	55	57	55
R30*	49	50	53	51
R31*	49	50	53	51
R32*	49	50	530	51
R33*	50	51	52	52
R34*	50	51	52	52
R35*	50	51	53	53
R36*	52	53	53	53
R37*	52	53	53	54
R38*	53	54	56	57
R39*	54	55	55	56
R40*	55	56	55	56
R41*	57	58	55	56
R42*	57	58	55	58
R43*	60	61	59†	59†
R44	50	53	64	64
R45	50	53	55	57
R46	50	53	60	60
R47	50	53	66	N/A
R48	50	53	57	57
R49	51	53	57	N/A
R50	51	54	52	58
R51	52	55	55	63
R52	79	79	79	79
R53	81	81	81	81
R54	80	81	81	81
R55	67	68	68	68
R56	77	77	77	77
R57	75	75	76	76
R58	74	74	76	76
R59	74	74	75	75
R60	73	73	71	71
R61	69	69	69	69
R62	72	72	70	70

* = Within City of Atwater City limits

ATWATER-MERCED EXPRESSWAY

Section 3 Noise Receivers

REVISED FIGURE 4.6-7

Source: Illingworth & Rodkin, Inc., October 2008.

SECTION 3 – ALTERNATIVE 1A

Implementation of Alternative 1A would result in four residences adjacent to the AME and one residence adjacent to Green Sands and Belcher Avenue, represented by receivers R28, R44, R46, and R47, experiencing noise levels in excess of Merced County noise standards. The residences adjacent to the AME are single family homes located between Santa Fe Drive and Green Sands and Belcher Avenue. Two areas along the realigned portion of SR 99 currently experience noise levels that exceed Merced County noise standards. Noise levels in these areas are predicted to be the same or slightly higher with the realignment.

Alternative 1A is located approximately 250 feet from the ~~southwest~~ **southeast** corner of the ~~Atwater Elementary School District parcel~~ **Avenue One school site (**described above) and approximately 750 feet from the ~~northwest~~ **northeast** corner of the ~~parcel~~ **school site**. ~~Without approved building plans and accompanying site plans, it is not possible to determine the impact of Alternative 1A on this parcel.~~ **Under future traffic conditions without implementation of the AME, noise levels at the school site are anticipated to increase with the general growth by approximately 3 dBA L_{dn} to a level of 53 to 55 dBA Ldn. Under the future AME build conditions of Alternative 1A, noise levels at the Avenue One school site would range from 53 to 66 dBA Ldn. Loudest levels would occur at the southern portion of the school site, but would remain well below the Merced County noise criterion of 70 dBA Ldn.**

SECTION 3 – MODIFIED ALTERNATIVE 1B

Implementation of **Modified** Alternative 1B would result in three residences adjacent to the proposed expressway and one residence adjacent to Green Sands and Belcher Avenue, represented by receiver R44, **R46,** R47, ~~R50~~, and R51, experiencing noise levels in excess of Merced County noise standards. Two homes, represented by receivers ~~R48~~ **R47** and R49, would require relocation to make way for the alignment. Further discussion of land acquisition can be found in **Section 4.2, Land Use and Agriculture**. The homes adjacent to the AME are single family homes spread out between Santa Fe Drive and Green Sands and Belcher Avenue. Two areas along the realigned portion of SR 99 currently experience noise levels that exceed Merced County noise standards. Noise levels in these areas are predicted to remain the same or be slightly higher with the realignment.

One receiver, R43, located within the City of Atwater, would experience noise levels in excess of City of Atwater noise standards. This location is part of a residential subdivision which may include construction of a standard six-foot wooden fence along residential property lines. Assuming construction of a fence, noise levels at receiver R43 would be reduced to levels below the City of Atwater noise thresholds of significance.

~~Alternative 1B covers the west side of the Atwater Elementary School District parcel described above. Implementation of Alternative 1B would require acquisition of the parcel and relocation of the school site.~~ **Modified Alternative 1B would also pass in close proximity to the Avenue One school site (about 250 feet from the centerline of the modified alignment). Additional modeling was conducted to evaluate the potential noise impacts at the school site. Under the future AME build conditions of Modified Alternative 1B, noise levels at the proposed school site north of Avenue One and south of Canal Creek would range from 53 to 57 dBA L_{dn}. Loudest levels would occur at the southern portion of the school site, but would remain well below the Merced County noise criterion of 70 dBA L_{dn}. As part of the additional modeling, a sound wall was also evaluated at the school site; however, because the Modified Alternative 1B would be below grade at the nearest point to the school site, a sound wall**

would not make a noticeable difference in traffic noise levels.

Table 4.6-8 Section 3 - Existing and Predicted Noise Levels Shown in dBA, L_{dn}

		No Build		Alternative 1A		Modified Alternative 1B	
Receiver ID	Number of Homes Represented	Existing Conditions	2030 No Build	Predicted	Exceed Thresholds of Significance	Predicted	Exceed Thresholds of Significance
R27	2	59	61	60	No	57	No
R28	2	50	52	59	Yes[b]	54	No
R29*	1	54	55	57	No	~~59~~ **55**	No
R30*	1	49	50	53	No	~~56~~ **51**	No
R31*	1	49	50	53	No	~~56~~ **51**	No
R32*	1	49	50	53	No	~~57~~ **51**	No
R33*	1	50	51	52	No	~~53~~ **52**	No
R34*	1	50	51	52	No	~~53~~ **52**	No
R35*	1	50	51	53	No	~~54~~ **53**	No
R36*	1	52	53	53	No	~~54~~ **53**	No
R37*	1	52	53	53	No	54	No
R38*	1	53	54	56	No	57	No
R39*	1	54	55	55	No	56	No
R40*	1	55	56	55	No	56	No
R41*	1	57	58	55	No	56	No
R42*	1	57	58	57	No	58	No
R43*	1	60	61	59[†]	No[†]	59[†]	No[†]
R44	1	50	53	64	Yes[b]	64	Yes[b]
R45	1	50	53	55	No	57	No
R46	1	50	53	60	Yes [2]	~~55~~ **60**	~~No~~ **Yes**[b]
R47	1	50	53	66	Yes[a]	~~58~~ **N/A**	~~Yes~~ **Displaced**
R48	1	50	53	57	No	~~N/A~~ **57**	~~Displaced~~ **No**
R49	1	51	53	57	No	N/A	~~No~~ **Displaced**
R50	1	51	54	52	No	~~64~~ **58**	~~Yes~~[b] **No**
R51	1	52	55	55	No	63	Yes[b]
R52	3	79	79	79	No	79	No
R53	3	81	81	81	No	81	No
R54	2	80	81	81	No	81	No
R55	4	67	68	68	No	68	No
R56	2	77	77	77	No	77	No
R57	5	75	75	76	No	76	No
R58	2	74	74	76	No	76	No
R59	3	74	74	75	No	75	No
R60	2	73	73	71	No	71	No
R61	3	69	69	69	No	69	No
R62	1	72	72	70	No	70	No

[a] Project-generated noise level increases of 3 dBA L_{dn} or greater would be considered significant where exterior noise levels would exceed the normally acceptable noise level standard (65 dBA L_{dn}.
[b] Where noise levels would remain below the normally acceptable noise level standard with the project, noise level increases of 5 dBA L_{DN} or greater would be considered significant. (65 dBA L_{dn}).
* Noise receivers at these locations are subject to City of Atwater noise standards.
[†] Assumes that the subdivision will have a standard 6-foot wood fence along the property line.
Source: Illingworth & Rodkin, 2007.

SECTION 4

Alternatives 1A and 1B converge in Section 4, occupying the same alignment. **Figure 4.6-8** shows noise receivers in Section 4 of the project alignment. **Table 4.6-9** presents existing conditions and 2030 No Build conditions compared to 2030 project conditions. Under existing conditions, the primary source of noise within this section is vehicular traffic on SR 99 to the north and SR 140 to the south. There are several county roads in this section including Gurr Road and Buhach Road, which run north and south, and Elliot Avenue and Landram Avenue, which run east and west. In this area, housing is primarily located on individual acreages with no large subdivisions. A church is located alongside Buhach Road; however, noise levels are expected to remain the same with or without the construction of the AME.

Table 4.6-9 Section 4 - Existing and Predicted Noise Levels Shown in dBA, L_{dn}

	Number	No Build		Alternative 1A	
Receiver ID	of Homes Represented	Existing	2030 No Build	Predicted	Exceed Thresholds of Significance
R65	1	55	57	68	Yes[a]
R66	2	55	57	63	Yes[b]
R67	1	52	54	65	Yes[a]
R68	1	62	62	62	No
R69	1	50	53	66	Yes[a]
R70	1	51	53	58	Yes[b]
R71	1	50	52	52	No
R72	1	55	57	58	No
R73	1	57	59	58	No
R74	1	57	59	65	Yes[a]
R75	1	51	53	53	No
R76	1	54	56	58	No
R77	1	53	55	62	Yes[b]
R78	1	57	59	66	Yes[a]
R79	1	55	57	57	No
R80	1	65	70	70	No

[a] Project-generated noise level increases of 3 dBA L_{dn} or greater would be considered significant where exterior noise levels would exceed the normally acceptable noise level standard (65 dBA L_{dn}).
[b] Where noise levels would remain below the normally acceptable noise level standard with the project, noise level increases of 5 dBA L_{dn} or greater would be considered significant. (65 dBA L_{dn}).
Source: Illingworth & Rodkin, 2007.

Within this section, the project would construct a new section of four-lane expressway that would connect SR 99 to SR 140 with the existing intersection at Gurr Road and SR 140 as the ultimate point of connection. Approximately nine homes, represented by receivers R65 through R67, R69, R70, R74, R77, and R78, would experience noise levels in excess of Merced County noise standards.

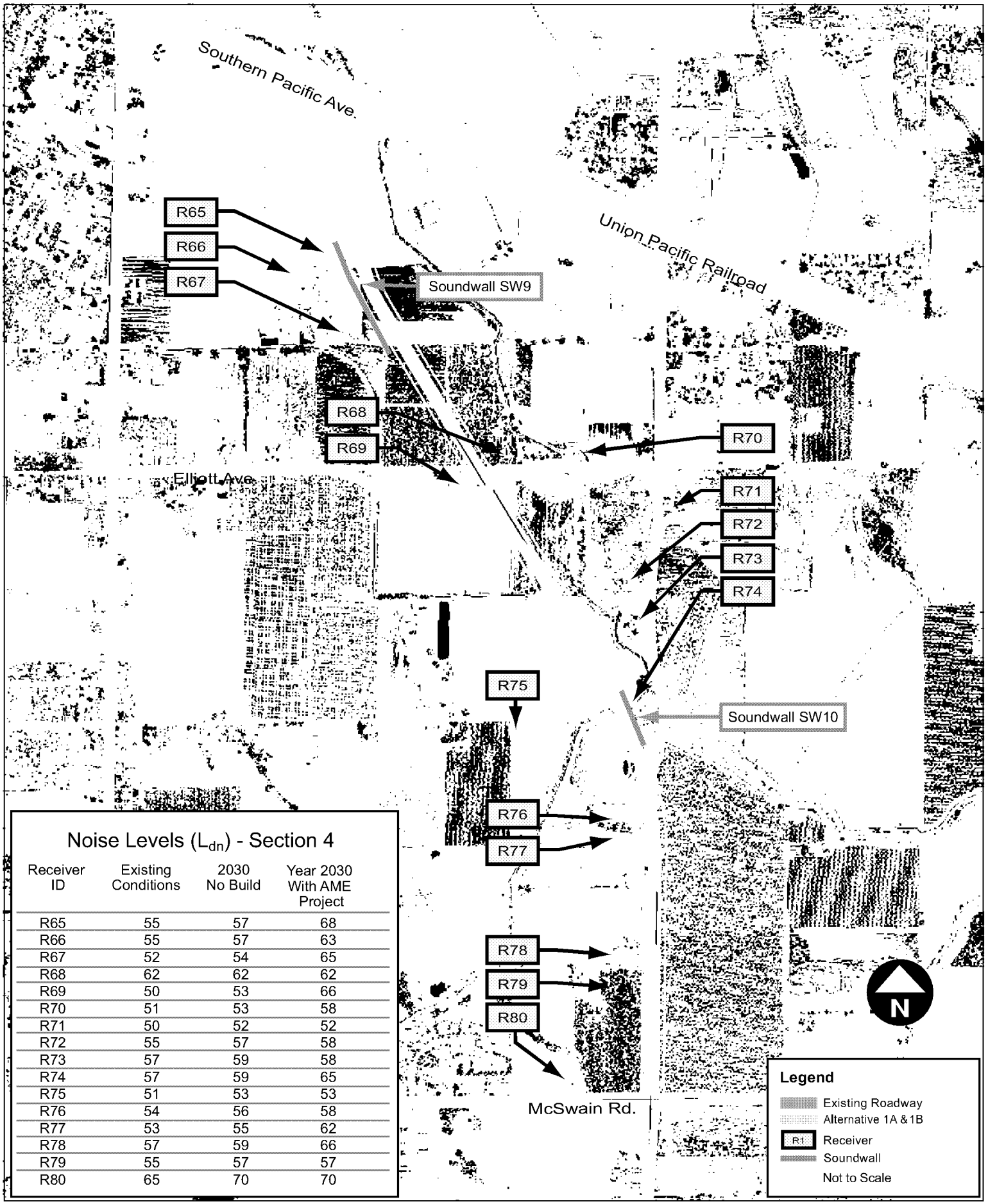
Table 4.6-10 summarizes the impacted noise receivers for all sections throughout the project area.

Table 4.6-10 Total Impacted Noise Receivers

		No Build		Alternative 1A		Modified Alternative 1B	
Receiver ID	Number of Homes Represented	Existing Conditions	2030 No Build	2030 With AME Project	Significant Impact?	2030 With AME Project	Significant Impact?
Section 1							
R1	2	58	64	73	Yes[a]	73	Yes[a]
R2	3	56	62	67	Yes[b]	67	Yes[b]
R4	1	54	61	72	Yes[b]	72	Yes[b]
R5	1	55	62	65	Yes[a]	65	Yes[a]
R8	1	54	62	65	Yes[a]	65	Yes[a]
R9	1	54	62	65	Yes[a]	65	Yes[a]
R10	2	55	63	66	Yes[a]	66	Yes[a]
R13	1	57	62	65	Yes[a]	65	Yes[a]
R14	2	50	55	60	Yes[b]	60	Yes[b]
R15	1	47	52	57	Yes[b]	57	Yes[b]
R16	1	41	46	53	Yes[b]	53	Yes[b]
R17	1	44	49	56	Yes[b]	56	Yes[b]
Section 2							
R22	1	45	48	57	Yes[b]	55	Yes[b]
Section 3							
R28	2	50	52	59	Yes[b]	54	No
R44	1	50	53	64	Yes[b]	64	Yes[b]
R46	1	50	53	60	Yes[b]	55	No
R47	1	50	53	66	Yes[a]	58	Yes[b]
R50	1	51	54	52	No	64	Yes[b]
R51	1	52	55	55	No	63	Yes[b]
Section 4							
R65	1	55	57	68	Yes[a]	68	Yes[a]
R66	2	55	57	63	Yes[b]	63	Yes[b]
R67	1	52	54	65	Yes[a]	65	Yes[a]
R69	1	50	53	66	Yes[a]	66	Yes[a]
R70	1	51	53	58	Yes[b]	58	Yes[b]
R74	1	57	59	65	Yes[a]	65	Yes[a]
R77	1	53	55	62	Yes[b]	62	Yes[b]
R78	1	57	59	66	Yes[a]	66	Yes[a]

[a] Project-generated noise level increases of 3 dBA L_{dn} or greater would be considered significant where exterior noise levels would exceed the normally acceptable noise level standard (65 dBA L_{dn}).
[b] Where noise levels would remain below the normally acceptable noise level standard with the project, noise level increases of 5 dBA L_{dn} or greater would be considered significant. (65 dBA L_{dn}).

Source: Illingworth & Rodkin, 2007.



Noise Levels (L_{dn}) - Section 4

Receiver ID	Existing Conditions	2030 No Build	Year 2030 With AME Project
R65	55	57	68
R66	55	57	63
R67	52	54	65
R68	62	62	62
R69	50	53	66
R70	51	53	58
R71	50	52	52
R72	55	57	58
R73	57	59	58
R74	57	59	65
R75	51	53	53
R76	54	56	58
R77	53	55	62
R78	57	59	66
R79	55	57	57
R80	65	70	70

ATWATER-MERCED EXPRESSWAY

Section 4 Noise Receivers

FIGURE 4.6-8

Source: Illingworth & Rodkin, Inc., May 2007

Mitigation Measure N-2:

The project sponsor shall use all available techniques, including the construction of sound walls or earthen berms, and/or the use of quiet paving materials, to reduce exterior noise levels at impacted noise receivers to meet Merced County noise standards.

Because of the rural nature of the project study area, it was recommended by Caltrans that a feasibility and reasonable cost allowance study be conducted to evaluate the costs associated with construction of soundwalls compared to the benefit they would provide. This analysis is provided in the noise study (Appendix D). The reasonableness allowance considers the absolute future noise level, the noise level increase caused by the project, the achievable reduction provided by a sound wall, and the age of the dwelling unit. A base reasonable cost allowance of $36,000 per benefited residence (or residential equivalent) was applied. The majority of the sound walls are considered feasible to construct, however, none of the sound walls evaluated would be considered reasonable under FHWA/Caltrans guidelines.

CEQA requires that significant impacts be mitigated to the extent possible and in most locations the use of a final coat of open graded asphalt concrete (OGAC) over the Portland Cement Concrete (PCC) roadway surface would reduce impacts to a less than significant level. The FHWA noise model indicates that there is a difference in noise generation of about 3-dBA between OGAC and PCC pavement types. Given a substantial traffic volume, recent research indicates differences of up to 10 dBA immediately adjacent to roadways. The use of OGAC is far more economical than the construction of sound walls. Therefore, where feasible and where its use would reduce noise levels below county standards, OGAC shall be used as the top layer of paving surface on the AME.

Some jurisdictions, including the FHWA, do not recognize the placement of OGAC alone as sufficient mitigation to reduce noise levels. Therefore, under existing guidelines, the paving on state (Caltrans) facilities with OGAC would not be considered adequate mitigation. In these cases, soundwalls shall be constructed to reduce noise levels at receiver locations below County standards.

Table 4.6-11 summarizes the impacted noise receivers, recommended mitigation measures, and level of significance after mitigation. Prior to project construction, if there are changes to FHWA guidelines whereby the use of OGAC, or another similar paving that substantially reduces sound generation, is approved for mitigation, the need to construct these soundwalls may be reevaluated.

After paving and soundwall mitigation, there is one receiver location (a home at location R-44) where sound levels would exceed county standards and where impacts would be considered significant under either alternative alignment. This receiver would experience exterior sound levels of 60 dBA, slightly above the County standard. This impact would be considered significant and unavoidable.

Significance After Mitigation: Significant and Unavoidable

Table 4.6-11 Noise Mitigation and Level of Significance after Mitigation

Receiver ID	Existing Conditions (L_{dn})	2030 No Build (L_{dn})	2030 AME (L_{dn})	2030 AME With Mitigation	Proposed Mitigation	Significance After Mitigation
Section 1 – Alternative 1A						
R-13	57	62	65	59	Soundwall 1 – 4,300 feet x 10 feet	Less than significant
R-14	50	55	60	57		Less than significant
R-15	47	52	57	55		Less than significant
R-16	41	46	53	51		Less than significant
R-17	44	49	56	54		Less than significant
Section 2 – Alternative 1A						
R-22	45	48	57	53	OGAC pavement	Less than significant
Section 2 – Modified Alternative 1B						
R-22	45	48	55	53	OGAC pavement	Less than significant
Section 3 – Alternative 1A						
R-28	50	52	59	55	OGAC Pavement	Less than significant
R-44	50	53	64	60	OGAC Pavement	Significant and unavoidable
R-47	50	53	66	57	Soundwall 3 – 1,300 feet x 14 feet or Soundwall 3 – 1,300 feet x 8 feet and OGAC pavement	Less than significant
R-46	50	53	57	58	Soundwall 4 – 1,200 feet x 12 feet or OGAC pavement	Less than Significant
Section 3 – Modified Alternative 1B						
R-44	50	53	64	60	OGAC Pavement	Significant and unavoidable
R-50	51	54	64	60	Soundwall 5 – 900 feet x 10 feet or OGAC pavement	Less than significant
Section 4 – AME						
R 65	55	57	68	61	Soundwall 6 – 1,550 feet x 10 feet or OGAC pavement	Less than significant
R 67	52	54	65	60		Less than significant
R 74	57	59	65	62	Soundwall-7 – 900 feet x 10 feet or OGAC pavement	Less than significant
R78	57	59	66	63	Soundwall-8 – 1,100 x 6 feet or OGAC pavement	Less than significant

Source: CirclePoint; Illingworth & Rodkin, 2008

4.7 AIR QUALITY

This section discusses impacts to air quality arising from construction and operation of the AME project. Air pollutants discussed in this section generally arise from mobile sources, including construction equipment and motor vehicles that would operate on the AME. The information provided in this section is primarily based on an air quality report prepared for the project site by Illingworth & Rodkin, Inc., June 2007. Information is also provided from the Merced County General Plan, the Merced County Association of Governments Regional Transportation Plan (RTP), and the San Joaquin Valley Air Pollution District (SJVAPCD).

4.7.1 EXISTING CONDITIONS

Climate and Topography

Regional air quality is determined by a variety of factors, such as the ability of wind and rain to dilute or disperse air pollutants. In addition to wind and rain, other factors can affect air pollution. For example, terrain can influence the potential for wind to disperse pollutants, and sunshine exposure can chemically alter airborne pollutants to create other pollutants such as ozone (O_3).

The AME project is located within the San Joaquin Valley Air Basin, which includes San Joaquin, Stanislaus, and Merced Counties in the northern portion of the Air Basin; Fresno, Madera and King Counties in the central portion of the Air Basin; and the valley portions of Kern and Tulare Counties in the southern end of the air basin. The Air Basin is approximately 250 miles long and is shaped like a narrow bowl. The Transverse Ranges to the south, the Sierra Nevada Range to the east, and the Coast Range to the west frame the basin. The SJVAB has an inland Mediterranean climate characterized by hot, dry summers and cool, foggy winters. Conditions during the summer months typically include high temperatures and low humidity, with prevailing winds from the north. Summer temperatures average approximately 90°F during the day and 55°F at night.

REGIONAL AIR QUALITY

During the winter, the Air Basin has light, variable winds of less than 10 miles per hour, which primarily blow from the northwest. On occasion, winds originate from the south and flow in a north-northwesterly direction. In addition to prevailing wind patterns that control the rate of dispersion of local airborne pollutants, the SJVAB experiences two types of inversions, or layers of air, that can affect air quality. The first type of inversion contributes to photochemical smog problems by confining pollution to a shallow layer of air near the ground. This occurs during the summer when sinking air from higher altitudes forms a "lid" over the region. The second type of inversion occurs when the air near the ground cools while the air above remains warm. These inversions occur during winter nights and can cause localized air pollutant "hot spots", or local concentrations of air pollutants, near emission sources due to poor dispersion.

Dispersion of air pollutants in the northern portion of the San Joaquin Valley is limited by persistent inversions and low surface wind speeds. In the summer, sinking air from the Pacific high-pressure system produces a persistent regional scale inversion, regularly trapping pollutants in the Valley. Year round, the

heights at which air mixes during the morning hours tends to be lower than during the afternoon. Light surface winds, and the physical barriers presented by mountain ranges to the east and west channel airflow and limit horizontal dispersion. The primary route through which air is ventilated is southeast over the Tehachapi Mountains to the Mojave Desert. Multi-day periods of stagnation occur during summer and winter, causing air pollutant levels to build up to peak concentrations.

Elevated inversions, common during summertime along with warm temperatures and abundant sunshine, lead to regional ozone problems. Ground-level ozone, the principal component of smog, is not directly emitted into the atmosphere but is formed by the reaction of reactive organic gases (ROG's) and nitrogen oxides (NO_2) (known as ozone precursor pollutants) in the presence of strong sunlight. Both ROG's and NO_2 are emitted by stationary sources, such as factories and homes, and by mobile sources, such as motor vehicles.

AIR QUALITY STANDARDS

Air quality is described by the concentration of various pollutants in the air. Air pollutants are typically measured in parts per million (ppm) or micrograms per cubic meter (µg/m3). Both the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established air quality standards for criteria pollutants. These pollutants are identified as "criteria" pollutants because they are considered the most prevalent air pollutants known to be hazardous to human health. Criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3), particulate matter less than or equal to 10 microns in diameter (PM_{10}), particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). ozone, PM_{10}, and $PM_{2.5}$ are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as CO, NO_2, SO_2, and Pb are considered to be local pollutants because they tend to accumulate in the air locally. PM_{10} and $PM_{2.5}$ are also considered to be localized pollutants because they tend to accumulate rather than disperse into a wider area. The federal government maintains National Ambient Air Quality Standards (NAAQS) for each of the criteria pollutants. Similarly, California maintains California Ambient Air Quality Standards (CAAQS). In general, the CAAQS are more stringent than the NAAQS. This is particularly true for ozone and PM_{10} and $PM_{2.5}$.

Air quality in the San Joaquin Valley Air Basin is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD develops local air quality control strategies and plans to attain and maintain standards established by California and the U.S. Environmental Protection Agency (USEPA).

Table 4.7-1 describes both NAAQS and CAAQS and the SJVAPCD's attainment status for each set of standards. Under the Federal Clean Air Act, the SJVAPCD is designated as a serious nonattainment area for eight hour concentrations of O_3, moderate nonattainment area for PM_{10} and nonattainment for $PM_{2.5}$. The SJVAPCD is considered in attainment (levels are below standards) or unclassified for all other pollutants regulated by the Federal Clean Air Act. Under the California Clean Air Act, the SJVAPCD is considered serious nonattainment for the 1-hour state ozone standard and nonattainment for PM_{10} and $PM_{2.5}$ standard. The area is considered in attainment (levels are below standards) or unclassified for all other pollutants regulated by the California Clean Air Act.

Table 4.7-1 San Joaquin Valley Air Basin Attainment Status

Pollutant	Averaging Time	NAAQS	Status	CAAQS	Status
Ozone (O_3)	1-Hour	--	No Federal Standard[a]	0.09 ppm (180 $\mu g/m^3$)	**Nonattainment/Severe**
	8-Hour	0.08 ppm (157 $\mu g/m^3$)	**Nonattainment/Serious**	0.070 ppm (137 $\mu g/m^3$)	**Nonattainment**
PM_{10}	24-Hour	150 $\mu g/m^3$	**Nonattainment/Serious**	50 $\mu g/m^3$	**Nonattainment**
	Annual Arithmetic Mean	--	Revoked[b]	20 $\mu g/m^3$	**Nonattainment**
$PM_{2.5}$	24-Hour	35 $\mu g/m^3$	**Nonattainment**	--	No State Standard
	Annual Arithmetic Mean	15 $\mu g/m^3$	**Nonattainment**	12 $\mu g/m^3$	**Nonattainment**
Carbon Monoxide (CO)	8-Hour	9 ppm (10 $\mu g/m^3$)	Unclassified/Attainment	9.0 ppm (10 $\mu g/m^3$)	Unclassified
	1-Hour	35 ppm (40 $\mu g/m^3$)	Unclassified/Attainment	20 ppm (23 $\mu g/m^3$)	Unclassified
Nitrogen Dioxide (NO_2)	1-Hour	--	Unclassified/Attainment	0.18 ppm (338 $\mu g/m^3$)	Attainment
	Annual Arithmetic Mean	0.053 ppm (100 $\mu g/m^3$)	Unclassified/Attainment	0.030 ppm (56 $\mu g/m^3$))	Attainment
Sulfur Dioxide (SO_2)	24-Hour	0.14 ppm (365 $\mu g/m^3$)	Unclassified	0.04 ppm (105 $\mu g/m^3$)	Attainment
	3-Hour	--	Unclassified	--	Attainment
	1-Hour	--	Unclassified	0.25 ppm (655 $\mu g/m^3$)	Attainment
	Annual Arithmetic Mean	0.030 ppm (80 $\mu g/m^3$)	Unclassified	--	No State Standard
Lead (Particulate) (Pb)	30-Day Average	--	No Federal Standard	1.5 $\mu g/m^3$	Attainment
	Calendar Quarter	1.5 $\mu g/m^3$	Unclassified	--	No State Standard
Hydrogen Sulfide	1-Hour	--	No Federal Standard	0.03 ppm (42 $\mu g/m^3$)	Unclassified
Sulfates	24-Hour	--	No Federal Standard	25 $\mu g/m^3$	Attainment
Vinyl Chloride	24-Hour	--	No Federal Standard	0.01 ppm (26 $\mu g/m^3$)	Unclassified
Visibility Reducing Particles	8-Hour	--	No Federal Standard	--	Unclassified

Notes: ppm = parts per million and ug/m3 = micrograms per cubic meter.

[a] The Federal 1-hour ozone National Ambient Air Quality Standard was revoked on June 15, 2005.

[b] Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the USEPA revoked the annual PM_{10} standard in 2006 (effective December 17, 2006).

Source: http://valleyair.org/aqinfo/attainment.htm.

LOCAL AIR QUALITY

The AME project area is predominately agricultural in nature with some residential and commercial development scattered throughout the project area. The project alignment would connect to two state highways, SR 59 and SR 140, and cross SR 99, a principal arterial route that connects the City of Atwater with the City of Merced. The principle source of mobile emissions in this area comes from motor vehicles operating on these and other area roadways.

Children, the elderly, and people suffering from respiratory ailments are more susceptible to poor air quality. Land uses such as schools, hospitals, convalescent hospitals, and residences are considered to be sensitive land uses for purposes of assessing air quality impacts. There are no playgrounds, hospitals, or convalescent hospitals located within 500 feet of either project alternative alignment. The nearest existing school to the project is Buhach Colony High School, which is located approximately 1,400 feet (.28 miles) from the proposed right of way for **Modified** Alternative 1B and 2,900 feet (.55 miles) from Alternative 1A.

The Atwater Elementary School District has plans for a future school located on a site within the project study area on the north side of West Avenue One, bordered on the north by an agricultural irrigation canal. At this time, the school is planned to serve 800 pre-school through 8th grade students beginning in the 2009-2010 school year. ~~The Alternative 1B right of way would cross the parcel proposed for the future school.~~ **Both** Alternative 1A **and Modified Alternative 1B** would be located in close proximity to the school site, approximately 250 feet from the southeast corner **to the center line of the AME under either alternative** and **approximately** ~~750~~ **400** feet from the northeast corner **to the centerline of the AME under Modified Alternative 1B**.

Table 4.7-2 shows ambient air quality measurements for the Merced area for the 2001 through 2005 monitoring period. During this period, there were violations of the state 24-hour PM_{10} standard, the state annual PM_{10} standard, the state 1-hour ozone standard, the federal 24-hour $PM_{2.5}$ standard, and the federal 8-hour ozone standard. The values shown in bold exceed ambient federal and California air quality standards.

4.7.2 REGULATORY SETTING

Federal, State and Regional Setting

Air quality within the San Joaquin Valley Air Basin is regulated by federal, state, regional, and local agencies. The following section discusses each of the relevant agencies and the laws, regulations, and policies that are used to address air quality within the SJVAB.

U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA)

The Federal Clean Air Act of 1970 (42 U.S.C. §§ 7401 et seq. (as amended)) places responsibility for maintenance of clean air standards with the USEPA. The USEPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities pertaining to management of air quality to state and local agencies. The Clean Air Act establishes National Ambient Air Quality Standards (NAAQS), as described in **Section 4.7.1.2**, above, for six of the most prevalent air pollutants known to be hazardous to human health. Areas throughout the country are classified as either being in "attainment" or "nonattainment" with respect to NAAQS. These classifications are made by comparing actual monitored air

pollutant concentrations to federal standards. States found to be in "nonattainment" for criteria pollutants are required to develop State Implementation Plans (SIPs) describing how they will satisfy NAAQS.

Table 4.7-2 Merced Area Ambient Air Quality

Pollutant	Average Time	Year				
		2001	2002	2003	2004	2005
Merced – S. Coffee Avenue – Monitoring Station						
Ozone (O_3)	1-Hour[a]	**0.11 ppm**	**0.14 ppm**	**0.12 ppm**	**0.11 ppm**	**0.10 ppm**
	8-Hour	**0.11 ppm**	**0.13 ppm**	**0.11 ppm**	**0.11 ppm**	**0.09 ppm**
Nitrogen Dioxide (NO_2)	1-Hour	0.07 ppm	0.07 ppm	0.06 ppm	0.06 ppm	0.06 ppm
	Annual	NA[b]	0.01ppm	0.01ppm	0.01ppm	0.01ppm
Merced – 2334 M Street – Monitoring Station						
Fine Particulate Matter (PM_{10})	24-Hour	**117 µg/m3**	**88 µg/m3**	**75 µg/m3**	**57 µg/m3**	**75 µg/m3**
	Annual	**42 µg/m3**	**40 µg/m3**	**33 µg/m3**	**29 µg/m3**	**29 µg/m3**
Respirable Particulate Matter ($PM_{2.5}$)	24-Hour	80 ug/m3	66 ug/m3	47 ug/m3	**53 ug/m3**	**54 ug/m3**
	Annual	NA	19 ug/m3	16 ug/m3	**15 ug/m3**	**14 ug/m3**
Turlock– S. Minaret Street – Monitoring Station						
Carbon Monoxide (CO)	8-Hour	3.1 ppm	2.7 ppm	2.3 ppm	1.8 ppm	2.3 ppm
San Joaquin Valley (Basin Summary)						
Ozone (O_3)	1-Hour	**0.15 ppm**	**0.16 ppm**	**0.16 ppm**	**0.16 ppm**	**0.13 ppm**
	8-Hour	**0.12 ppm**	**0.13 ppm**	**0.13 ppm**	**0.13 ppm**	**0.11 ppm**
Carbon Monoxide (CO)	8-Hour	6.0 ppm	4.5 ppm	4.1 ppm	3.0 ppm	3.0 ppm
Nitrogen Dioxide (NO_2)	1-Hour	0.11 ppm	0.08 ppm	0.09 ppm	0.08 ppm	0.09 ppm
	Annual	**0.115ppm**	**0.107ppm**	0.015ppm	0.014ppm	0.014ppm
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	NA	NA	NA	NA	NA
	Annual	NA	NA	NA	NA	NA
Respirable Particulate Matter (PM_{10})	24-Hour	**221 µg/m3**	**194 µg/m3**	**150 µg/m3**	**219 µg/m3**	137 µg/m3
	Annual	**52 ug/m3**	**60 ug/m3**	**52 ug/m3**	**44 ug/m3**	**45 ug/m3**

Notes: **Text in bold** indicates levels surpassing NAAQS or CAAQS
ppm = parts per million and ug/m3 = micrograms per cubic meter

[a] The federal 1-hour ozone standard was revoked in 2005.

[b] NA = data not available.

Source: California Air Resources Board Air Quality Data website http://www.arb.ca.gov/aqd/aqdpage.htm.

CALIFORNIA AIR RESOURCES BOARD (CARB)

The California Air Resources Board (CARB), a subdivision of the California Environmental Protection Agency (Cal/EPA), is the agency responsible for coordinating both state and federal air pollution control programs in California, including SIPs. CARB regulates local air quality indirectly by establishing vehicle emission standards through its planning, coordinating, and research activities. The California Clean Air Act of 1988 (Cal. H&S Code, Div. 26 (amended in 1992)) requires attainment of California Ambient Air Quality Standards (CAAQS). In many cases, these standards are more stringent than the national standards. This is particularly true for ozone and PM_{10} and $PM_{2.5}$. **Table 4.7-3** below describes criteria pollutants.

Table 4.7-3 Criteria Pollutants

Pollutant	Major Sources	Characteristics	Health Effects
Ozone (O_3)	Ozone precursors are produced by motor vehicles, aircraft, ships, power plants, solvent and fuel evaporation.	Ozone is created by a photochemical reaction caused by exposure of sunlight to Reactive Organic Gasses (ROG's) and Nitrogen Oxide. Ozone is most frequently referred to as smog.	▪ Eye irritation ▪ Respiratory function impairment
Carbon Monoxide (CO)	Major sources of Carbon Monoxide include motor vehicle exhaust, aircraft, ships, power plants, factories, and combustion of wood in woodstoves and fireplaces.	Carbon Monoxide is a highly toxic odorless, colorless gas. It is formed when the carbon in fuels is not burned completely during combustion.	▪ Impairment of oxygen transport in the bloodstream ▪ Aggravation of cardiovascular disease ▪ Fatigue, headache, confusion, dizziness ▪ Can be fatal in the case of very high concentrations
Nitrogen Dioxide (NO_2)[a]	The primary manmade sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels.	Nitrogen oxides form when fuel is burned at high temperatures, as in a combustion process. NOx can also be formed naturally.	▪ Increased risk of acute and chronic respiratory disease
Sulfur Dioxide (SO_2)	The primary source of SO_2 is electric utilities, factories that use metallic ore, coal, and crude oil, locomotives, ships, and some nonroad diesel equipment.	SO_2 is a colorless gas with a pungent, irritating odor.	▪ Aggravation of chronic obstructive lung disease ▪ Increased risk of acute and chronic respiratory disease
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particulate matter is emitted from construction activities, unpaved roads, fields, smokestacks, power plants, factories and motor vehicles.	Particulate matter is made up of particles of acids, organic chemicals, metals, and soil or dust.	▪ Aggravation of chronic disease and heart/lung disease symptoms

[a] NOx = Nitrogen Oxides. NO2, or Nitrogen Dioxide, is a Nitrogen Oxide.

Source: U.S. Environmental Protection Agency.

THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

The SJVAPCD regulates stationary emissions sources and some emission producing industries, such as dairies, in accordance with federal, state, and local regulations, and develops local air quality control strategies, including plans to attain the state ozone and PM_{10} standards and to maintain attainment of other air quality standards. As the Air Basin is classified as being in nonattainment for the state ozone standard, it is required to prepare an air quality attainment plan, which is updated every three years. The District's 2003 Air Quality Attainment Plan for the San Joaquin Valley Air Basin includes strategies to reduce ground level ozone.

The SJVAPCD adopted the Indirect Source Review Rule (Rule 9510) in 2006 to reduce ozone precursor (i.e., ROG and NO_x) and PM_{10} emissions from new development projects. The rule is the result of state requirements outlined in the regional portion of the State Implementation Plan (SIP). Rule 9510 applies to any transportation project where the construction exhaust emissions equal or exceed two tons of NO_2 or two tons of PM_{10} per year. Transportation projects are exempt from the operational emissions reduction requirements of Rule 9510, but must comply with reduction requirements for emissions resulting from construction activities.

The SJVAPCD's SIP commitments are contained in the 2004 PM_{10} and Extreme Ozone Attainment Demonstration Plans, which identify the need to reduce PM_{10} and NO_2 in order to reach the ambient air-pollution standards on schedule. New projects which are subject to this rule are those that would generate substantial air pollutant emissions. The rule requires that transportation projects should mitigate construction emissions by applying SJVAPCD-approved mitigation measures or by paying fees to support programs that reduce emissions. Fees are based on estimated costs to reduce emissions and include expected costs to cover administration of the program. The SJVAPCD estimates that compliance with this rule will reduce NO_2 and PM_{10} emissions by ten tons per day throughout the San Joaquin Valley.

California Department of Education

In 2003, Senate Bill 352 (SB 352), expanded the requirements that a school district must follow in identifying and reviewing the impacts of hazardous air emitters and hazardous material handlers within 1/4-mile of a new school site. New requirements for school sites within 500 feet of a busy freeway or traffic corridor were stipulated. These apply to school sites near roadways with more than 50,000 vehicles per day in rural areas. Thus, if a proposed school site boundary is within 500 feet of a busy roadway, the school district must determine if air quality at the site poses a significant health risk to students.

Local Setting

In addition to the regulations promulgated by the USEPA and CARB and efforts undertaken by the SJVAPCD, local governments including the Merced County Association of Governments (MCAG), Merced County, and the City of Atwater also establish policies and provide objectives and goals relevant to air quality management.

MERCED COUNTY ASSOCIATION OF GOVERNMENTS REGIONAL TRANSPORTATION PLAN

As planning agency for the Merced County area, the Merced County Association of Governments is responsible for producing a Regional Transportation Plan (RTP). The following goal, objective, and associated policies are included in the RTP.

GOAL: Achieve air quality standards set by the Environmental Protection Agency (EPA), and the State Air Resources Board.

Objective 9.1 Coordinate transportation planning with air quality planning at the technical and policy level.

Policy 9.1.1 Assist the San Joaquin Valley Air Pollution Control District to develop the transportation-related portions of the State Implementation Plan for air quality.

Policy 9.1.2 Evaluate and assist in the implementation of appropriate transportation control measures.

Policy 9.1.3 Support the expeditious implementation of transportation control measures identified in the State Implementation Plan for Merced region jurisdictions.

Policy 9.1.4 As required by federal regulation, give funding priority to transportation control measures.

MERCED COUNTY GENERAL PLAN

The Merced County General Plan includes the following objectives and policies for a maintaining air quality within the county.

Objective 2.F Air quality which meets or exceeds local and regional air quality management goals.

Policy 24 Evaluate potential air quality impacts through the environmental review of all development projects which may significantly increase air emissions.

Policy 25 The County will assist in voluntary efforts to improve air quality through regional cooperation and will resist efforts to create additional State air pollution mandates which are contrary to the overall goals of the General Plan.

CITY OF ATWATER GENERAL PLAN

GOAL CO-3: Strive to reduce air emissions and obtain goals set in local and regional air quality attainment plans.

Policy CO-3.1 Cooperate with the San Joaquin Valley Unified Air Pollution Control District (APCD) in implementing air quality improvement plans prepared by the District.

Implementation Program CO.3.c: Incorporate as a condition of approval for projects that include significant grading or other earth moving activities measures that control emissions of dust.

Policy Consistency Analysis

Transportation projects are obligated to comply with federal, state, regional, and local air quality management goals as established in the planning documents described above. In general, the AME project would comply with all applicable policies. As previously discussed, the AME project is located in an area that is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$. As required by both federal and state law, the SJVAPCD has developed a State Implementation Plan (SIP) to address the Air Basin's nonconformity with these standards. Federal law requires that federally funded or approved transportation plans, programs, and projects demonstrate conformity with the SIPs or other applicable air quality management plans created to attain the NAAQS. Transportation projects in federally listed non-attainment areas must be found to conform to the current SIP. Each nonattainment region in the state submits its emissions budgets and strategies for reducing air emissions or air pollutants that are above the NAAQS to the CARB, which prepares the SIP. The Regional Transportation Plan (RTP) established by MCAG, contains a long-range plan for transportation projects, including emissions budgets that conform to the SIP. Projects included in the RTP are included in a SIP mandated air quality analysis, demonstrating that the RTP is in compliance with emissions budgets established by the SJVAPCD's SIPs. Although the AME project is not federally funded, it project was included in the 2007 RTP and was subsequently found to conform to the emissions budgets included in the SIPs.

As the AME project is accounted for in emissions budgets included in the MCAG RTP, emissions from motor vehicle operations on the roadway are considered to have been accounted and planned for and would therefore not result in a new violation of any air quality standards. However, construction activities may result in possible violations of the SJVAPCD's Rule 9510, described above. The AME project is anticipated to likely generate two tons or more of NO_x emissions per year as a result of construction equipment exhaust emissions. Appropriate mitigation as described in the following sections would bring these aspects of the project into compliance with applicable regulations and policies.

As the AME project would not impinge upon local and regional air quality management goals, it conforms with the goals, objectives, and policies established by Merced County and the City of Atwater.

A new school is planned to the west of the AME. The proposed school site (Avenue One school site) would be located approximately 250 feet from the AME at its closest point under both build Alternatives. State law requires that the California Department of Education require a school district to address air quality impacts for schools located near busy roadways. School sites located within 500 feet of rural roadways must determine if health risks to students posed by traffic would be significant.

Diesel engines emit a complex mix of pollutants, the most visible of which are very small carbon particles known as diesel particulate matter (DPM). Diesel exhaust also contains over 40 cancer-causing substances, most of which are readily adsorbed on the DPM. In 1998, California identified DPM as a toxic air contaminant based on its potential to cause cancer, premature death, and many other health problems. In addition, several international and national health agencies have concluded that diesel exhaust has the potential to contribute to cancer and other health effects. A screening health risk assessment for exposure to DPM was conducted and determined that neither Alternative for the AME project would pose a significant health risk to students attending the Avenue One school site. Since risk from DPM was well below the health risk criteria (about 10

percent or less of the cancer risk criteria of 10 in one million), additional analysis to include other toxic air contaminants that cumulatively would have had a much lower health risk was not conducted.

4.7.3 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. As identified in Appendix G, the project would have a significant air quality impact if it would:

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

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

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

d) Expose sensitive receptors to substantial pollutant concentrations.

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

f) Additional emission thresholds are contained in the Guide for Addressing and Mitigating Air Quality Impacts produced in 2002 by the SJVAPCD. These thresholds of significance are summarized below.

- Produce greater than ten (10) tons per year of ROG;
- Produce greater than ten (10) tons per year of NO_x;
- Exceed the NAAQS or CAAQS for CO; or
- Not comply with SJVAPCD's regulation VIII regarding particulate emissions from construction activities.

2030 AME CONDITIONS

The following sections describe impacts associated with construction and operation of the AME under 2030 project conditions.

Less Than Significant Impacts

The AME project would not result in a cumulatively considerable net increase of those criteria pollutants for which the project region is in non-attainment under NAAQS or CAAQS.

The San Joaquin Valley Air Basin is currently in nonattainment of both NAAQS and CAAQS for ozone, PM_{10}, and $PM_{2.5}$. Both construction of the proposed project and motor vehicle operations on the AME

would result in regional emissions of ozone precursors (nitrogen oxides and ROG's), carbon monoxide, and PM_{10}. However, as discussed above, the SJVAPCD has developed SIPs to address the Air Basin's nonconformity with these standards. As required under both federal and state law, the MCAG RTP must be developed in conformity with regional SIPs. Projects included in the RTP are included in mandatory air quality analyses, demonstrating that the RTP is in compliance with emissions budgets established by the SJVAPCD's SIPs. The AME project was included in the 2007 RTP and was subsequently found to conform to the emissions budgets included in the SIPs. Therefore, emissions associated with the AME project have already been accounted and planned for and the AME project would not result in a cumulatively considerable net increase of criteria pollutants for which the region is in nonattainment and this impact would be less-than-significant.

The AME project would not exceed the NAAQS or CAAQS for Carbon Monoxide and would not create pollutant "hot spots."

Project impacts from local traffic were evaluated by modeling roadside carbon monoxide concentrations. The modeling was conducted for certain intersections in the project area where there would be a combination of the highest traffic volumes, greatest project traffic contribution, and highest level of congestion. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide, or "hot spots." Of the two standards for carbon monoxide, the 8-hour standard is the more stringent. Therefore, the analysis evaluated impacts against the 8-hour standard. Both the federal and state standards for 8-hour concentrations of carbon monoxide is 9.0 ppm. The 8-hour carbon monoxide background, or ambient level for the AME project area is 2.0 ppm. **Table 4.7-4** shows that with the proposed project, none of the modeled locations would have an estimated CO level exceeding any state or federal CO standard under 2030 conditions with project.

Table 4.7-4 Projected Worst-Case CO Concentrations, in Parts Per Million

	NAAQS		CAAQS		Existing Conditions (2006)		2030 AME	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
R Street and Olive	20.0	9.0	35.0	9.0	8.6	6.0	4.7	3.3
SR 59 and Bellevue Ave.	20.0	9.0	35.0	9.0	5.8	4.1	3.9	2.7

Source: Illingworth & Rodkin, Inc., 2007.

The results indicate that current carbon monoxide concentrations are below ambient air quality standards and that future levels with the AME project would remain below the standards. The predicted decrease in future levels is due to vehicle fleet turnover, with newer (less polluting) vehicles replacing older vehicles. Due to lower emissions for vehicles in the future there will be a reduction in CO emissions over the period between 2006 and 2030 even with forecasted increases in traffic. Since carbon monoxide levels associated with the project would not exceed ambient air quality standards, the impact would be considered less than significant. Further discussion on project area traffic can be found in **Section 4.5, Traffic and Transportation**.

The AME Project would not create objectionable odors affecting a substantial number of people.

The AME project is for a roadway in an area that is generally rural in character with primarily agricultural uses and limited residential development. While construction equipment on site will generate some objectionable odors primarily arising from diesel exhaust, these emissions will generally be limited to the project site and will be temporary in nature. The majority of potential sensitive receptors are located at sufficient distance from the project site.

There are currently a number of parcels that contain large numbers of livestock, primarily cattle, along the proposed route of the AME. These livestock operations can create large quantities of waste that can cause objectionable odors. Motorists traveling on the AME may find these odors objectionable. However, the AME project would not directly cause these odors and these motorists would pass through these areas relatively quickly. Therefore, any effects would be temporary and considered a less-than-significant impact.

The AME project would not conflict with or obstruct implementation of the applicable air quality plan.

CARB has determined that the MCAG RTP emission projections are consistent with the region's emissions budget. The project design and scope evaluated in this analysis were included in Federal Transportation Improvement program (FTIP) and the RTP and have not changed since the FTIP and RTP were found to conform to the SIP. This determination of conformity to the SIP is based on the latest planning assumptions regarding land use and travel forecasts. Comparisons of the AME project corridor to other more severely congested roadway segments and hot spot modeling of CO concentrations from project traffic indicate that CO concentrations attributable to the proposed project would not increase the number or severity of exceedances of the NAAQS or CAAQS. Therefore, under federal regulations, the proposed project is found to be in conformance with the SIP and no impacts are anticipated.

The AME project would not expose sensitive receptors to substantial pollution concentrations.

The project would construct a new expressway between the Cities of Atwater and Merced. The result of this project is that traffic would be shifted from the existing roadway network and, as a result would improve the level of service on all the roadways adjacent to the project. The areas that would potentially be exposed to the highest emissions from traffic patterns affected by the project would be located directly adjacent to the AME.

Diesel particulate matter (DPM) is a known toxic air contaminant (TAC) due to the potential to cause cancer. The California Air Resources Board (CARB) has recommended that local communities maintain buffers of 500 feet between new sensitive receptors, such as proposed school sites, and freeways or busy arterial roadways. Busy arterials were identified as those having 100,000 average daily car trips and 20,000 truck trips or greater. The CARB recommendations are primarily based on the cancer risk that diesel particulate matter exposure poses. The 22,000-37,000 trips per day and 3,000 truck trips per day (based on eight percent truck volume) ~~for the~~ **that are forecast to be travelling on the** AME are well below the CARB thresholds. **Additionally, the San Joaquin Valley Air Pollution Control District (SJVAPCD) considers an air pollution source to be significant if it increases cancer risk by 10 cases per million.** ~~CARB guidance for the protection of public health indicates that localized~~

~~impacts are of concern within 500 feet of high volume roadways and has established thresholds of 100,000 car trips per day and 20,000 truck trips per day.~~

~~Alternative 1A would be located approximately 250 feet from the southeast corner of a new school site. However, despite the relatively close proximity of the alignment to the school, exposure to emissions would be minimal due to the low level of traffic operating on the roadway.~~

~~**Modified** Alternative 1B would be located on the school site, requiring acquisition of the school property and relocation of the school. As relocation of the school site would be necessary were Alternative 1B selected, no sensitive receptors would be exposed to substantial pollution concentrations. Impacts associated with relocating the future school site are discussed in **Section 4.14, Public Services**.~~

Because both AME Alternatives are located near the Avenue One school site the exposure of students to DPM is a concern. As required by SB 352, school districts are required to determine if significant health risks would occur when locating new schools within 500 feet of busy roadways. Under State law, a rural roadway with 50,000 daily trips is considered a busy roadway. Although the AME would have lower traffic volumes, the school site would be about 250 feet at the closest point to the AME. For this reason, a screening health risk was performed to assess the potential cancer risk that the AME project may pose for the school (refer to Appendix E). This assessment evaluated roadway geometrics, traffic projections, modeled DPM emission rates, and screening meteorology. This information was used in the Cal3qhcr model to predict DPM concentrations and the associated incremental cancer risks due to the modeled DPM concentrations near the Avenue One school site with implementation of the AME were computed. These computations took into account the type of receptor (i.e., child), the duration of exposure (i.e., 9 years for a child). The children (students) are assumed to be at the school 8 hours per day, 180 days per year. The screening health risk analysis was performed for Modified Alternative 1B because it is the closest alternative to the Avenue One school site. The cancer risk associated with DPM exposure was calculated following SJVAPCD guidance. Results indicated that the risk posed by traffic on the AME would be an increased cancer risk of 0.34 excess cases per million students exposed at the Avenue One school site. Thus, the incremental cancer risk would be well below the SJVAPCD recommended significance threshold of 10 excess cases per million. Therefore, both Alternative 1A and Modified Alternative 1B would have a less than significant impact in regards to the exposure of sensitive receptors to substantial pollution concentration.

Significant Impacts

Impact AQ-1: The AME project would result in temporary increases in PM_{10} emissions requiring compliance with SJVAPCD's Regulation VIII.

Construction of the AME would result in numerous activities that would generate dust. Grading, earthmoving and excavation are the activities that generate the most PM_{10} emissions. While impacts arising from generation of PM_{10} would be localized and variable, construction dust impacts are considered to be potentially significant on a localized basis. Therefore, AME project construction is subject to standard mitigation as required by the SJVAPCD.

Mitigation Measure AQ-1:

To control the generation of construction-related PM_{10} emissions, MCAG shall comply with SJVAPCD Regulation VIII, as summarized below:

- ~~Several PM_{10} dust controls shall be required to be implemented at all construction sites.~~

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

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

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

- When materials are transported on or 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.

- 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).

- 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.

- 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.

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

- Limit traffic speeds on unpaved roads to 15 mph; and

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

Conformity with the best management practices established in SJVAPCD's Regulation VIII would limit the generation and release of particulate matter resulting from construction activities. Therefore, any impacts would be less than significant.

Significance After Mitigation: Less than Significant

Impact AQ-2: The AME project would result in temporary impacts arising from elevated concentrations of PM_{10} and CO, as well as increased emissions of ROG's and NO_2 due to project construction.

Construction within the project site would result in numerous activities that would generate emissions from construction equipment engines that can contribute to elevated concentrations of PM_{10} and CO, as well as increased emissions of ozone precursors (ROG's and NO_2). Impacts would be localized and variable. While the SJVAPCD does not require Lead Agencies to provide detailed quantification of construction emissions, these emissions are considered to be potentially significant on a localized basis, and therefore are subject to mitigation as recommended by the SJVAPCD.

Mitigation Measure AQ-2:

The AME project shall comply with San Joaquin Valley Air Pollution Control District recommended measures as listed below:

- Use of alternative fueled or catalyst diesel construction equipment
- Minimize idling time (e.g., 10 minute maximum)
- Limit the hours of operation of heavy duty equipment and/or the amount of time in use
- When feasible replace fossil-fueled equipment with electrically driven equivalent (provided they are not run via a portable generator set)
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways
- Implement activity management (e.g., rescheduling activities to reduce short term impacts)
- Comply with Rule 4641 of the SJVAPCD – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations

Conformity with the above measures will reduce emissions of PM_{10} and CO, as well as emissions of ROG's and NO_2. Properly managing the amount of time emissions producing equipment is utilized and substituting electrical equipment for fossil fueled equipment whenever feasible, will reduce overall emissions, reducing this impact to a less-than-significant level.

Significance After Mitigation: Less than Significant

Impact AQ-3: Construction of the AME project would result in generation of more than two tons of NO_2 in non-conformance with SJVAPCD Rule 9510.

Construction of the AME project would generate substantial air pollutant emissions and is subject to Rule 9510, Indirect Source Review (ISR). The rule requires that transportation projects mitigate construction emissions by applying SJVAPCD-approved mitigation measures or by paying fees to support programs that reduce emissions. This project would likely generate two tons or more of NO_2 construction exhaust emissions per year, and is therefore subject to the Rule 9510.

Mitigation Measure AQ-3:

The AME project shall comply with San Joaquin Valley Air Pollution Control District Rule 9510 by achieving:

- a 20 percent NO2 and 45 percent PM10 reduction in exhaust emissions compared to the statewide fleet average. This can be met by implementing one or more of the following:
- Retrofitting existing equipment with control devices,
- Using cleaner fuels,
- Operating newer than average equipment,
- Payment of a mitigation fee to District to obtain reductions through grant and incentive programs.

Compliance with the above requirements will reduce emissions of NO2 through the utilization of fuels that produce less of this pollutant and maximizing efficient use of fuel through use of newer than average equipment utilizing appropriate control devices. Furthermore, in the event that emissions targets are not me on-site through implementation of the other measures, payment of a mitigation fee to the SJVAPCD would help reduce emissions of NO_2 in other areas of the Air Basin by helping to fund more effective air quality measures elsewhere. Implementation of the above mitigation measures would reduce this impact to a less-than-significant level.

Significance After Mitigation: Less than Significant

4.8 GEOLOGY, SOILS, AND SEISMICITY

This section describes existing geological and soil conditions in the Atwater-Merced area and evaluates whether implementation of the Atwater-Merced Expressway project would expose people or structures to major geologic hazards. This section is primarily based on a Preliminary Geotechnical Report prepared by Parikh Consultants, Inc. in September 2006. The section also includes a discussion of project consistency with applicable policies from the County of Merced General Plan, City of Atwater General Plan, and City of Merced General Plan. Mitigation measures are recommended to reduce or eliminate any identified significant impacts.

4.8.1 EXISTING CONDITIONS

Regional Geology

The proposed project study area is located in Merced County, in California's Central Valley. The Central Valley is bounded by the Cascade Range to the north, the Sierra Nevada Mountains to the east, the Tehachapi Mountains to the south, and the Coast Range and the San Francisco Bay to the west. The Central Valley is generally flat in topography, in contrast to the rugged mountains or gentle hills that surround it and that characterize much of California's terrain. It is thought that the Central Valley was originally below sea level but was later enclosed by the uplift of the Coast Mountain Range to the West and the Sierra Nevada Mountain Range to the East. The sediment from rivers flowing from these two ranges over the millennia have deposited silt, filling the valley and creating a generally level valley floor just barely above sea level.

Regional Seismicity

SEISMIC SOURCES

The project is located in a seismically active part of Central California. Many faults in this area are capable of producing earthquakes that can cause moderate ground shaking at the site. The three closest faults to the project area are Prairie Creek-Spenceville-Dentman fault (located 20.58 mi. northeast from the site), Midway-San Joaquin/S (27.44 mi. west from the site), and San Joaquin/S (28.42 mi. southwest from the site). **Figure 4.8-1** presents the locations of the fault systems and seismic hazards relative to the project study area.

The maximum credible earthquake magnitude, summarized in **Table 4.8-1**, represents the largest earthquakes that could occur on a given fault, based on the current understanding of the regional tectonic structure. The maximum credible earthquake magnitudes for the three closest faults to the project study area are a 6.5 magnitude for Prairie Creek-Spenceville-Dentman fault, a 6.75 magnitude for Midway-San Joaquin/S, and a 6.5 magnitude for San Joaquin/S.

Table 4.8-1 Seismic Sources

Fault Name	Distance to Fault from Center of Project Study Area (Miles)	Maximum Credible Earthquake (Magnitude)
Prairie Creek- Spenceville- Dentman	20.58	6.5
Midway- San Joaquin/S	27.44	6.75
San Joaquin/S	28.42	6.5

Source: Parikh Consultants Inc. *Preliminary Geotechnical Report.* Milpitas: n.p., 2006.

Site Geology and Groundwater Conditions

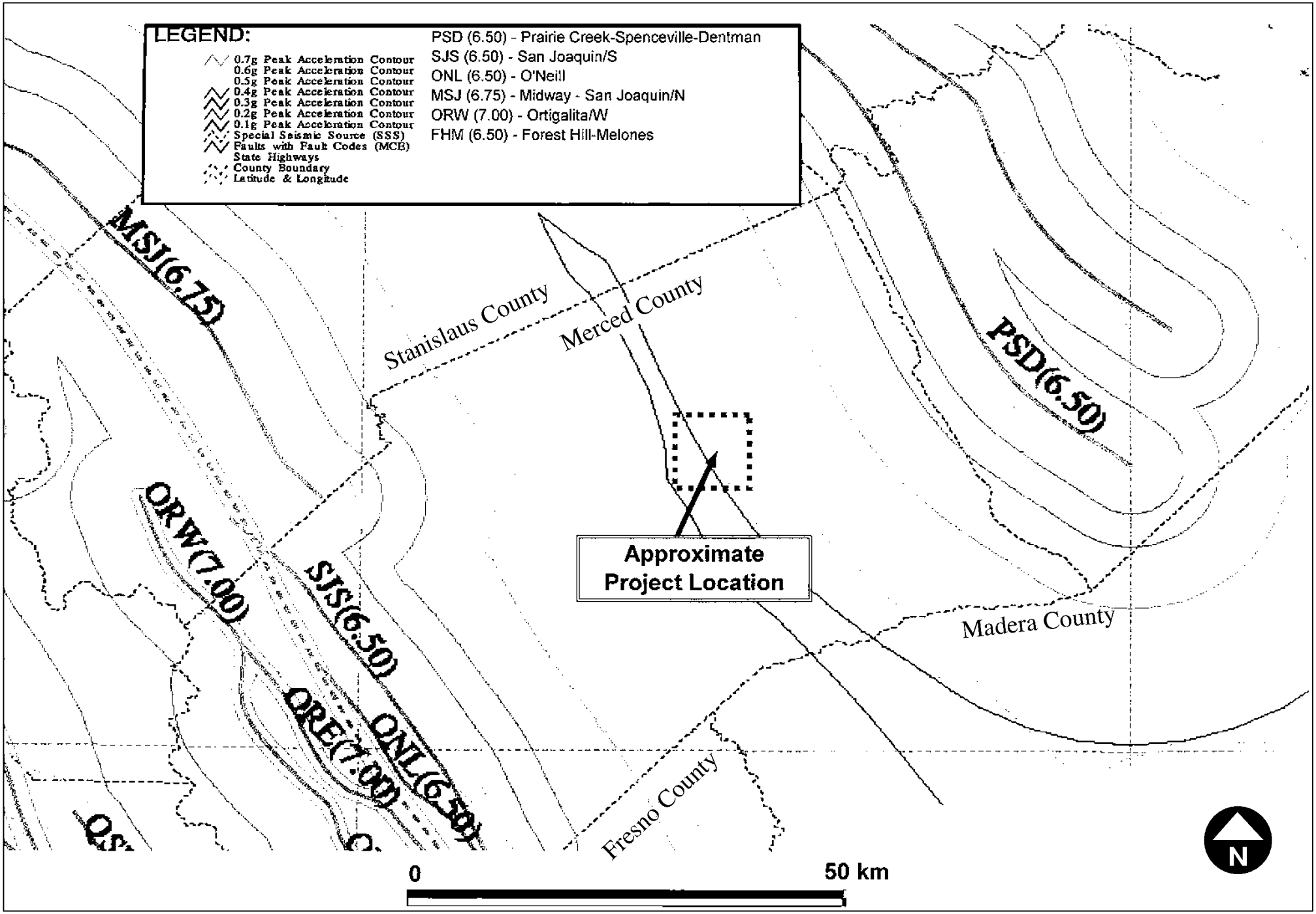
The project study area is relatively flat, consistent with regional conditions in the Central Valley. In order to determine the subsurface soil and groundwater conditions in the project study area, previously taken test borings were reviewed. These test borings were preformed for other roadway projects in the vicinity of the proposed Atwater Merced Expressway. The borings had been taken to determine subsurface conditions for bridge, overcrossing, undercrossing, and road separation projects. The test borings reviewed to determine subsurface project conditions were taken at the following locations:

- Bridge Across Bear Creek
- Bridge Across Black Rascal Creek
- Buhach Road Undercrossing
- Franklin Road Overcrossing
- West Merced Overhead
- Bear Creek Bridge
- RTE 41122 Separation
- Buhach Road Overcrossing
- Black Rascal Canal Bridge

Based on the test borings reviewed, the subsurface soil conditions in the project study area generally consist of firm to very stiff silt/sandy silt with partial cementation and very loose (at shallow depth) to very dense sand/silty sand. Occasionally, loose sand and silt deposits were encountered at shallow depths (less than 10 feet). Groundwater was typically found at a depth of 5 to 10 feet below the surface at elevations that ranged from 145 feet to an elevation of 155 feet above sea level.

Figure 4.8-2 shows the composition of subsoils at the project study area, which mainly consist of extensive marine and nonmarine sand deposits (Qs) ,alluvium, lake, playa, and terrace deposits, which are unconsolidated and semi-consolidated soils (Q), and pliocene and/or pleistocene sandstone, shale, and gravel deposits; which are mostly loosely consolidated soils (QPc).[1]

[1] Parikh Consultants Inc. Preliminary Geotechnical Report. Milpitas: n.p., 2006.

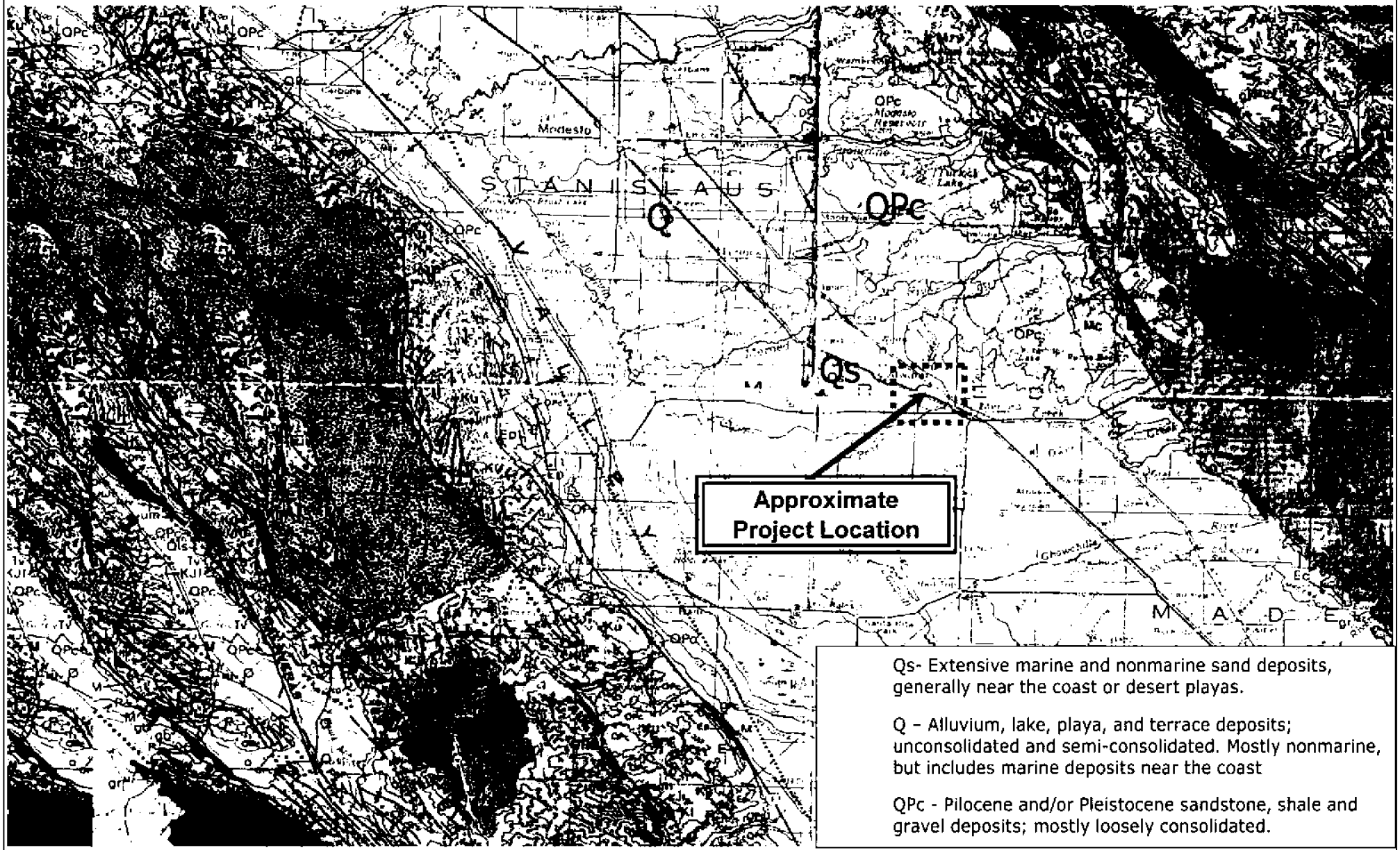


ATWATER-MERCED EXPRESSWAY

Seismic Hazard Map

FIGURE 4.8-1

Source: Preliminary Geotechnical Report. Parikh Consultants, September 2006



ATWATER-MERCED EXPRESSWAY

Geological Map **FIGURE 4.8-2**

Source: Preliminary Geotechnical Report. Parikh Consultants, September 2006

4.8.2 REGULATORY SETTING

Regulations

The Safety Elements of the Merced County General Plan and the City of Atwater General Plan provide goals, objectives, and policies concerning geologic, soil, or seismic hazards, as well as safety measures concerning geologic or seismic hazards.

MERCED COUNTY GENERAL PLAN

Merced County has adopted objectives and policies within the Safety Element of the Merced County General Plan that are designed to protect County residents from harm related to structural damage due to seismic, geologic, or unstable soil hazards. The objectives and policies relevant to the project are listed below.

Safety Element

Objective 1.A: New structures are protected from seismic and geologic hazards.

Policy 1-1 All habitable structures shall be located and designed in compliance with the Alquist/Priolo Special Studies Zone Act of 1972.

Policy 1-2: Special precautions to ensure earthquake resistant design should be considered for proposed critical structures such as hospitals, fire stations, emergency communication centers, private schools, high occupancy buildings, bridges and freeway overpasses, and dams.

Objective 3.A: Structures within areas of known or suspected unstable soil are appropriately located, designed and constructed.

Policy 3-2 Chapter 70, Volume 1 of the Uniform Building Code, 1970 Edition, known as the "Model Grading Code", shall be used as a guide for projects subject to hazards from slope instability.

Policy 3-3 All proposed structures, utilities, or public facilities within recognized near-surface subsidence or liquefaction areas should be located and constructed in a manner to minimize or eliminate damage.

CITY OF ATWATER GENERAL PLAN

The City of Atwater has adopted policies within their Safety Element of the City of Atwater General Plan to minimize the threat of personal injury and property damage to their residents due to seismic activity, liquefaction, and ground subsidence. The policies relevant to the project are listed below.

Safety Element

Policy SF-1.1 Require all new development and rehabilitation of existing development to be in compliance with all Seismic Zone 3 requirements of the Uniform Building Code.

Policy SF-2.1 Require a geotechnical study for all projects located in areas that are subject to high groundwater tables to assess the probability of liquefaction occurrence on project site. The geotechnical study shall identify any required design or construction mitigation to reduce potential impacts.

Policy SF-3.1 Require all project applications that propose extraction of groundwater to include a report evaluating the potential for subsidence. The report shall discuss appropriate mitigation measures to reduce the potential for subsidence.

Policy Consistency Analysis

The project would be consistent with the County of Merced's and the City of Atwater's General Plan goals, objectives, and policies regarding to geologic and seismic hazards because protection of humans and structures through appropriate engineering of a roadway is required by law. In addition the roadway and specifically improvements within the State right of way (ROW) will be constructed in accordance with the design guidelines and standards of Caltrans. Through the environmental review process, in accordance with the County of Merced General Plan (Objectives 1.A, 3.A and Policies 1-1, 1-2, 3-2, and 3-3), and the City of Atwater General Plan (Policies SF-1.1, and SF-2.1) geologic studies were conducted and appropriate mitigation was developed to minimize risk from seismic hazards and soil instability. Additional studies, where necessary, have been recommended as indicated in **Section 4.8.4**. Groundwater pumping is not anticipated for the project and no report evaluating the potential for subsistence is required, in compliance with City of Atwater General Plan Policy SF3.1.

4.8.3 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Based on the CEQA guidelines (Appendix G), the project would have a significant impact related to geology and soils if it would:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- 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.
- Strong seismic ground shaking?
- Seismic-related ground failure, including liquefaction?
- Landslides?

b) Result in substantial soil erosion or the loss of topsoil?

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

d) Be located on expansive soil, as defined in **Table 18-1-B** of the Uniform Building Code (1994), creating substantial risks to life or property?

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

f) 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?

g) 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?

Less Than Significant Impacts

The project would not result in land subsidence.

Land subsidence is the lowering of the land-surface elevation from changes that take place underground such as the pumping water, oil, and gas from underground reservoirs. The project would not be located on a geologic unit that would be considered to be of risk from subsidence.[2] In addition, ground water pumping is not anticipated for this project other than what might be required during construction to construct foundations and subsurface structures for bridges. Therefore subsidence is not anticipated and the potential for subsidence is considered a less-than-significant impact.

No faults are known to be located in the project area that could result in hazards from fault rupture.

Surface ruptures occur when movement on a fault deep within the earth breaks through to the surface.[3] If a surface rupture would occur at the project study area, it would damage the expressway and create a danger to drivers.

As shown in **Figure 4.8-1** on available geological and seismic data, no known mapped active fault traces cross the project study area. As previously discussed, the nearest significant fault, known as a controlling fault, is the Prairie Creek-Spenceville-Dentman located 20.6 miles northeast from the project study area. Since a fault is not located within the project study area, impacts from fault rupture are considered less than significant.[4]

There are no slopes in the project area that are subject to landslides.

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[2] Parikh, Gary, President of Parikh Consultants, Inc. Phone Conversation. 9 August 2007.

[3] California Geological Survey. Alquist-Priolo Earthquake Fault Zones Online Posting. 11 June. 2007. 28 June. 2007 <http://www.consrv.ca.gov/CGS/rghm/ap/>.

[4] Parikh Consultants Inc. Preliminary Geotechnical Report. Milpitas: n.p., 2006

Landslides are rock, earth, or debris flows on slopes due to gravity. Based on the flat nature of the site and surrounding areas, typical of the Central Valley, the project study area is not within an area of existing or potential slope instability. Therefore, impacts related to landslides would be less than significant.

No substantial erosion or loss of topsoil is anticipated during project operation.

Due to the generally flat and consolidated composition of soils at the project study area, no substantial loss or erosion of topsoil arising during project operation is anticipated. Erosion related impacts and mitigation measures during construction are discussed in **Section 4.9, Hydrology and Water Quality**.

The soils in the project area are not considered expansive.

Expansive soil is clay containing soils that expand to a significant degree upon wetting and shrink upon drying. The reviewed test borings documented that the soils in the project study area consist of stiff silt/ sandy silt. The soils are not clay based and not susceptible to shrinking and swelling. Therefore, there is no substantial risk to life or risk of property damage arising from expansive soils and there would be either no impact, or a less-than-significant impact.

The project does not include any septic tanks or wastewater disposal features.

The project is an expressway and would not include the construction or installation of any septic tanks or alternative wastewater disposal systems. Therefore, the project would not result in impacts from the inability of soils to support septic tank use.

There are no knowm mineral resources in the project area.

The Merced County General Plan Open Space/Conservation Element contains a map of known mineral resources including active mining sites, inactive mining sites, and potential locations for sand and gravel resources. According to this map, the project study area is not located where any known mineral resources are known to exist. Therefore, impacts resulting from the loss of availability of a known mineral resource would be less than significant.

Significant Impacts

Impact GEO-1: During project operation, seismic related-liquefaction and lateral spreading could occur; causing destabilization of roadways, overhead structures and approaches. This could result in damage to the project and create a hazard to people traveling on the new roadway.

Liquefaction occurs when cohesionless, saturated soils (soils in which the space between individual particles is completely filled with water) are subject to a temporary loss of strength under the reversing, cyclic stresses associated with earthquake shaking. As a result, the ability of the soil deposit to support foundations would be reduced. Submerged cohesionless sands and silts of low relative density are the type of soils that are usually susceptible to liquefaction. Lateral spreading involves the lateral movement of large blocks of soil as a result of liquefaction in a subsurface layer.

Based on the available boring information, the project study area is generally underlain by firm to very stiff silt/sandy silt with partial cementation and very loose (at shallow depth) to very dense sand/silty sand. The very loose to medium dense sand layers at a shallow depth may be subject to liquefaction.

Ground adjustment (changes in ground level and surface soil formations), due to post-liquefaction settlement of soils after a seismic event, could occur. Any post-liquefaction settlement at abutments/piers of the bridges has the potential to cause downdrag on overhead structures and reduce the load carrying capacity of the piles. This could cause the shifting or collapse of overhead features. General ground failure resulting from liquefaction is not anticipated, but further investigations would be necessary to identify liquefaction potential as indicated in the following mitigation measure.

Mitigation Measure GEO-1:

Further investigation of liquefaction potential (looking at subsurface soil conditions and groundwater conditions) by a qualified geologist, certified by the State of California, shall be performed during the final engineering and design phases of the project, once a final alignment is selected. This investigation shall include a vertical pile capacity analysis which shall consider post-liquefaction settlement. Recommendations given in this investigation shall be consistent with the Caltrans Highway Design Manual. Recommendations of this investigation shall be incorporated into the final project designs and approved by MCAG and Caltrans for work within the State's ROW prior to issuance of permits to construct.

Significance After Mitigation: Less than Significant

Impact GEO-2: Seismic ground shaking could damage the project and cause bridge collapse which could harm people in the vicinity, including motorists.

The proximity of the project to the controlling fault allows for a low to moderate possibility of the site to experience strong ground shaking.[5] During an earthquake, damage to the project, including bridge collapse, could result from intense ground shaking. People near the project or in their vehicles driving on the expressway or on or near one of the associated roadway improvements, could be harmed by the structural damage caused by ground shaking.

Mitigation Measure GEO-2:

Once a final alignment is selected for the project, a detailed geotechnical evaluation shall be preformed by a qualified geologist, certified by the State of California. This evaluation shall identify specific areas of concern for seismic ground shaking and provide mitigation measures consistent with the Caltrans Highway Design Manual. Recommended mitigation measures from this evaluation shall be incorporated into the project design and the seismic design of the project shall be approved by MCAG and Caltrans for improvements within the State's ROW prior to issuance of permits to construct.

Significance After Mitigation: Less than Significant

[5] Parikh Consultants Inc. Preliminary Geotechnical Report. Milpitas: n.p., 2006.

Impact GEO-3: Unstable soils pose a threat to the structural integrity of the project's bridge structures.

Several new bridge structures are proposed for the project, which include two main interchanges at Route 99 and Santa Fe Drive, two grade separations at the Burlington Northern Santa Fe (BNSF) Railroad and Union Pacific (UP) Railroads, and several overcrossing structures. Based the dense/silty sand and high groundwater level indicated in test borings of the project study area, the use of Standard Class piles could result in the loss of structural integrity to bridge structures.

Mitigation Measure GEO-3:

Recommendations on foundation design shall be made in the final geotechnical evaluation, which is to be performed by a qualified geologist, certified by the State of California, during the PS&E phase. Foundation recommendations in the geotechnical evaluation shall be based on further investigation of subsurface conditions and structural design requirements. In is anticipated that recommendations could include design features that would exceed the structural integrity of Standard Class piles. These recommendations shall be approved by Caltrans and MCAG and incorporated into the project.

Significance After Mitigation: Less than Significant

Impact GEO-4: In areas where the use of fill material is required, post construction settlement could occur at project embankments since their construction would require fill to be placed on top of existing very stiff silt/sandy silt and very loose to very dense sand silty/sand. Settlement could damage the project structures, which could create hazards to motorists on the expressway.

Construction of embankments would involve the use of substantial fill (redeposited soils from on or off-site area) at some of the bridge approaches, specifically at the interchanges of the AME with Route 99 and Santa Fe Drive, and at the approaches to the grade separated overpasses of the BNSF Railroad and UP Railroad tracks. Since the on-site soil conditions consist of firm silt/sandy silt and very loose to very dense sand/silty sand, the addition of thick layers of fill soil could result in settlement of the soils. Settlement could cause damage (cracks) to structural elements of the project, or alter the height level of elements of the project, creating hazards to drivers and passengers on the expressway.

Mitigation Measure GEO-4a:

Once a final alignment is selected for the project, a detailed geotechnical evaluation shall be preformed by a qualified geologist certified by the State of California. This study shall address potential post construction settlement at project embankments and shall recommend appropriate mitigation measures consistent with Caltrans design guidelines. Caltrans standard embankment settlement period may be required from 60 days to 90 days depending upon site-specific condition as determined by the geotechnical evaluation.

Mitigation Measure GEO 4b:

Embankment fill shall be placed in accordance with the Caltrans Highway Design Manual guidelines, which requires structure approach embankment material to be compacted to a 95 percent relative compaction.

Mitigation Measure GEO 4c:

Retaining walls needed to retain approach embankments at Route 99 and Santa Fe Drive, and grade separations at the Burlington Northern Railroad and Union Pacific Railroad tracks shall be constructed of either mechanically stabilized earth [MSE] walls (the preferred option) or Caltrans standard cantilever walls. Proper backfill compaction; drainage; adequate bearing capacity; and retaining and grade separation wall type shall be determined by a qualified geologist, certified by the State of California, in the geotechnical evaluation that will be prepared for the project. Recommendations of the geotechnical evaluation shall be implemented and final designs shall be reviewed and approved by MCAG and Caltrans for improvements within the State's ROW prior to the issuance of permits to construct.

Significance After Mitigation: Less than Significant

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4.9 HYDROLOGY AND WATER QUALITY

This section is based on four hydrologic reports prepared in 2007 by WRECO. These reports are a Location Hydraulic Study, a Drainage Impact Summary Report, a Water Quality Report, and a Stormwater Data Report. **An Addendum to the Location Hydraulic Study Report, Water Quality Study Report, and Drainage Impact Summary Report was prepared in October 2008 to re-evaluate the impacts to floodplain, water quality, and drainage systems associated with Modified Alternative 1B.** This section uses these reports **and the Addendum** to describe the hydrologic setting for the AME project, climate, surface hydrology, groundwater, existing waterways, and flooding, and discuss regulations that would apply to the project. Impacts related to hydrology and water quality are identified and mitigation measures recommended for any identified significant impacts.

4.9.1 EXISTING CONDITIONS

Physical Setting

CLIMATE

According to the 2006 Federal Emergency Management Agency (FEMA) Flood Insurance Study for the City of Merced, the regional climate is characterized by hot, dry summers, and cool winters. Mean annual precipitation in the area is approximately 12 inches per year and is based on annual rainfall data between the years 1895 and 2005 obtained from the Oregon Climate Service Internet Map Server.

SURFACE HYDROLOGY

The project study area is within the San Joaquin-Lower Merced-Lower Stainslaus Watershed Basin, which covers 4,671.7 square kilometers (1,803.8 square miles) and which eventually drains to the Pacific Ocean. Water resources in Merced County include numerous reservoirs, streams, creeks, and ponds. The major surface water bodies within the project study area are Canal Creek, Livingston Canal, and Black Rascal Creek (see **Figure 4.9-1**). Bear Creek is also a major surface water body that crosses Gurr Road approximately 0.4 mile south of the project study area. Natural and manmade concrete canal creeks flow generally from east to west and north to south within the project study area.

In the north portion of the project study area, Livingston Canal and Canal Creek receive surface water directly from drainage from precipitation and agricultural irrigation. Livingston Canal flows across the north of the project study area from east to west for approximately 12.9 miles until it meets the Merced River. The Merced River flows southwest for approximately 21.4 miles where it joins with the San Joaquin River on the boarder of Merced and Stanislaus Counties. In the southern portion of the project study area, Black Rascal Creek and Bear Creek receive surface water directly from drainage from precipitation and agricultural irrigation. Canal Creek discharges to the south into Black Rascal Creek which flows approximately 5.4 miles southwest to join with Bear Creek. Bear Creek continues to flow into Bravel Slough which flows approximately 15.5 miles west into the San Joaquin River. The San Joaquin River then flows approximately 16.6 miles northwest where it joins with the Merced River.

The Merced River merges into the San Joaquin River which continues northwest through the Sacramento Delta and ultimately drains to the west into the San Francisco Bay and the Pacific Ocean.

GROUNDWATER

The groundwater basin in the project study area is the Merced Groundwater Basin. It is a sub-basin of the San Joaquin River Groundwater Basin, which runs in a northeast direction toward the Sacramento Delta and follows the San Joaquin River. Groundwater in Merced County generally ranges from 8 feet to 74 feet below the ground surface.[1] The groundwater elevations in the project area ~~is~~ **are** typically found at a depth of 5 to 10 feet below the surface at elevations that range from ~~145~~ **89** feet to an elevation of ~~155~~ **157** feet above sea level.[2]

Much of the agricultural land in Merced County relies on irrigation from groundwater supplies. Merced Irrigation District (MID) provides surface water irrigation for much of the agricultural land in the project vicinity.[3]

Water from groundwater wells is used for household and agricultural uses. Historic data indicates that in drought years, when surface waters do not provide adequate water supply, groundwater pumping increases. As the population increases, there will be an even greater demand on water supplies. Furthermore, as impervious surface area increases in the County, less irrigated water and storm water will percolate into the groundwater basin. With increased demand on the groundwater supply and less percolated water reaching the groundwater basin, aquifer levels will decline.

According to the Central Valley Region Basin Plan (1998), the number of cases of groundwater pollution attributable to industrial or municipal sources has increased steadily. Agricultural drainage laden with high levels of salts, nutrients, pesticides, trace elements, sediments, and other by-products affect ground water quality. If current practices for discharging waters containing high levels of salt continue, the San Joaquin Valley's groundwater may be affected. Sedimentation is another problem associated with agriculture and impacts both ground and surface waters.

WATERWAYS IN THE PROJECT STUDY AREA

The project crosses three of the major waterways found in the area: Canal Creek, Livingston Canal, and Black Rascal Creek. Other drainage features in the project vicinity include El Capitan, Henderson Lateral, Lateral A-A, Lateral A, Main Ashe Lateral, and Buhach Lateral.

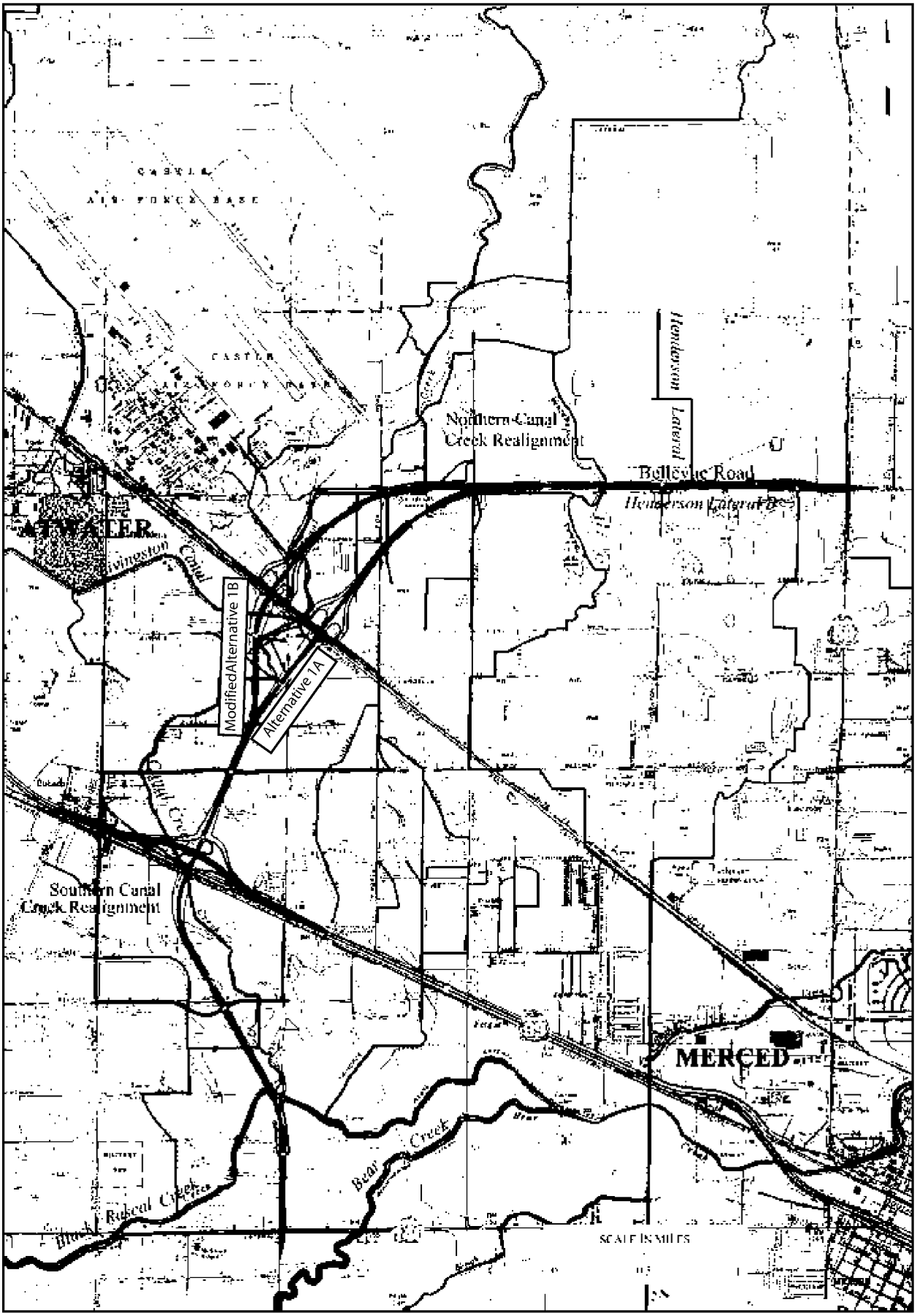
Potential Waters of the United States have been identified within the project study area. These include canals, creeks, and primary ditches, secondary ditches, concrete ditches, ponds, detention basins, manure ponds, potential wetlands, irrigated pasture, vernal pools, and potentially more features in areas in which access was not granted (See **Section 4.11, Biological Resources and Wetlands**). The project study area also intersects potential wetland habitats. The locations of potential seasonal wetlands are discussed in **Section 4.11, Biological Resources and Wetlands**.

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[1] Merced County, Merced County Regional Transportation Plan Environmental Impact Report, 2004.

[2] Parikh Consultants, Preliminary Geotechnical Report, 2006.

[3] Merced County, Merced County General Plan, 2000.



ATWATER-MERCED EXPRESSWAY

Surface Water Bodies in the Project Vicinity

REVISED FIGURE

Source: WRECO, 2008.

FLOODING

Flooding is a natural occurrence in the Central Valley. In general, flood-producing rainfall occurs in late fall and winter with snowmelt floods occurring in late spring and early summer. In Merced County, most of the flood producing rainfall occurs in the winter months between November and April. Winter rainstorms and spring snowmelt that originate in the surrounding mountains and drain into the rivers in the valley which cause peak flows in the Merced and San Joaquin Rivers and can result in cause flooding.

Ponding and local flooding are common around the project study area. This is due to slow to very slow drainage flows caused by flat terrain and slow to very slow soil infiltration rates. Furthermore, stream channels have limited capacity on the valley floor and are periodically blocked by vegetation, causing channel capacities to be quickly exceeded during major storm events. Overflow from the channels generally spreads out as slow-moving shallow flooding. Ponding also occurs behind the irrigation canal levees and railroad and road embankments. High water tables, with the water table within 5 feet of the ground surface, are present in Merced County and cause additional flooding problems.

The project study area is located within FEMA flood zone areas. The floodplain maps are presented in **Figure 4.9-2**. According to the most recent FEMA Flood Insurance Studies (1995), flood-producing rainfall occurs during the winter and spring months, between late November and early April.

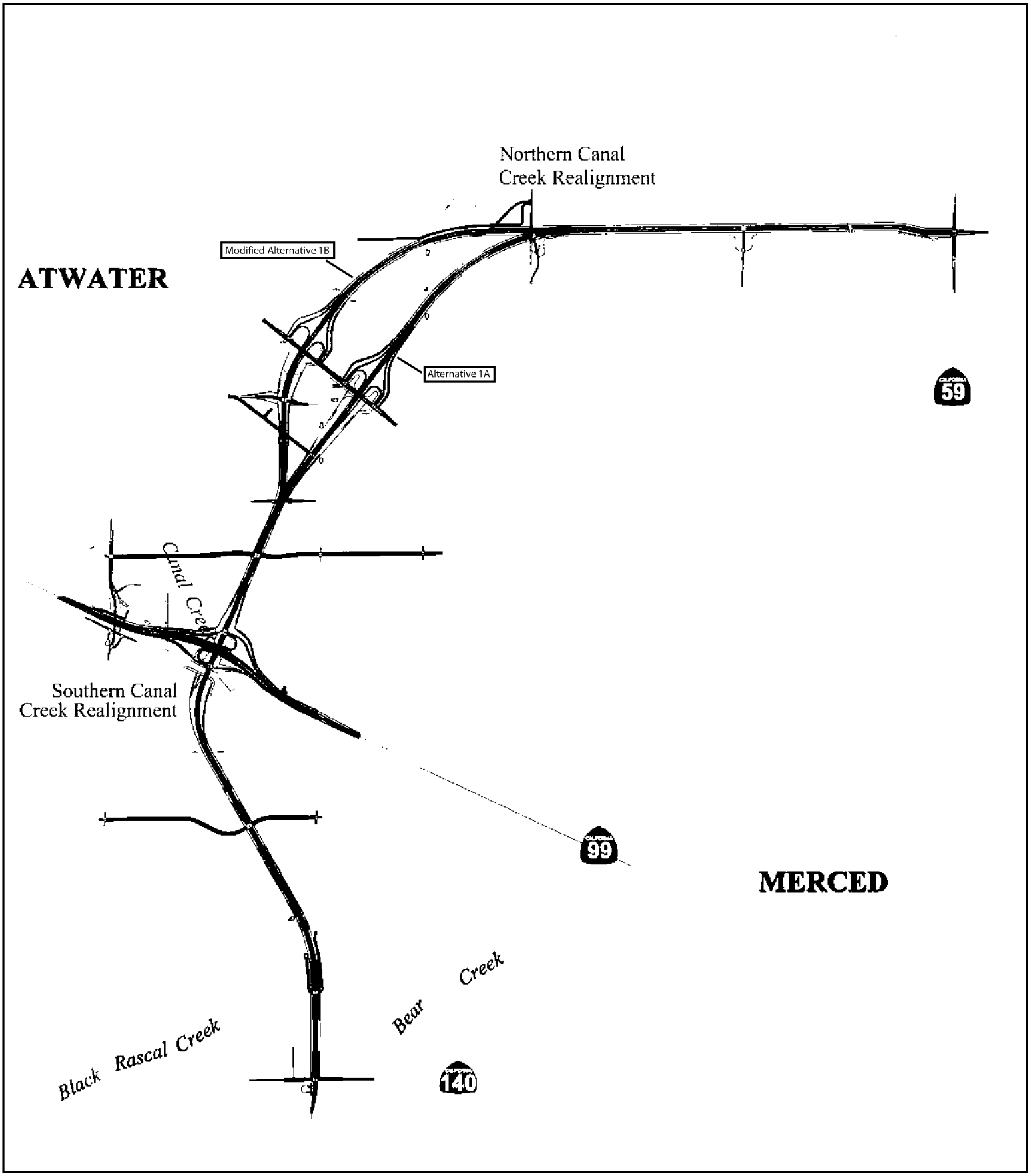
During flood events, the Merced Irrigation District's Main Canal intercepts floodwater from nearby creeks. Most of the intercepted water flows into Yosemite Lake. When excessive volumes occur in the lake, water is released to the LeGrand and Fairfield Canals, located south of Yosemite Lake. The flows from these canals drain into Black Rascal Creek and Bear Creek. Flows from Bear Creek, in excess of channel capacity, spill over the south bank and flood the valley floor (approximately one foot deep). Flooding can also result from over flows from Black Rascal Creek. The **Burlington Northern** and Santa Fe Railway **(BNSF)** embankments serve as a partial barrier to this overbank flow and help direct floodwater in the City of Merced. Most of the overflow eventually crosses the railroad tracks and Highway 99 (~~Southern Pacific Avenue~~ Union Pacific Railroad/Ashby Road) and combines with floodwater from the other creeks in the basin at Eastside Canal.

In addition to flows from Bear and Black Rascal Creeks, water escapes the banks of Canal Creek during the 100-year storm. Flooding occurs upstream of Santa Fe Drive (Burlington Northern Santa Fe Railroad) and flows south until it reaches the high railroad embankment. The railroad embankment acts as an effective levee and floodwaters (one foot deep) follow along the embankment.

Flood control measures in the form of detention dams, levees and channels offer flood protection for much of Merced County. However, due to the increase in impervious surface area resulting from development in the County, the discharge rates have increased since the reservoirs were constructed and flooding is still a problem in the County.

Flood control measures include eleven major dams in or adjacent to Merced County. The dams that are in the project vicinity are Castle Dam, Lake Yosemite, Burns, and Crocker Dam. Castle Reservoir, located in Merced County provides flood control protection to Canal Creek.

The delineated FEMA floodplain (**Figure 4.9-2**) has not been updated to account for the storage at Castle Reservoir. As a result, the 100-year floodplain should not be as extensive as indicated in **Figure 4.9-2**.



ATWATER-MERCED EXPRESSWAY

100-Year Floodplain Map

REVISED FIGURE 4.9-2

Source: WRECO. September 2008.

Regulatory Setting

CLEAN WATER ACT

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States. It gives the U.S. EPA the authority to implement pollution control programs such as setting wastewater standards for industry. CWA also sets water quality standards for contaminants in surface waters. The Act makes it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit is obtained under its provisions. The construction grants program of the CWA recognizes the need for planning to address the critical problems posed by non-point source pollution. The **State Water Resources Control Board** (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB) are responsible for ensuring implementation and compliance with the provisions of the federal CWA.

Clean Water Act Section 303(d)

The CWA includes a list of water bodies that do not meet water quality standards. The CWA Section 303(d) List of Water Quality Limited Segments (303(d) List) is a list developed by the SWRCB and approved by the United States Environmental Protection Agency (US EPA). The law requires that for waters on these lists priority rankings are developed and that action plans, known as Total Maximum Daily Loads (TMDLs), are established to improve water quality. The 303(d) List is revised typically every two years. The SWRCB compiled the draft 2006 303(d) List which was partially approved by the US EPA on October 25, 2006 with full approval pending further review. The 2002 303(d) List was approved by US EPA in July 2003.

Bear Creek was on the 2002 303(d) List and does not currently meet water quality objectives for mercury. No other direct receiving water bodies within the project study area are listed on the 2006 303(d) List.

REGIONAL WATER QUALITY CONTROL BOARD

The project study area is within the jurisdiction of the Central Valley RWQCB (Region 5). This RWQCB has the authority to implement water quality protection standards through the issuance of permits for discharge to waters at locations within its jurisdiction. The Central Valley Region Basin Plan (Basin Plan) establishes water quality objectives and implementation programs to meet stated objectives and to protect the beneficial uses of water in the basin. Because the project study area is located within the Region 5 jurisdiction, all discharges to surface water or groundwater are subject to Basin Plan requirements.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

National Pollutant Discharge Elimination System (NPDES) permitting was established in the CWA to regulate municipal and industrial discharges to surface waters of the U.S. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that the EPA must consider in setting effluent limits for priority pollutants.

Non-point pollution sources are defined as sources originating over a wide area. Sources originating from a definable point are called point sources. Non-point pollution often enters receiving water in the form of

surface runoff not by way of pipelines or discrete conveyances. As defined in the federal regulations, non-point sources are generally exempt from federal NPDES permit program requirements. However, non-point source discharges caused by general construction activities are controlled by the NPDES program. Also, Section 402(p) of the Clean Water Act has defined stormwater discharges as "point source discharges".

The goal of the NPDES non-point source regulations is to improve the quality of stormwater discharged to receiving waters to the "maximum extent possible" through the use of best management practices (BMPs). BMPs can include the development and implementation of various practices, including educational measures (workshops informing the public of what impacts result when household chemicals are dumped into storm drains), regulatory measures (local authority of drainage facility design), public policy measures (label storm drain inlets as to impacts of dumping on receiving waters), and structural measures (filter strips, grassy swales, and detention ponds).

~~**Caltrans NPDES Requirements**~~

Storm water permits are required for discharges from a Municipal Separate Storm Sewer System (MS4) to a receiving body of water or to groundwater. The USEPA defines MS4 permits to include discharges from state-owned road systems. In California, MS4 permits are issued by RWQCBs as part of individual NPDES permits.

Although the project is not a Caltrans project, it is to be built according to Caltrans specifications. In 1999, Caltrans was issued an NPDES statewide permit (Order No. 99-06 DWQ) that covers Caltrans' highways, highway-related properties, facilities, and activities, such as maintenance stations, roadside rest areas, weigh stations, park-and-ride lots, and construction sites. In addition, it covers both wet- and dry-weather discharges from stormwater conveyance systems. In general, Caltrans is required to reduce pollutants in stormwater discharges to the maximum extent possible. **The NPDES permit is also intended to cover all Caltrans construction activities that require a permit under federal regulations. For discharges from a construction site, toxic pollutants must be reduced using the Best Available Technology Economically Achievable (BATEA), and conventional pollutants must be reduced using the Best Conventional Technology (BCT).**

~~The NPDES stormwater permit is intended to cover all stormwater activities by the California Department of Transportation (Caltrans) in areas that require an MS4 permit. Although the project is not a Caltrans project, it is to be built within Caltrans specifications. According to the September 2007 Location Hydraulic Study (revised February 2008) prepared by WRECO, construction of portions of the project within state jurisdiction would be constructed under the Caltrans NPDES stormwater permit. The NPDES permit is also intended to cover all Caltrans construction activities that require a permit under federal regulations. For discharges from a construction site, toxic pollutants must be reduced using the Best Available Technology Economically Achievable (BATEA), and conventional pollutants must be reduced using the Best Conventional Technology (BCT).~~

Construction Site Runoff Management

In accordance with NPDES regulations to minimize potential effects of construction runoff on receiving water quality, the State requires that any construction activity affecting one acre or more must obtain a General Construction Storm Water Permit. Permit applicants are required to prepare a Storm Water

Pollution Prevention Plan (SWPPP) and implement Best Management Practices (BMPs) to reduce construction effects on receiving water quality by implementing erosion control measures.

Construction Dewatering

The Central Valley RWQCB requires site specific permits for construction dewatering of groundwater with discharge to surface waters. Clean or relatively pollutant-free construction-generated wastewater that poses little or no threat to water quality may be discharged directly to surface water under certain conditions; they must be either four months or less in duration or the average dry weather discharge must not exceed 0.25 mgd.

MERCED COUNTY CRITICAL AREA FLOODING AND DRAINAGE PLAN

Additional flood control measures are proposed via the Merced County Critical Area Flooding and Drainage Plan, effective 1983. The Merced County Flood Control District was created as a part of this plan to improve drainage capacity and decrease flooding potential. Under the Flood Damage Protection Ordinance of the County Zoning Code, only agricultural and open space uses are permitted in the Primary Flood Plain Area as designated on the Federal Flood Insurance Rate Maps.

4.9.2 POLICY CONSISTENCY ANALYSIS

CLEAN WATER ACT

The project by law is required to abide by the Clean Water Act including Section 303(d).

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Storm water discharges from the project would qualify as a point source under the NPDES program. Although the project is not a Caltrans project, the project is to be built using the design specifications requirements established for Caltrans projects with regards to drainage and water quality. According to the Draft Location Hydraulic Study, portions of the project under state jurisdictions would be constructed ~~under the Caltrans NPDES stormwater permit. Therefore, the project will abide by MS4 permit requirements, the Caltrans NPDES permit, and be~~ consistent with the Caltrans Stormwater Management Plan ~~in these areas~~.

The majority of the project will pass through local jurisdictions, generally through Merced County. The County does not have a blanket NPDES permit and, prior to project construction, the project sponsor will be required to obtain an individual local permit or multiple permits (depending on phasing plan) ~~for areas outside of state jurisdiction~~. These permits would be subject to approval by the RWQCB.

Non-point source discharges caused by general construction activities are also controlled by the NPDES program. Under the NPDES program, stormwater quality discharged to receiving waters shall be improved to the "maximum extent possible" through the use of BMPs.

As required by law, a Notice of Intent (NOI) will need to be completed **prior to construction,** and submitted to the ~~RWQ~~ **SWR**CB with the appropriate fees~~if dewatering is to be used during project construction~~. As required, the Central Valley RWQCB shall be contacted for guidance related to discharges

water from dewatering activities. Dewatering discharges for the AME project, if necessary, will be regulated under the NPDES Statewide Permit for Caltrans and the individual local permit/permits for the project. .

Since construction of the proposed project will disturb more than one acre, the project will require a General Construction Storm Water Permit. As part of this permit the project sponsor shall be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) and implement BMPs to reduce construction effects on receiving water quality by implementing erosion control measures.

MERCED COUNTY CRITICAL AREA FLOODING AND DRAINAGE PLAN

The project would be consistent with open space uses and therefore would be consistent with the Merced County Critical Area Flooding and Drainage Plan. **Prior to project construction, a flood encroachment permit from the Central Valley Flood Protection Board would be required for construction over Black Rascal Creek and Canal Creek. The flood encroachment permit would be in compliance with Title 23, Section 112 of the California Code of Regulations.**

4.9.3 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the project would result in significant flooding, hydrologic, water quality, or storm drainage impacts if it would:

a) Violate any water quality standards or waste discharge requirements.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

f) Otherwise substantially degrade water quality.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; and inundation by seiche, tsunami, or mudflow.

Less Than Significant Impacts

The project would not alter an existing drainage pattern in such a way to cause erosion or siltation.

As discussed in the project description in **Chapter 3.0**, a section of Canal Creek near SR 99 would be realigned as part of the project. However, this realignment would not significantly alter the existing drainage pattern in the surrounding area or significantly alter the pattern of Canal Creek. **Additionally, the Avenue Two bridge crossing over Canal Creek under Modified Alternative 1B would not redirect or alter the existing flows of Canal Creek.**

~~Other than the realignment of Canal Creek, the project would not substantially alter the existing drainage pattern of the project study area.~~ In places, the project would be elevated above the surrounding land area, particularly around the Black Rascal Creek floodplain (see below). However, substantial changes in drainage are not anticipated and as the terrain is generally flat and not erosive, substantial erosion or siltation is not anticipated.

The project would not substantially degrade water quality.

The ~~Central Valley RWQCB~~ **US EPA/SWRCB** has listed Bear Creek under the Clean Water Act Section 303(d) list as mercury impaired water body. However, a Total Maximum Daily Load (TMDL) has not been established for this water body and it is anticipated that Bear Creek will be de-listed with the next update of the 303(d) list.[4] The project is not anticipated to generate any mercury emissions because mercury is not found in gas or diesel emissions or other pollutants that are typically found on a roadway and it is not thought that the project would prevent Bear Creek's de-listing. In addition the project would implement BMPs as discussed in Mitigation Measures HWQ-1A-C and HWQ-3A-C that would prevent water quality from deteriorating. As a result, project impacts to the water quality in Bear Creek would be considered less than significant.

The project would not expose people or structures to risk of flooding from levee or dam failure.

There are eleven major dams in or adjacent to Merced County. Dam failures can result from earthquakes, erosion, rapidly rising flood waters, and structural/design flaws. When a dam fails, the quantity of water held back by the dam (i.e., the contents of the reservoir) is suddenly released downstream, causing damage in its inundation zone. Dam failure would result in widespread inundation in the project area and Merced County.

Although dam failure ~~in~~**s** unlikely, the project is in an area where dam failure is a possibility. The project would not directly result in exposing people to the risk of flood because it does not include the construction of any housing or occupied structures. Motorists traveling on the AME would be exposed to the risk of flood but this potential is similar for all roadways within the project study area and this portion of Merced County.

[4] The updates can be found online at the following site: http://www.waterboards.ca.gov/tmdl/docs/303d_update/r5_v3.pdf.

The project would not expose people or structures to risk of flooding as a result of inundation by seiche or tsunami.

A seiche is a wave occurring in confined bodies of water, such as lakes, reservoirs, or bays, and can be initiated by winds, seismic events, or landslides. Earthquakes can also cause tsunami (i.e., tidal waves) in large bodies of water. The bodies of water in the project vicinity are reservoirs and are not large enough for tsunamis, but may experience seiches during seismic events.

Waves from seichi can overflow the banks of reservoirs and endanger people or structures that are nearby. However, there is no large water body near enough to the project study to place at risk the project or users of the project.

Waves induced by seichi can rapidly erode an earthen dam. The larger dams in the area are inspected by the Department of Water Resources on an annual basis to evaluate structural integrity and are therefore not anticipated to be susceptible to collapse from seiche.[5] Therefore, the project would no expose people or structures to hazards from seiche and there would be no impact.

The project would not expose people or structures to risk of flooding related to mudflows.

Mudflows (i.e., debris flows, mudslides) are rivers of rock, earth, and other debris saturated with water. Typically mudflows result from exposed hillsides that erode during storm events, sending mud and debris downstream. Since the project study area is relatively flat, it is not anticipated that there is any risks from mudflows and there would be no impact.

The project would not expose people or structures to risk by placing housing within a 100-year flood hazard area.

The AME project is an expressway and does not include the construction of housing. Therefore there would be no impact related to the project from the placement of housing within a 100-year flood hazard area.

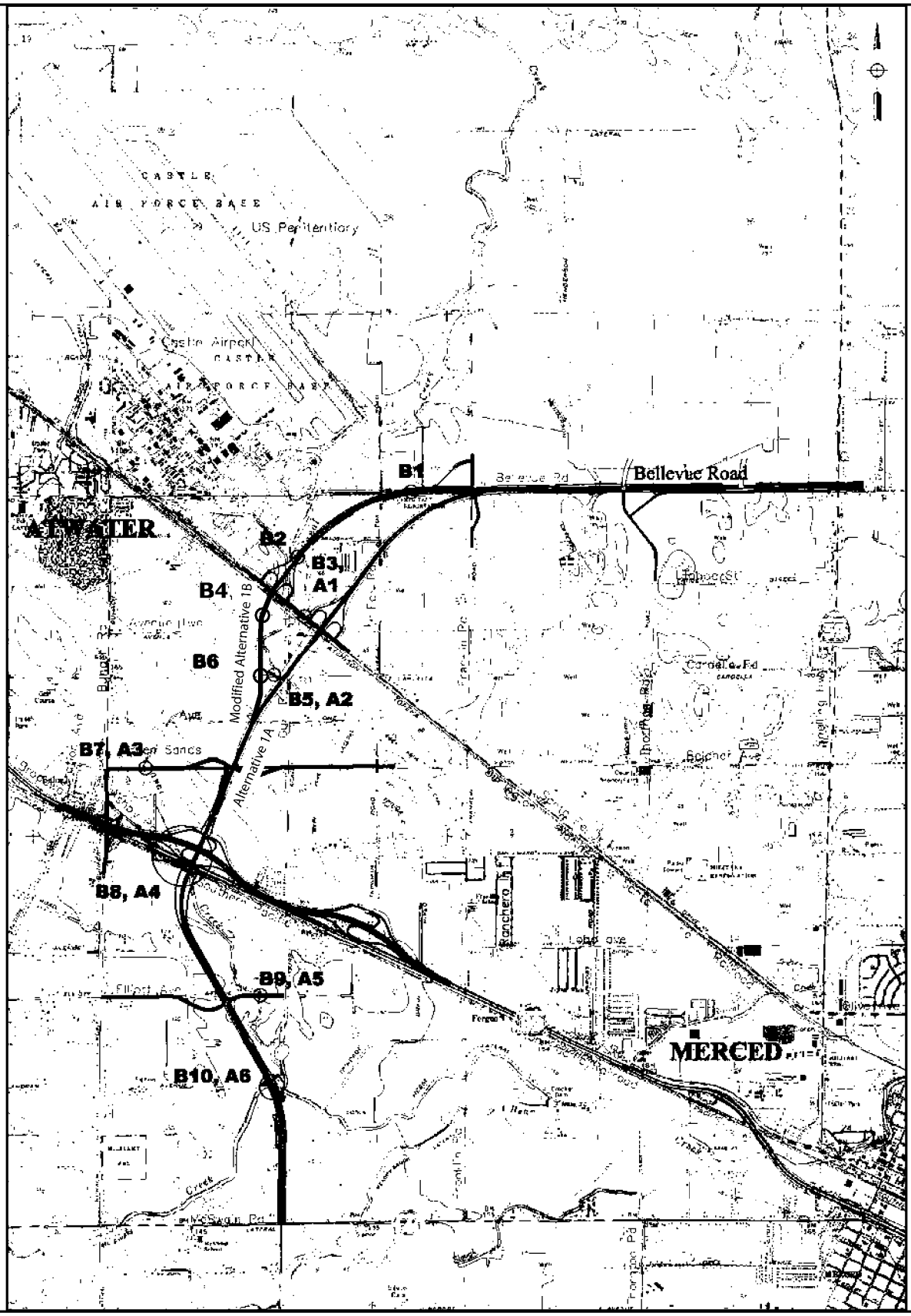
~~**The project would not expose motorists to significant hazards from floods.**~~

~~A new bridge crossing over Black Rascal Creek would be constructed to 100-year flood specifications (see location A6/B10 in Figure 4.9-3). Because the Black Rascal Creek channel is undersized, stormwater would top the banks and inundate the floodplain during a 100-year flood event. However, the proposed roadbase and bridge would be elevated in this area to a height (approximately 3-5 feet above surrounding terrain) that would prevent flooding of the roadway or bridge. Therefore, the project would not create new risks to people in vehicles during major precipitation events.~~

The project would not impede or redirect flood flows.

The project would be constructed within the 100 year floodplain for Black Rascal Creek. As discussed above, the roadway and bridge would be elevated above the surrounding terrain. The bridge would be built with a sufficient opening to allow the unimpeded passage of 100-year storm flows. Therefore, the project would not

[5] Merced County, Merced County General Plan, 2000.



Legend:

- AME
- B1 — Proposed Conveyance Structure
- Not to Scale

N

ATWATER-MERCED EXPRESSWAY

Proposed Conveyance Structures

REVISED FIGURE 4.9-3

Source: WRECO. September 2007.

impede or redirect these flood flows and no new upstream or downstream impacts are anticipated with the project.

The project would not interfere with groundwater recharge.

The project would convert approximately 90 acres of pervious surface area to impervious surface area. Impervious surface area would prevent stormwater from percolating into the groundwater basin. However, the project alone would not significantly interfere with groundwater recharge since it is small in scale compared to the size of the Merced Groundwater Basin and the entire groundwater recharge area.[6] This is a less-than-significant impact.

The increase in impervious surface area and decrease in groundwater recharge is a cumulative effect since it takes place on a regional level. A discussion of this cumulative impact is provided in **Chapter 6, CEQA Required Conclusions**.

Significant Impacts

The primary potential impact to hydrology and water quality comes from pollution and/or suspended solids being introduced into waterways as a result of stormwater runoff during construction and operation of the new roadway. **If Modified Alternative 1B is selected, drainage and flooding related impacts to the depressed section between Green Sands Avenue and Canal Creek would also occur.** Mitigation measures for construction and long-term impacts focus on the control of sediment and suspended solids (including pollutants) from entering waterways. Impacts related to drainage and flooding would also occur.

IMPACTS DURING PROJECT CONSTRUCTION

Impact HWQ-1: Construction activities would increase erosion potential by exposing soils that can be transported into nearby creeks and storm drains with stormwater runoff.

Construction of the AME would require the disturbance of approximately 393 acres of land to build Alternative 1A, or approximately 400 acres to build **Modified** Alternative 1B. Because the project would involve the disturbance of a large area of land, it ~~will~~ **would** expose a large amount of soil to potential stormwater erosion. Erosion of topsoil would increase sedimentation in runoff water. This water and sediment would then drain to stormwater systems (canals and creeks) and pollute surface waters.

Because it would disturb more than one acre of land, the project shall be regulated under the NPDES Permit for Construction Activities (Order No. 99-08-DWQ, NPDES No. CAS000002)~~, which is incorporated by reference to the Caltrans NPDES Permit, Storm Water Discharges from the State of California, Department of Transportation (Caltrans) Properties, Facilities, and Activities (Order No. 99-06-DWQ, NPDES No. CAS000003).~~ Control measures to reduce soil erosion during construction are included in these permits and have been incorporated into Mitigation Measure HWQ-1A and HWQ-1B.

[6] WRECO. Draft Water Quality Study Report. 2007.

In addition to disturbance of soil, construction of the project could disturb several creeks as a roadway is built over them. The project crosses three of the major waterways found in the area: Canal Creek, Livingston Canal, and Black Rascal Creek. Creek disturbance or alteration could lead to erosion, and sedimentation. In order to avoid these potential construction impacts, the existing flow rates and patterns of the creeks should be preserved. Mitigation Measure HWQ-1C would mitigate potential erosion and sedimentation impacts from the disturbance of streams.

Mitigation Measure HWQ-1a:

Consistent with requirements of the NPDES program, the project sponsor shall obtain an individual local permit or multiple permits (depending on phasing plan), subject to approval by the RWQCB. ~~The project sponsor shall prepare a SWPPP as required under the Caltrans statewide NPDES permit (99-06-DWQ) for areas within state jurisdiction. A NOI shall be filed, under the Caltrans NPDES Permit. To comply with the conditions of the Caltrans NPDES Permit, and to address the temporary water quality impacts resulting from the construction activities of this project, Standard Special Provision (SSP) 07-345 will be included in the Plans, Specifications, and Estimates. This SSP will address water pollution control work and the implementation of a SWPPP during construction.~~

Mitigation Measure HWQ-1b:

The project sponsor shall prepare a SWPPP ~~for areas outside of state jurisdiction~~, as required under the individual local permits that will be approved by the RWQCB. A NOI shall be filed under the local permits. To comply with the conditions of these permits, and to address the temporary water quality impacts resulting from the construction activities of this project, a SWPPP will be required before construction.

Mitigation Measure HWQ-1c:

The SWPPP required for this project shall include the following elements:

- *Project Description* - Includes maps and other information related to construction activities and potential sources of pollutants.
- *Minimum Construction Control Measures* - These may include limiting construction access routes, stabilization of areas denuded by construction, and using sediment controls and filtration. **The plan will include the design of construction site Best Management Practice (BMP) requirements, per the Caltrans' Project Planning Design Guide and stormwater guidance manuals.**
- *Erosion and Sediment Control* - The plan is required to contain a description of soil stabilization practices, control measures to prevent a net increase in sediment load in stormwater, controls to reduce tracking sediment onto roads, and controls to reduce wind erosion.
- *Non-Storm Water Management* - The plan will include provisions to reduce and control discharges other than stormwater.

- *Post-Construction Storm Water Management* - The SWPPP requires the development of stormwater control measures to provide ongoing protection of water resources. **The plan will include permanent treatment, pollution prevention, and maintenance BMPs.**
- *Waste Management and Disposal* - All wastes (including equipment maintenance waste: used oil, batteries) must be disposed of as required by state and federal law.
- *Maintenance, Inspection, and Repair* - The plan requires an ongoing program to insure that all controls are in place and operating as designed.
- *Monitoring* - This provision requires documented inspections of the control measures.
- *Reports* – MCAG will prepare an annual report on the construction project and submit this report to the RWQCB. The report must certify compliance with the SWPPP.
- *Training* - Inspections, maintenance and repair must be done by trained personnel.

Mitigation Measure HWQ-1d:

Erosion control measures shall be applied to all exposed areas during construction. Erosion control measures may include the trapping of sediments within the construction area by placing barriers, such as straw bales, at the perimeter of downstream drainage points or by construction of temporary detention basins. Other methods of minimizing erosion impacts may include hydromulching and limiting the amount and length of exposure of graded soil. The temporary erosion control and water quality measures shall be defined in detail in the SWDR and SWPPP.

Mitigation Measure HWQ-1e:

In areas where the proposed roadway alignment would cross creeks and canals, a structure (such as a box culvert) shall be added to convey the flow of water under the roadway. **Figure 4.9-3** shows the location of these structures. Alternative 1A will require one structure across Canal Creek and one structure across Black Rascal Creek. **Modified** Alternative 1B will require four structures across Canal Creek, one structure across Livingston Canal, and one structure across Black Rascal Creek. The proposed interchange improvements at SR 99 (common to both alternatives) cross Canal Creek four times, two of which require new conveyance structures to be built. Design and flow rates for the conveyance structures will be determined by a final hydraulic report as approved by Merced County.

Included in **Table 4.9-1** are the temporary control measures that will likely be part of the project.

Construction BMPs (as listed in **Table 4.9-1**) are temporary BMPs that contractors are required to implement to meet BCT/BATEA requirement for construction. The selected temporary BMPs are consistent with the practices required under State of California NPDES General Permit for storm water discharges associated with construction activities.

Table 4.9-1 Recommended Temporary Source Control Measures

Category	Minimum Requirement(s)[a]
Soil Stabilization Practices	▪ Scheduling ▪ Preservation of Existing Vegetation ▪ Straw Mulch ▪ Erosion Control Blankets ▪ Outlet Protection/ Velocity Dissipation Devices ▪ **Hydraulic Mulch** ▪ **Plastic Cover**
Sediment Control Practices	▪ Silt Fence ▪ Fiber Rolls ▪ Street Sweeping and Vacuuming ▪ Storm Drain Inlet Protection
Wind Erosion Control	▪ Wind Erosion Control
Non-Storm Water Control	▪ Illicit Connection/Illegal Discharge Detection and Reporting ▪ Vehicle and Equipment Cleaning ▪ Vehicle and Equipment Fueling ▪ Vehicle and Equipment Maintenance
Waste Management & Materials Pollution Control	▪ Material Delivery and Storage ▪ Material Use ▪ Stockpile Management ▪ Spill Prevention and Control ▪ Solid Waste Management ▪ Concrete Waste Management ▪ Sanitary/Septic Waste Management
Temporary Construction Practice	▪ Stabilized Construction Entrance/Exit

[a] Other Temporary Water Quality or Construction site BMPs are listed in the Caltrans Statewide Storm Water Management Plan and each should be considered for inclusion into the project as the design progresses.

Source: WRECO. *Draft Water Quality Study Report*. Walnut Creek: n.p., 2007.

Expressway construction that impacts MID rights-of-way for canals, irrigation laterals, and creeks will require a "construction agreement" and a "joint use agreement" between MID and Merced County. Compliance with the Caltrans statewide NPDES and individual local permits **and/or agreements** should reduce or avoid potentially substantial construction-related water quality impacts. Implementation details of these mitigation measures shall be developed and incorporated into the project design and operations prior to project construction. With proper implementation of these mitigation measures, short-term or temporary construction-related water quality impacts will be minimized.

Significance After Mitigation: Less than Significant

Impact HWQ-2: Spills and leaks of lubricants and other fluids associated with vehicles and equipment used during construction activities would increase the potential for pollution transported by stormwater runoff into nearby creeks and storm drains.

Fueling and maintenance of construction vehicles would occur in the project study area during construction. There would be a risk of small accidental spills or leaks of fuels, oils, or other potentially toxic materials. An accidental release of these materials may pose a threat to water quality if contaminants enter storm drains, irrigation channels, or creeks. The magnitude of the impact from an accidental release would depend on the amount and type of material spilled. The potential for large scale spills on the roadway is discussed in **Section 4.10, Hazards and Hazardous Materials**. The impact discussed here would be from unreported small scale releases during construction (i.e. small amounts of fuel being spilled during vehicle refueling).

Mitigation Measure HWQ-2:

Mitigation Measures HWQ-1a through HWQ-1c would reduce construction vehicle and equipment related water pollution to a less than significant level.

Significance After Mitigation: Less than Significant

IMPACTS DURING PROJECT OPERATION

Impact HWQ-3: Pollutants associated with vehicles would be deposited on the roadway during project operation and would be transported by stormwater runoff into nearby creeks and storm drains adversely affecting water quality.

Construction of the AME project would include the paving of approximately 90 acres of land. This pavement would increase the amount of impervious paved areas and stormwater runoff from the impervious roadway surface would carry roadway associated pollutants with it. This would increase the polluted stormwater runoff from the project during rain events.

Heavy metals associated with vehicle tire and brake wear, oil and grease, and air emissions are the primary toxic pollutants associated with transportation corridors. During project operation, these pollutants would be deposited from vehicles and may be carried by stormwater into nearby water bodies. The nature of these impacts depends on the uses and flow rate or volume of the receiving water, rainfall characteristics, and roadway characteristics.

If expressway storm water drainage is discharged into any MID facilities, the Agency Agreement between MID No.1 and Merced County will have to be amended to reflect the additional drainage benefit provided by the MID facilities.

Mitigation Measure HWQ-3a:

The project sponsor shall prepare a SWPPP and apply for inclusion in the ~~Caltrans~~ NPDES **program** ~~permit~~ as required under Mitigation Measure HWQ-1a. As required under the NPDES ~~permit~~ **program**, the project will include both Design Pollution Prevention and Treatment BMPs to treat stormwater pollution during project operation.

Mitigation Measure HWQ-3b:

When establishing Design Pollution Prevention BMPs for the project, the project sponsor shall consider all of the following affects:

- *Downstream Effects Related to Potentially Increased Flow* – The project will discharge to unlined channels. As a result, erosion control shall be applied to the ditches. There is the potential for increased sediment loads to be transported to downstream waterways; therefore permanent erosion control measures shall be applied to all new or exposed slopes. The project will cross several waterways, and there may be the potential for creating unstable channel conditions. BMPs will address the stability of channels crossed by the project
- *Preservation of Existing Vegetation* – At all locations, preserving existing vegetation is beneficial.
- *Concentrated Flow Conveyance Systems* – The project will: A) have the potential to cause gullying, B) create or modify existing slopes, C) be subject to roadway flooding, D) require the concentration of surface runoff, and E) require cross drains. Each of these conditions will require the proper design of the following drainage facilities to handle concentrated flows.
  - Ditches, berms, dikes and swales
  - Overside drains
  - Flared end sections
  - Outlet protection/velocity dissipation devices
- *Slope/Surface Protection Systems* – The project will create or modify existing slopes requiring the application of one or more of the following control measures.
  - Vegetated surfaces
  - Hard surfaces

Mitigation Measure HWQ-3c:

Detention and infiltration devices shall be implemented as approved Treatment BMPs. Soil erosion shall be primarily handled with the proper design of landscaping and the application of final ground treatment BMPs, such as planting and fiber rolls. Detention basins shall also be used to reduce the sediment and particulate matter in stormwater runoff.

A detention basin is a permanent treatment BMP designed to reduce the sediment and particulate matter in stormwater runoff. **The basin allows a large volume of water to enter, slowly (to prevent erosion), and limits the outflow by having small orifices (or openings) at the lowest point in the structure.** Water stops flowing once it reaches a detention basin and over time particulate matter (including various pollutants) falls out of the water to the bottom of the basin **Water leaves the basin through a water quality outlet structure that is designed with these orifices. Water is stored in the basin, temporarily, for enough time for pollutants and other floating sediments to settle, but not enough time for vector control issues (i.e. growth of potential disease-carrying mosquito populations) to develop. The water then is discharged to a discharge point (Canal Creek) through an outflow pipe. The rate at which the water leaves the basin is dependant on the design of the orifices. Generally, water is contained in detention basins for approximately 24 to 72 hours.**

Significance After Mitigation: Less than Significant.

Impact HWQ-4: Development of the AME project would increase pollution in groundwater since pollutants washed off the roadway may percolate into and contaminate groundwater.

Pollutants from stormwater runoff accumulate during the dry summer months and the first major autumn storm can flush high concentrations of pollutants to receiving water bodies which can then percolate into groundwater. In some cases, stormwater can directly discharge directly into groundwater sources. **Because of the high groundwater table in the project area, construction activities to depress the section of Modified Alternative 1B between Green Sands Avenue and the crossing of Canal Creek just south of Avenue Two could encounter contaminated groundwater. However, groundwater conditions need to be further evaluated during the final design phase of the AME project to confirm groundwater depths in the immediate construction area and types of contaminants.**

Mitigation Measure HWQ-4a:

The project sponsor shall prepare a SWPPP and apply for inclusion in the ~~Caltrans~~ NPDES ~~permit~~ **program** for work within the state right of way and an individual permit for work outside the state right of way, as required under Mitigation Measure HWQ-1a, 1b, and 1c. As required under the NPDES permit and discussed under Mitigation Measures HWQ-3b and 3c, the project will include both Design Pollution Prevention and Treatment BMPs required to treat stormwater pollution.

Mitigation Measure HWQ-4b:

If Modified Alternative 1B is selected, groundwater quality testing shall be performed, specifically in the area of the depressed section between Green Sands Avenue and Canal Creek, to verify the presence of groundwater contaminants. If contaminants are present in the groundwater, groundwater treatment shall be required.

Significance After Mitigation: Less than Significant

Impact HWQ-5: The AME project would convert pervious surface area into impervious surface area which would increase the amount of stormwater runoff in the project study area to a level that would exceed the capacity of existing or planned stormwater drainage systems.

Construction of the AME project will include the paving of approximately 90 acres of land. Stormwater that is currently absorbed into the ground would instead runoff the impervious roadway surface and into water conveyance features that could overflow and flood nearby areas. Existing and planned stormwater drainage systems would not be sufficient to capture stormwater runoff from the AME project.

Implementation of drainage systems as discussed under Mitigation Measures HWQ-5a and 5b will accommodate stormwater flows that would result from the project. These mitigation measures will maintain the existing drainage pattern of the project study and match preconstruction flows of stormwater runoff to post construction discharge.

Mitigation Measure HWQ-5a:

New drainage facilities shall be constructed where needed. New roadside ditches and detention basins will be constructed to accommodated increased stormwater flows. Existing drainage systems may need to be extended or replaced if undersized. The specifications of roadside ditches will be finalized during the final design phase of the project, although the ditches must be built with a minimum 4:1 side slope. The use of detention and infiltration basins and BMPs as discussed in Mitigation Measure HWQ-3C will be implemented so that untreated runoff does not adversely affect roadside ditches.

Detention basins are proposed at each of the water body crossings either along the main roadway or in the loop areas. Fourteen detention basins would be required for Alternative 1A and thirteen detention basins required for **Modified** Alternative 1B.

The construction of drainage facilities is complicated by the flat terrain and that the elevations of the receiving waters would be higher than the roadside ditches. In order to overcome the drainage challenge presented by minimal difference in elevation, installation of pumps may be required at the end of these ditches in order to drain runoff from the roadside ditches to the existing canals.

The design of roadside ditches shall be based on flow data calculations by the design engineer. Final design of roadside ditches shall be approved by the Merced County Department of Public Works and the Merced Irrigation District prior to issuance of the permit to construct. Final Design shall be based on procedures presented in the Caltrans Highway Design Manual, Fifth Edition and the Federal Highway Administration HEC-22 publication for highway pavement drainage.

Mitigation Measure HWQ-5b:

Detention basins shall be constructed to accommodate runoff resulting from a 25-year, 24-hour storm **and to collect any additional flood spill flows from nearby water bodies during major precipitation events**. Additional right-of-way would be required at all the proposed outfall locations ranging from approximately 100 to 150 feet of additional right-of-way width from the edge of the pavement. Pumps shall be installed after each detention basin to lift the detained stormwater and to meter the flow that reaches each water body. Final design shall be based on procedures presented in the Caltrans Highway Design Manual, Fifth Edition and the Federal Highway Administration HEC-22 publication for highway pavement drainage and approved by the Merced County Department of Public Works and the Merced Irrigation District prior to issuance of the permit to construct.

Significance After Mitigation: Less than Significant.

Impact HWQ-6: Development of the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek would impact existing groundwater table due to its potentially high elevation at this location.

Construction of the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek would extend approximately -20 feet below grade. At its highest point, the groundwater table could reach a depth of 10 feet below ground surface in the area proposed for the depressed section of Modified Alternative 1B. Since the groundwater elevation is potentially high, operational

impacts to the groundwater could result from groundwater flow obstruction as a result of the implementation of the depressed section.

Mitigation Measure HWQ-6:

Depending on the depth of intrusion into the groundwater table, the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek shall be designed to avoid any intrusion of groundwater into the roadway. To avoid any cross contamination or interference of groundwater movements, an underground impermeable cutoff wall shall be constructed around and below the depressed section. In addition, a reinforced concrete section for the depressed section shall also be designed to resist uplifting due to groundwater. These elements for the depressed section of Modified Alternative 1B would evaluated during the deign phase of the AME project and a feasible solution would be developed in coordination with the applicable governing agencies.

Significance After Mitigation: Less than Significant.

Impact HWQ-7: If Modified Alternative 1B is selected, motorists traveling on the depressed section of Alternative 1B between Green Sands Avenue and Canal Creek would be exposed to significant hazards to floods during major precipitation events.

Under Modified Alternative 1B, the new roadway would be below existing ground level between Green Sands Avenue and Canal Creek to pass under Avenue One. The approximately ½-mile depressed section of Modified Alternative 1B would have a maximum depth of approximately -20 feet below grade at it lowest point. During major precipitation events, flood waters could enter the depressed section of the roadway and interrupt traffic due to flooding. However, off-site flows north of the depressed section would be intercepted and conveyed across the AME before it reaches the depressed section. A pumping plant is proposed as part of the project drainage design to pump storm and flood water discharge from the depressed section to the nearest water body, Canal Creek. The pumping plant would be designed for the 10-year storm event, as required by the Merced County Department of Public Works *Strom Drainage Design Manual.* However, for any precipitation events larger than the 10-year storm event, the depressed roadway may become inundated with flood water, which would expose motorists to flood hazards. To help prevent such flooding from precipitation events larger than the 10-year storm, a berm would be constructed on the western side of Modified Alternative 1B in this area to help minimize potential flood flows from entering the depressed section from the west. In addition, Mitigation Measure HWQ-5b would require the construction of detention basins to collect water from storm events and spill flows from nearby water bodies. Detention basins near the depressed section of Modified Alternative 1B would collect spill flows from Canal Creek during flood events to reduce the inundation of flood waters into the depressed section (as discussed previously in Mitigation Measure HWQ-3c). Mitigation Measure HWQ-7 would further reduce impacts to hazards to floods to a less-than-significant level.

While the depressed section of Modified Alternative 1B would expose motorists to a potential flood hazard during major precipitation events, the new bridge crossing over Black Rascal Creek under both Alternative 1A and Modified Alternative 1B would be constructed to pass 100-year flows (see location A6/B10 in Figure 4.9-3). Because the Black Rascal Creek channel is undersized, stormwater would top the banks and inundate the floodplain during a 100-year flood event. However, the

proposed roadbase and bridge would be elevated in this area to a height (approximately 3-5 feet above surrounding terrain) that would prevent flooding of the roadway or bridge. Thus, at this location, the AME project would not create new risks to people in vehicles during major precipitation events.

Mitigation Measure HWQ-7:

For major precipitation events larger than the 10-year storm event, an alert system shall be installed to warn motorists traveling on the AME of potential hazards to floods within the depressed section of Modified Alternative 1B. Road signage alerting motorists of potential flooding hazards shall be installed south of Green Sands Avenue for northbound motorists and north of Avenue Two for southbound motorists. Flashing lights shall be installed on the roadway signage that would be used if the depressed section of Modified Alternative 1B were to become flooded. In the event that flooding occurs at the depressed section of Modified Alternative 1B, the depressed section of the AME shall be closed to motorists. Traffic shall be diverted onto Green Sands Avenue and Avenue Two and then to local roads between these two points to avoid exposure to hazards to floods in the depressed section of Modified Alternative 1B.

Significance After Mitigation: Less than Significant.

4.10 HAZARDS AND HAZARDOUS MATERIALS

This section addresses hazards to human health and the environment from existing hazardous materials within the project study area as well as the potential for the project to create hazardous conditions. The analysis is based on a Phase I Initial Site Assessment (Phase I) preformed by Parikh Consultants (September 26, 2006). As part of this assessment, a search was performed of databases that provide information regarding the status, locations and remediation actions of sites with a history of hazardous material use or release. The Phase I also provides a review of previous land uses, and information obtained from site reconnaissance in the project area. The AME project's compliance with policies and regulations related to hazardous materials is also discussed in this section.

4.10.1 EXISTING CONDITIONS

Existing conditions in the project study area were determined by a site visit and a review of regulatory databases as discussed below.

Site Visit

A site visit was performed on July 21, 2006. The site visit determined that existing hazards or hazardous substances in the project area could include agricultural chemicals, aerially deposited lead, contaminants associated with railroads, asbestos and lead based paint, existing contaminants at the Former Castle Air Force Base, and contaminants from abandoned cars and farm equipment. Because access to private property was limited, information was generally gathered from the nearest roadway. Each of the hazards or hazardous substances identified during the site visit are described in more detail below.

AGRICULTURAL CHEMICALS

The majority of the project study area is farmland or land used for grazing and raising livestock. Agricultural land of this type commonly contains contaminants such as pesticides, herbicides, materials deposited in animal wastes, and other farming- and livestock-related chemicals.

Overtime, agricultural chemicals in the soil can react in a variety of ways, breaking down and leaching into surface water runoff or groundwater, turning into a gaseous state, chemically binding with the soil, or become absorbed in plants or microorganisms. Exposure to pesticide/herbicide residues can potentially harm plants and animals and contaminate water resources.

These chemicals can also create human health hazards. The health effects of such chemicals depend on the type and amount of chemical to which a person is exposed.[1] Short-term exposure to high levels of pesticides

[1] USEPA. July 24, 2007. August 6, 2007. Pesticides: Health and Safety. USEPA http://www.epa.gov/pesticides/health/human.htm.

may cause respiratory, gastrointestinal, allergic, or neurological symptoms.[2] Long-term exposure may be associated with neurologic diseases such as Parkinsons and Alzheimers.

AERIALLY DEPOSITED LEAD

Until their use in the 1990s was banned, additives in gasoline expelled lead-based compounds from engine exhaust. Consequently, lead was aerially deposited as a particulate, frequently concentrating onto the adjacent road shoulders and in medians. Lead can be hazardous to humans as exposure can affect the nervous system, cause small increases in blood pressure, particularly in middle-aged and older people, and can cause anemia.[3] Exposure to high lead levels can severely damage the brain and kidneys in adults or children and create reproductive problems in adults. The USEPA has determined that lead is a probable human carcinogen.

Parts of the project study area, including State Route (SR) 99, Ashby Road, Southern Pacific Avenue, Santa Fe Drive, and areas along Bellevue Road have been traffic bearing roads since the 1950's. It is likely that the surface soils at intersections and along the roadways contain aerially deposited lead (ADL).

RAILROAD RELATED HAZARDS

From the late 1950s until the mid 1980s, it was common railroad practice in California to use slag from copper smelting operations (slag is the waste left after the melting of ores and the separation of metal from them) for track ballast. Ballast is the trackbed, often made up of small angular rocks such as gravel, upon which railroad ties are laid. Ballast serves to facilitate drainage, create and even surface, and hold the tracks in place as a train passes by. Use of slag ballast may cause contamination of soil, surface waters, and groundwater from metals (primarily arsenic and lead). The potential health effects of lead have previously discussed. Health effects from arsenic depend on the type of arsenic, type of exposure, length of exposure, and amount of exposure.

Human exposure to arsenic can occur from ingesting small amounts present in food and water, and can occur by breathing air containing arsenic, or living in areas with unusually high natural levels of arsenic in rock.[4] Organic arsenic compounds are less toxic than inorganic arsenic compounds. Exposure to lower levels of arsenic can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Exposure to lower levels for a long time can cause a discoloration of the skin and the appearance of small corns or warts. Skin contact with inorganic arsenic may cause redness and swelling. Exposure to higher than average levels of arsenic occurs mostly in the workplace, near hazardous waste sites, or in areas with high natural levels. Breathing high levels of inorganic arsenic can create a sore throat or irritated lungs. At high levels, inorganic arsenic can cause death.

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[2] Centers for Disease Control and Prevention. *Environmental Hazards and Health Effects.* Atlanta, GA. August 13, 2007. http://www.cdc.gov/nceh/hsb/pesticides/activities.htm.

[3] Agency for Toxic Substances and Disease Registry. January 18, 2007. Center for Disease Control. Atlanta, GA. July 16, 2007. http://www.atsdr.cdc.gov/tfacts13.html.

[4] Agency for Toxic Substances and Disease Registry. January 18, 2007. Center for Disease Control. Atlanta, GA. July 16, 2007. http://www.atsdr.cdc.gov/tfacts2.html.

Railroad lines run parallel to SR 99 and Santa Fe Drive and both proposed alignments of the AME would cross these railroad lines. Soils adjacent to railroad tracks are typically impacted with heavy metals, total petroleum hydrocarbons (TPH) from diesel fuel spills, fuel oil, and poly-chlorinated biphenyls (PCBs). These potential hazards are discussed below.

TPH is a term used to describe a large family of several hundred chemical compounds that originally come from crude oil.[5] Health effects associated with TPH vary based on the amount of exposure and the type of TPH compound present. Some TPH compounds can affect the central nervous system, including one compound that can cause a nerve disorder called "peripheral neuropathy," resulting in numbness in the feet and legs. Other TPH compounds can cause effects on the blood, immune system, lungs, skin, and eyes. The International Agency for Research on Cancer (IARC) has determined that one TPH compound (benzene) is carcinogenic to humans.

PCBs are a group of synthetic organic chemicals that were manufactured in the U.S. from 1929 to 1977. The USEPA classifies PCBs as persistent and toxic compounds that are likely human carcinogens, endocrine disruptors, and immune system disruptors.[6] Throughout the 20th century, PCBs were used in hundreds of manufacturing and industrial applications and were most commonly found within electrical equipment. There is potential for PCBs to be found in soil along the project study area due to railroad operations associated with commercial and industrial activities.

ASBESTOS AND LEAD BASED PAINT

Asbestos was commonly used in construction materials, such as insulation in buildings, until the 1980s, when its use was phased out. Therefore, asbestos fibers may be found in buildings to be demolished.[7] Buildings to be demolished may also contain lead based paint. Health effects related to lead were previously discussed under the discussion of aerially deposited lead. Breathing high levels of asbestos fibers for a long time may result in scar-like tissue in the lungs and in the pleural membrane (lining) that surrounds the lung. This disease is called asbestosis and is usually found in workers exposed to asbestos, but not in the general public. People with asbestosis have difficulty breathing, often a cough, and in severe cases heart enlargement. Asbestosis is a serious disease and can eventually lead to disability and death.

Breathing lower levels of asbestos may result in plaques in the pleural membranes.[8] Pleural plaques can occur in workers and sometimes in people living in areas with high environmental levels of asbestos. Effects on breathing from pleural plaques alone are not usually serious, but higher exposure can restrict breathing. The

[5] Agency for Toxic Substances and Disease Registry. January, 2007. Center for Disease Control. Atlanta, GA. July 16, 2007. http://www.atsdr.cdc.gov/tfacts123.html.

[6] Agency for Toxic Substances and Disease Registry. January 31, 2007. Center for Disease Control. Atlanta, GA. July 16, 2007. http://www.atsdr.cdc.gov/tfacts17.html.

[7] Agency for Toxic Substances and Disease Registry. January 31, 2007. Center for Disease Control. Atlanta, GA. July 16, 2007. http://www.atsdr.cdc.gov/tfacts61.html.

[8] Agency for Toxic Substances and Disease Registry. January 31, 2007. Center for Disease Control. Atlanta, GA. July 16, 2007. http://www.atsdr.cdc.gov/tfacts61.html.

Department of Health and Human Services (DHHS), the World Health Organization (WHO), and the USEPA have determined that asbestos is a human carcinogen.[9]

There are a number of buildings along the project study area within the proposed right-of-way (ROW) of either alignment that would likely be demolished. These buildings appear to be constructed prior to the 1980's and most likely contain asbestos and lead based paint.[10]

FORMER CASTLE AIR FORCE BASE

The proposed roadway right-of-way for **Modified** Alternative 1B travels through the southern part of the former Castle Air Force Base. ~~This site is a federal Superfund site with known soil and groundwater hazards. A number of remediation systems have been installed on the site and groundwater cleanup is on going.~~ **This site is a federal Superfund site with known soil and groundwater hazards (the ground affected by Modified Alternative 1B was a former landfill and leach field).** However, on the southern tip of the former Castle Air Force Base, in the area of **Modified** ~~the proposed~~ Alternative 1B, no activities or remediation systems were observed.

ABANDONED CARS AND FARM EQUIPMENT

Potential hazards from abandoned cars originate from fuel leaks that could deposit substances such as TPH; Benzene, toluene, ethylbenzene, and xylenes (BTEX); Methyl tert-butyl ether (MTBE); oil and grease; associated Polycyclic Aromatic Hydrocarbons (PAHs), and lead into the soil. Potential hazards from stored or abandoned farm equipment include the same plus those from leaking pesticides (including arsenic) and herbicides. Potential effects of agricultural chemicals, lead and TPH have previously discussed. Potential human health effects of BTEX, MTBE, and PAHs are discussed below.

MTBE, a volatile organic compound (VOC), is a flammable liquid which is used as an additive in unleaded gasoline. MTBE may be broken down quickly in the air by sunlight and quickly evaporates from open containers and surface water, so it is commonly found as a vapor in the air.[11] Small amounts of MTBE may dissolve in water and percolate into groundwater where it can remain for a long time. MTBE may also stick to particles in water, which will cause it to eventually concentrate in the bottom sediment of surface and subsurface water systems.

People may come in contact with MTBE in the environment by breathing exhaust fumes while driving a car, breathing air near roadways, or by drinking, swimming, or showering in water that has been contaminated with MTBE.[12] There are no data on the effects in people of drinking MTBE, but drinking or breathing MTBE may cause nausea, nose and throat irritation, and nervous system effects.

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[9] Agency for Toxic Substances and Disease Registry. January 31, 2007. Center for Disease Control. Atlanta, GA. July 16, 2007. http://www.atsdr.cdc.gov/tfacts61.html.

[10] Parikh Consultants, Inc. *Phase I Initial Site Assessment.* Milpitas, 2006.

[11] Agency for Toxic Substances and Disease Registry. February 2, 2007. Center for Disease Control. Atlanta, GA. August 13, 2007. http://www.atsdr.cdc.gov/tfacts91.html.

[12] Agency for Toxic Substances and Disease Registry. February 2, 2007. Center for Disease Control. Atlanta, GA. August 13, 2007. http://www.atsdr.cdc.gov/tfacts91.html.

Polycyclic aromatic hydrocarbons (PAHs) are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or charbroiled meat. PAHs are usually found as a mixture containing two or more of these compounds, such as soot. PAHs can be found in automobile exhaust. Air, water, or soil near hazardous waste sites can contain and expose people to PAHs.[13] In soils, PAHs are most likely to stick tightly to soil particles and some PAHs move through soil to contaminate underground water. PAHs can break down by reacting with sunlight and other chemicals in the air, over a period of days to weeks. Most PAHs do not dissolve easily in water. They stick to solid particles and settle to the bottoms of lakes or rivers. Microorganisms can break down PAHs in soil or water after a period of weeks to months The Department of Health and Human Services (DHHS) has determined that some PAHs may reasonably be expected to be carcinogens.

BTEX is a group of volatile organic compounds (VOCs) found in petroleum hydrocarbons, such as gasoline, and other common environmental contaminants.[14] Acute exposure to BTEX has been associated with nervous system effects.[15] Long term effects of exposure to benzene include leukemia. The Department of Health and Human Services (DHHS) the International Agency for Research on Cancer (IARC) and the U.S. EPA have determined that benzene is carcinogenic to humans.

At the intersection of Elliot Avenue and Gurr Road, on the north side of Elliot Avenue, there are a few abandoned cars located on private property. Farm equipment and abandoned trucks were also observed on Joe Pedras Farm on Avenue One. Storage areas for farm equipment and machinery were also visible in many parts of the project study area, particularly from Southern Pacific Avenue and SR 99.

Agency Database Review

An Environmental Data Resources Inc. Report (EDR) was performed for the Phase I to identify the presence of known hazardous waste sites in the vicinity of the project study area. This report provides listings from State and Federal Regulatory Agencies of recorded incidents of spills, soil and groundwater contamination, as well as the locations of storage and disposal facilities that handle hazardous waste. **Table 4.10-1** lists underground storage tanks that were identified in the project study area.

The EDR covered a 4 mile radius from the proposed interchange with SR 99. As a result, the search area was large and included many sites that were not within the immediate project study area. Ninety-seven sites were listed within the search radius. Their location relative to the project site is shown in **Figure 4.10-1**. Most of these sites are active or closed Underground Storage Tanks (USTs), Leaking Underground Storage Tanks (LUSTs), or Haznet sites that are within the City of Merced or Atwater.[16] A majority of the sites within the project study area are farms with active USTs. One identified Resource Conservation and Recovery Act (RCRA) site, the former Castle Air Force Base was also identified. Because of their location, the majority of

[13] Agency for Toxic Substances and Disease Registry. February 7, 2007. Center for Disease Control. Atlanta, GA. August 13, 2007. http://www.atsdr.cdc.gov/tfacts69.html.

[14] USGS. *BTEX*. August 13, 2007. http://toxics.usgs.gov/definitions/btex.html.

[15] Agency for Toxic Substances and Disease Registry. Center for Disease Control. Atlanta, GA. August 13, 2007. http://www.atsdr.cdc.gov/toxfaq.html.

[16] The purpose of HazNet is to contribute to reducing loss of human life, property, and resources from coastal natural hazards in the United States. See http:www.haznet.org.

sites identified in the EDR would not affect the project study area. Sites of potential concern include the former Castle Air Force Base and several USTs. Known USTs with a potential to affect the project are listed in **Table 4.10-1**.

Table 4.10-1 Underground Storage Tanks Identified in the Project Study Area

Type of UST	Alternative	Location
350-gallon UST	1B	Joe Pedras farm, 4331 Avenue One
700-gallon unleaded UST	1A/1B	Atwater Veterinary Clinic, 3060 Ashby Road on SR 99
900-gallon regular gasoline UST, a 500 gallon diesel UST, 500 gallon unleaded gasoline UST	1A/1B	Agro Farm Inc. 3221 N. Ashby Road
350-gallon fuel UST	1A/1B	4515 W. Elliot Avenue
1,000-gallon fuel UST	1A/1B	Wickum Construction, 4389 Elliot Avenue
250-gallon fuel UST	1A/1B	Sorensen, 4393 Landram Avenue
300-gallon fuel tank	1A/1B	Fragalia Farm, 1651 Gurr Road

Source: Parikh Consultants, 2006.

4.10.2 REGULATORY SETTING

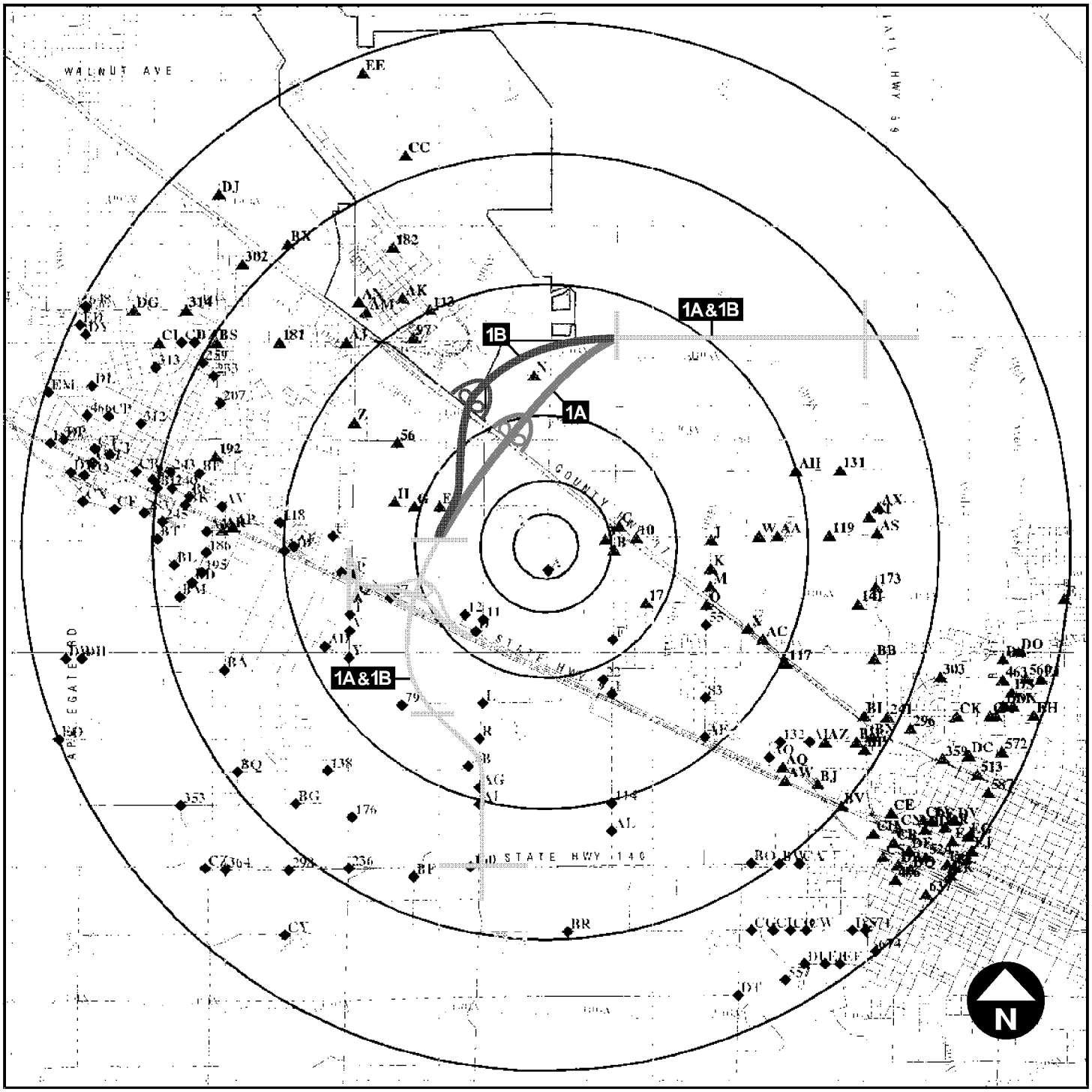
FEDERAL REGULATIONS

The U.S. Environmental Protection Agency (EPA) is the main federal agency responsible for enforcing regulations relating to hazardous materials and wastes, including evaluation and remediation of contamination and hazardous wastes. The EPA works collaboratively with other agencies to enforce materials handling and storage regulations and site cleanup requirements. The Occupational Safety and Health Administration (OSHA) and the Department of Transportation (DOT) are authorized to regulate safe transport of hazardous materials.

Federal regulations which regulate the handling (including transportation), storage, work- place safety, and disposal of hazardous materials and wastes are contained primarily in Titles 10, 29, 40, and 49 of the Code of Federal Regulations (CFR) specifically the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Responsibility, Compensation, and Liability Act of 1980 (CERCLA). RCRA includes procedures and requirements for reporting releases of hazardous materials, and for cleanup of such releases. RCRA also includes procedures and requirements for handling hazardous wastes or soil or groundwater contaminated with hazardous wastes. CERCLA delineates the liability for contamination between current property owners and others.

Superfund is the name given to the environmental program established to address abandoned hazardous waste sites and the name of the fund established by the CERCLA, which allows the U.S. EPA to clean up such sites and to compel responsible parties to perform cleanups or reimburse the government for EPA-lead cleanups. A Superfund site is an uncontrolled or abandoned place where hazardous waste is located, possibly affecting local ecosystems or people.

The Hazardous Materials Transportation Act is administered by the DOT via its issuance of inspections, training, and transportation requirements and information; the Federal Government delegates enforcement



Legend

Target Property	Coal Gasification Sites	Indian Reservations BIA	100-year flood zone	AME
Sites at elevations higher than or equal to the target property	National Priority List Sites	Power transmission lines	500-year flood zone	Alternative 1A
Sites at elevations lower than the target property	Landfill Sites	Oil & Gas pipelines	Federal Wetlands	Modified Alternative 1B
	Dept. Defense Sites		Areas of Concern	

ATWATER-MERCED EXPRESSWAY

Location of Known Hazardous Waste Sites

REVISED FIGURE 4.10-1

Source: Parikh Consultants, June 2005

authority to the states. The purpose of the law is to provide adequate protection against the risks to human health and property inherent in transporting hazardous materials.

STATE REGULATIONS

State agencies that regulate hazardous materials and contamination include the Department of Health Services (DHS), Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB). The DTSC administers the U.S. EPA's standards regarding public health effects of soil contamination, while the RWQCB administers State water quality standards for surface and groundwater. Primary responsibility for remediation of a specific parcel depends on the proposed use of the site, the character of waste contaminants and the need for site monitoring. Transport of hazardous materials is administered by the California Department of Transportation (Caltrans) and enforced by the California Highway Patrol (CHP).

Relevant State laws that address soil and water pollution, hazardous materials storage, handling, transport and disposal include the State Water Code, Underground Storage Tank Code, Cortese Act (listing of hazardous waste and substances sites) and Proposition 65 (safe drinking water and toxics enforcement).

UNDERGROUND STORAGE TANK PROGRAM

The Central Valley UST Program is implemented under Division 20, Chapters 6.7 and 6.75 of the California Health and Safety Code and Title 23, Division 3, Chapter 16 of the California Code of Regulations. The program has two elements: leak prevention, which is implemented statewide by Local Implementing Agencies in 58 counties and 49 cities, and leak investigation and cleanup which is implemented by the Regional Water Quality Control Board (RWQCB) with assistance from the Local Implementing Agencies. The County of Merced is under contract with the State Water Resources Control Board (SWRCB) to provide investigation and cleanup oversight on some UST sites.

MERCED COUNTY GENERAL PLAN

The Merced County General Plan Land Use Element contains several policies related to the potential hazards related to airport safety and use of the former Castle Airport Base. The following policies apply to the project.

Policy 9.A.9 Recognize the importance of public airports and the Castle Airport Aviation and Development Center by encouraging only compatible land uses in areas subject to safety or noise impacts from these facilities.

Policy 8.A.12 Structures which could impact air travel shall be reviewed for possible impacts.

MERCED COUNTY AIRPORT LAND USE COMPATIBILITY PLAN

CEQA provides specific guidance that when a project is located near an airport that EIRs evaluate the potential for a project to create a safety hazard for people. As a result this EIR includes a discussion of local policies related to the former Castle Air Force Base and surrounding land uses.

The Merced County Airport Land Use Commission adopted the Merced County Airport Land Use Compatibility Plan in April 1999. The plan's principal compatibility concerns include land use safety with respect both to people on the ground and the occupants of aircraft, protection of airport airspace, and general concerns related to aircraft overflights. Major capital improvements, including roadways, are considered a land use where compatibility with airport activity is of particular concern since they promote urban uses and greater population in undeveloped areas. As shown in **Figure 4.10-2**, the project is within Compatibility Zones B1, B2, C, and D of the Castle Airport Influence Area. The following policies apply to the project.

Policy 4.2.4 Storage of fuel or other hazardous materials shall be prohibited in Compatibility Zone A. Except for aviation fuel, other aviation-related flammable materials, and up to 2,000 gallons of non-aviation flammable materials, above ground storage of fuel or other hazardous materials also shall be prohibited in Compatibility Zones B1 and B2.

Policy 4.2.5 In the event that a light aircraft is forced to land away from an airport, the risks to the people on board can best be minimized by providing as much open land area as possible within the airport vicinity. This concept is based upon the fact that the majority of light aircraft accidents and incidents occurring away from an airport runway are controlled emergency landings in which the pilot has reasonable opportunity to select the landing site.

a) To qualify as open land, an area must be:

   1) Free of structures and other major obstacles such as walls, large trees or poles, and overhead wires.

   2) Have minimum dimensions of at least 75 feet by 300 feet.

b) Roads and automobile parking lots are acceptable as open land areas if they meet the above criteria.

Policy 4.3.2 The height of objects within the influence area of each airport shall be reviewed, and restricted if necessary, according to the following criteria. The locations of these zones are depicted on the respective Compatibility Map for each airport.

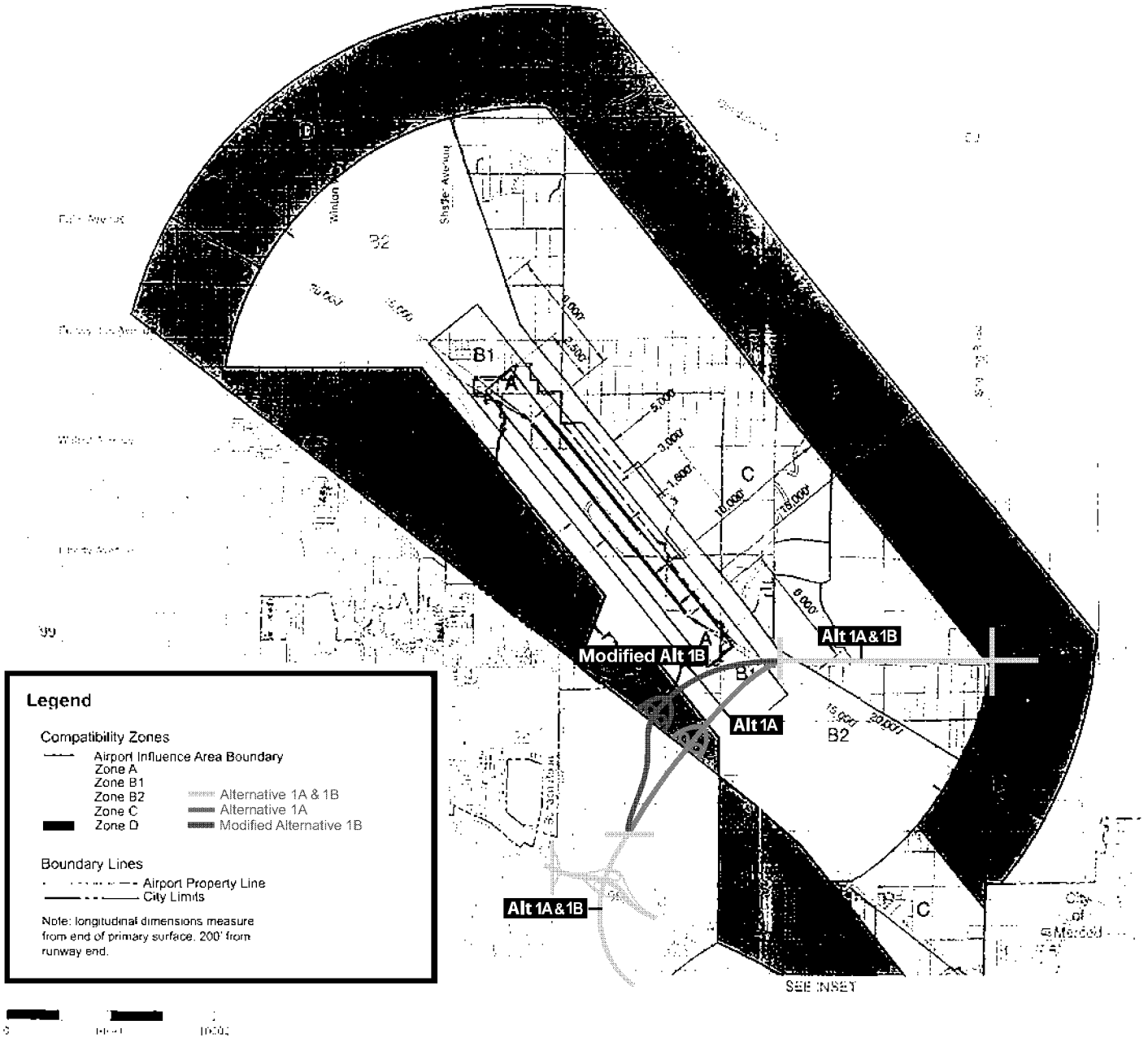
a) Within Compatibility Zone B1.

b) Objects up to 35 feet tall are acceptable and do not require ALUC review for the purposes of height factors:

   1) ALUC review is required for any proposed object taller than 35 feet.

c) Within Compatibility Zone B2 or C:

   1) Generally, there is no concern with regard to any object up to 70 feet tall unless it is located on high ground or it is a solitary object (e.g. an antenna) more than 35 feet taller than other nearby objects.



ATWATER-MERCED EXPRESSWAY

Airport Compatibility Zones

REVISED FIGURE 4.10-2

Source: Merced County Airport Land Use Plan, April 1999.

2) Based upon user requests/requirements Castle Airport has the intent to upgrade the Instrument Landing System (ILS) from a Category I to either a Category II or III. Consideration must be given for this eventuality by reviewing the FAA site survey and perhaps initiating a more specific survey of the location.

d) Within Compatibility Zone D:

1) Generally, there is no concern with regard to any object up to 150 feet tall unless it is located on high ground or it is a solitary object (e.g. an antenna) more than 35 feet above the ground.

Policy 4.3.5 Land uses which may cause visual, electronic, or bird strike hazards to aircraft in flight shall not be permitted within any airport's influence area. Specific characteristics to be avoided include:

1) Glare or distracting lights which could be mistaken for airport lights;

2) Sources of dust, steam, or smoke which may impair pilot visibility;

3) Sources of electrical interference with aircraft communications or navigations; and

4) Any use, especially landfills and certain agricultural uses, which may attract large flocks of birds.

CITY OF ATWATER GENERAL PLAN

The City of Atwater General Plan includes a Safety Element that addresses issues of public health and safety. The goals and policies from this element apply to the project are listed below.

GOAL SF-8: Avoid new incompatible development within established Airport Safety Zones.

Policy SF-8.1 Ensure that land use development in the area surrounding Castle Airport is consistent with the applicable provisions of the Merced County Airport Land Use Compatibility Plan.

GOAL SF-9: Prevent potential contamination and hazards resulting from the inappropriate storage, transport, and handling of hazardous materials.

Policy SF-9.1 Require new development projects which produce, store, utilize, or dispose of significant amounts of hazardous materials or waste to incorporate appropriate state-of-the-art project designs and building materials to protect employees and adjacent land uses.

Policy SF-9.2 Promote the routing of vehicles carrying potentially hazardous materials along transportation corridors that reduce the risk of exposure to the public and sensitive environmental areas.

Policy SF-9.3 Encourage continued monitoring of hazardous material cleanup at the Castle Airport Aviation and Development Center (CAADC) site, and monitoring of hazardous material use or storage at the site.

GOAL SF-12: Provide for the orderly evacuation of residents in the event of a disaster.

Policy SF-12.1 Pursue the development of more access routes to and from the CAADC site.

4.10.3 POLICY CONSISTENCY ANALYSIS

The AME project would be consistent with the federal and state laws related to hazardous materials. These laws also provide for the safe handling and, if necessary, removal of hazardous materials that could effect construction workers that came into contact with hazardous substances such as lead, asbestos, and ground contaminants.

As required by law, the project would be designed to abide by safety requirements of the Merced County Airport Land Use Compatibility Plan and therefore would not create new hazards related to air travel. As a result, the project would be compatible with the Merced County General Plan Land Use Element.

In accordance with applicable Federal Aviation Administration criteria including FAR Part 77, TERPS, and/or airport design standards, the project is within an Airport Compatibility Zone and would be limited in height. The AME project would generally be constructed at surface level or ~~slightly~~ **elevated** above surface at the grade separated interchanges. Overhead lighting fixtures located along the off-ramps from the AME to SR 99 and Santa Fe Drive would be approximately 36 to 40 feet in height. This height information has been incorporated into an Instrument Landing Feasibility Report, prepared by the Merced County Airport. As documented in this feasibility report, all project structures will need to meet requirements held by the Federal Aviation Administration. As required by Merced County Airport Land Use Compatibility Plan Policy 4.3.2, all structures over height limits will need to be approved by the Merced County Airport Land Use Commission.

Consistency with policies relevant to airport hazards from new sources of light and glare and the storage of hazardous materials is discussed under Impact HAZ-6.

The project would also be in compliance with the Safety Element of the City of Atwater General Plan. The project **may** ~~would~~ create a new road to the **Castle Commerce Center** ~~former Castle Air Force Base~~, which is in compliance with Goal SF-12, and Policy SF-12.1. Construction of the project may involve the use of hazardous materials. Such use would be subject to Goal SF-9 and Policy SF-9.1, SF-9.2, and SF-9.3. As previously discussed, the project would be consistent with the Merced County Airport Land Use Compatibility Plan and therefore consistent with Goal SF-8 and Policy SF-8.1.

4.10.4 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. The project would have a significant aesthetics impact if it would:

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

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

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

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

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

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less Than Significant Impacts

The project would not be impacted by ground contamination from a Federal Superfund Site.

Modified Alternative 1B passes through the Former Castle Air Force Base, a Federal Superfund site. A number of remediation systems have been installed on the site and groundwater cleanup is ongoing. Review of the reports for the Former Castle Air Force Base indicates that the area of the encroachment has been investigated by the Air Force, under the oversight of EPA, DTSC, and RWQCB, and no further action has been recommended for this area. ~~Therefore, soil contamination, and any associated hazards, is not anticipated.~~

The project would not conflict with an Emergency Response or Emergency Evacuation Plan

The proposed project would not conflict with the Merced County Emergency Response Plan, Chapter 7 of Title 2 of the Government Code, or the Emergency Services Act. The project proposed adding new access and interchanges that would enhance overall circulation and emergency response in the area. See **Section 4.5, Traffic and Transportation**, and **Section 4.14, Public Services**, for more information on effects to emergency services related to access changes during construction and after project completion.

The project would not result in exposure to wildland fires.

The project study area consists mostly of agricultural land and is not located in an area susceptible to wildland fires. According to the Merced County General Plan Safety Element, the grazing areas in the County are more susceptible to wildland fires than irrigated agricultural land. The project is not located in the Merced County General Plan Safety Element's very high fire severity zone. Due to the location of the project, exposure to wildland fires that would result from development of the project is considered less than significant.

The project is not located on a site that is listed on the Cortese list of hazardous sites.

The project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (the Cortese List). Therefore, the project would not create a safety hazard to the people residing or working in the project area resulting from a Cortese site.

The project would not result in the handling of hazardous materials near a school

Construction of the AME project would introduce an expressway on which hazardous materials could potentially be transported. If an accident were to occur on the expressway, hazardous materials could be released into the environment and potentially create health hazards to the pubic. ~~Alternative 1B is within one-quarter mile of a planned Atwater Elementary School District school site and potential accident-related spills could affect students and employees associated with the future elementary school.~~

Title 49, Parts 171-180, of the Code of Federal Regulations establishes standards by which hazardous materials must be transported. These regulations are mandatory for vehicles transporting hazardous waste,~~.~~ ~~They~~ **and** are stringent enough to ~~eliminate~~ **reduce** any impacts associated with accidental release to a less than significant level.

Alternative 1A and Modified Alternative 1B would be located approximately 400 feet away at its closest point to the Atwater Elementary School District's (AESD) planned Avenue One school site. The Merced County Fire Department has in place a Hazardous Materials Response team with members trained to the Specialist and Technician level. The team responds, as requested, with a Hazardous Materials Response vehicle that is equipped to the State of California Office of Emergency Services level II. The Merced County Fire Department (MCFD) has reviewed plans for both Alternative 1A and Modified Alternative 1B and determined that the fire department has the necessary emergency procedures and protocols in place to address a potential accidental release of hazardous materials if it were to occur on the expressway near the Avenue One school site such that

the potential health risks to the general public, including school students, teachers, and staff would be reduced to a less than significant level [17].

Significant Impacts

Impact HAZ-1: Construction of the project would require demolition of structures that may contain hazardous substances such as lead and asbestos. These substances would potentially threaten workers if not properly handled.

There is a potential that lead paint and asbestos are present in existing bridge structures, buildings, and other structures in the project area that would be removed or replaced with development of the project. Buildings built prior to 1982 most likely contain both asbestos and lead based paint. During demolition of these structures, construction workers may be exposed to asbestos and/or lead paint, which could result in a significant health hazard.

Section 19827.5 of the California Health and Safety Code requires that local agencies not issue demolition or alteration permits until the MCAG or its assignee has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. Therefore, the following mitigation measure will ensure compliance with the safety code and will reduce impacts from lead and asbestos to a less-than-significant level.

Mitigation Measure HAZ-1a:

Once a final project alignment is selected, and well before permits to construct are issued, a Phase II testing report shall be completed. The Phase II shall be completed by a qualified hazards specialist as approved by the MCAG. The Phase II shall include, but not be limited to, surveys for asbestos and lead in buildings to be demolished, a work plan for demolition, and soil sampling to determine the amount and type of herbicides and pesticides in the soil from past agricultural uses in the project study area. Phase II study shall include soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and the location and contents of USTs in the project study area to the extent feasible. Soils along the railroad right of way shall be tested for heavy metals, TPH, and PAHs. Tests to be included in the Phase II study are described in Mitigation Measures HAZ-2 to HAZ-6

Mitigation Measure HAZ-1b:

As part of the Phase II study, buildings and structures to be demolished shall be surveyed by a certified asbestos surveyor and tested for lead by an AHERA Accredited Building Inspector. A work plan for demolition will be developed and included in the Phase II report.

The recommendations of the Phase II study shall be incorporated into final project plans. Asbestos shall be removed and stored off-site prior to building/structure demolition by experts qualified to

[17] Martin, Mikel, Fire Chief, Merced County Fire Department. Letter to the Atwater Elementary School District regarding the risks of a release of hazardous materials near the Avenue One school site, September 16, 2008.

identify and remove asbestos. Similarly, Lead based paint will be appropriately contained off-site during the demolition process. Demolition shall comply with the California Department of Occupational Safety and Health (CAL/ OSHA) requirements regarding asbestos and lead paint removal. Asbestos is to be removed from the site and properly disposed of prior to, and as a condition of, the issuing a permit for site demolition.

Significance After Mitigation: Less than Significant

Impact HAZ-2: Grading and earthmoving activities could expose the public or construction workers to heavy metals in the soil from nearby railroad operations.

The project would cross the BNSF and UPRR railroad tracks. Soils below or adjacent to the tracks may be impacted from historical operations with heavy metals due to possible presence of slag ballast and total petroleum hydrocarbons as motor oil, diesel, and polynuclear aromatic hydrocarbons. Areas requiring soil testing for heavy metals TPH and PAHs have been identified.

Mitigation Measure HAZ-2:

In the event the construction involves installation of footings within the railroad right of way, soils along the railroad right of way shall be tested as part of the Phase II study mentioned in Mitigation Measure HAZ-1 for heavy metals, TPH, and PAHs. This study will be performed once an alignment is selected for the project and prior to the issuance of permits to construct any portion of the project near the railroad lines. The number of borings and test methods shall be documented in a work plan for the Phase II study.

Remediation for these substances shall depend on the contaminant nature, level, and estimated volume of soil contamination. Impacted soils may be capped under the road, treated onsite biologically or via stabilization, or sent offsite to an approved landfill. Remediation measures shall be approved by the MCAG prior to issuance of the permit to construct.

Significance After Mitigation: Less than Significant

Impact HAZ-3: Grading and earthmoving activities may disturb soils that are potentially contaminated by known or unknown leaking USTs associated with farms in the project study area. Furthermore, if USTs under the project were to be abandoned, they could leak hazardous substances and create risks to human health and the environment over time.

As shown in **Table 4.10-1**, existing farms in the project study area and the alignment are known to have active USTs. Typically, farms do not have UST monitoring equipment and leaks could occur without being identified. Therefore, USTs in the project area may have undetected leaks that have contaminated the soil. Furthermore, if USTs exist in the ROW they may need to be removed prior to construction to prevent future leaks from abandonment.

Due to the age and history of agricultural activities, it is also likely that some USTs may not be located until the project is underway. Previously unidentified USTs may be found during soil excavations associated with road placement.

Mitigation Measure HAZ-3:

Underground storage tanks in the project study area shall be identified during the Phase II study and removed or otherwise mitigated. USTs shall be identified by a trained environmental professional through visual observation during a site visit, in interviews with the property owners, and during review of records at the City of Atwater and or Merced County Health Department.

The project engineer shall retain an environmental consultant experienced with UST removal to prepare a plan that addresses proper removal and remediation of USTs and any adjacent contaminated soils that are identified within the proposed right-of-way. The remediation plan shall also provide a strategy for addressing any USTs presently unlisted or otherwise not identified during the Phase II, but that are found during project construction phases. This plan shall be approved by the Merced County or City of Atwater Health Departments, as applicable, prior to issuance of a grading permit. In all cases, any USTs found within the proposed right-of-way shall be safely removed and properly disposed of prior to final grading for the construction of the roadway.

Significance After Mitigation: Less than Significant

Impact HAZ-4: Abandoned automobiles and farm equipment may have deposited substances such as TPH, BTEX, MTBE, oil, grease, associated PAHs, and lead into the soil. Abandoned farm equipment may have also leaked pesticides (including arsenic) and herbicides into the soil. Soil contaminants from abandoned automobiles and farm equipment may be present at high enough levels such that during grading and earthmoving activities disruption of the soil would pose a health risk to construction workers and the public.

The majority of the project study area is agricultural. During the site visit several instances of abandoned automobiles and abandoned and stored farm equipment were observed. Abandoned automobiles and farm equipment have the potential to leak substances such as TPH, BTEX, MTBE, oil, grease, PAHs, lead, pesticides, herbicides, and arsenic into the soil. It is possible that these substances are present in amounts that exceed the State of California acceptable levels. If potentially harmful levels of pesticides and/or herbicides are present, grading and earthmoving activities could expose the public or construction workers to contaminated soil.

Mitigation Measure HAZ-4:

The Phase II study shall conduct soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and remediate any concentrations of hazardous materials appropriately. During the Phase II study the selected alternative shall be superimposed (with the limits of the selected right of way) on the property map to identify and expand upon areas of potential concern. A sampling plan shall be prepared and shall be approved by the Merced County or City of Atwater Health Departments, as applicable. The sampling plan shall include soil sampling around abandoned cars and farm equipment and in agricultural areas to determine the types and levels of contaminants present (if any). Once the sampling plan is approved, soil investigation will be conducted to determine specific impacts to the soil and groundwater, and mitigation measures. Results shall be included in the Phase II study. Recommendations of this study shall be

implemented prior to issuance of the permit to construct. State oversight and regulatory approval of cleanup shall occur as necessary.

Recommendations based on soil sampling shall be developed and incorporated into future plans. Measures may include the removal and offsite disposal of farm equipment, excavation and offsite disposal of impacted soil, and/or onsite capping of contaminated soil underneath the selected route.

Significance After Mitigation: Less than Significant

Impact HAZ-5: Grading and earthmoving activities could expose the public or construction workers to hazardous substances in the soil deposited during agricultural processes.

The dominant land use within the study area agriculture; it is likely that the soils are impacted with pesticides and herbicides as a result of historical and current farming operations. Due to the project study area's history of agricultural use, it is assumed that pesticides and herbicides have been applied to the soil. The amount and type of residue present is unknown at this time since soil testing has not been completed. It is possible that pesticide and herbicide residue levels are above State of California background levels. If potentially harmful levels of pesticides and/or herbicides are present, grading and earthmoving activities could expose the public or construction workers to contaminated soil that is hazardous to their health.

Mitigation Measure HAZ-5:

See Mitigation Measure HAZ-4 and HAZ-1A. The sampling plan shall also address the level of pesticides and herbicides in the soil from previous agricultural applications.

Significance After Mitigation: Less than Significant

AIRPORT-RELATED HAZARDS

Impact HAZ-6: Lighting associated with the project and the storage of hazardous materials during construction could create a safety hazard to the flight school operating at the former Castle Air Force Base since a portion of the project is within several airport compatibility zones.

As discussed in the policy consistency analysis of this section, a portion of the project is within the Merced County Airport Land Use Compatibility Plan. This plan identifies compatibility zones for Castle Airport and includes policies for activities within these zones that minimize potential aircraft related hazards. Policies 4.2.4 and 4.3.5 of the Merced County Airport Land Use Compatibility Plan regulate hazardous material storage and lighting use respectively.

As discussed **Section 4.4, Visual Resources**, the majority of existing lighting within the project area is limited to natural sources, nearby residential and commercial buildings, and vehicle traffic lighting along the existing roadways. Project construction and operation would introduce new sources of light and glare to the project area, creating new nighttime sources of light near the flight school operating at the former Castle Air Force Base. New sources of light within the airport compatibility zones may make it difficult for pilots to identify the airport runway thereby creating a safety hazard.

Temporary construction lighting, such as overhead fluorescent light fixtures and construction machinery lighting would create sources of light not previously located within the project area. New sources of light associated with the operational phase of the project would be created from vehicle lights using the expressway and from street lighting fixtures. Overhead street lighting fixtures would be located on selected AME off-ramps. The lighting fixtures would be in accordance with Caltrans standard overhead lighting, at approximately 36 to 40 feet in height and could create a physical hazard to pilots taking off and landing planes. These sources of lighting may also affect pilots looking for the landing area during the night. The impacts from new sources of light and the height of lighting structures related to airport hazards could be reduced to less than significant with proper mitigation measures (see below).

Aircraft related hazards can also occur from the storage of fuel or other hazardous materials. During construction, the project may use and store hazardous materials within an airport compatibility zone. Aboveground storage of flammable or hazardous materials near an airport runway could create a safety concern if an aircraft were to come in contact with these materials during an emergency landing. Mitigation Measures HAZ-6A through HAZ-6C below would mitigate this impact to a less than significant level.

Mitigation Measure HAZ-6a:

The project sponsor shall prepare a lighting plan to minimize construction and operational lighting such that it does not interfere with aircraft using the runway at the former Castle Air Force Base. Prior to issuance of a permit to construct the lighting plan shall be approved by the MCAG and the CAED and determined to be consistent with Merced County Airport Land Use Compatibility Plan Policy 4.3.5, which does not allow lighting that would distract aircraft from the runway and create landing hazards.

Mitigation Measure HAZ-6b:

As required by the Merced County Airport Land Use Compatibility Plan Policy 4.3.2, structures within Compatibility Zone B1 above 35 feet tall require Airport Land Use Commission review.

Mitigation Measure HAZ-6c:

As required by the Merced County Airport Land Use Compatibility Plan Policy 4.2.4, except for aviation fuel, other aviation-related flammable materials and up to 2,000 gallons of nonaviation flammable materials, the aboveground storage of fuel or hazardous materials shall not occur in airport compatibility zones B1 and B2.

Significance After Mitigation: Less than Significant

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4.11 BIOLOGICAL RESOURCES AND WETLANDS

INTRODUCTION

This section provides an analysis of the potential impacts of the Atwater-Merced Expressway Project on biological resources in the project study area. Information presented in this section in summarized from a biological resources analysis prepared by Monk & Associates in October of 2007. The biological resource analysis included: background research of databases that document sightings of special-status species; field assessments to the accessible portions of the project area; a preliminary wetland delineation conducted in the project area; and biological protocol surveys for sensitive species. This section provides information on the regulatory setting including relevant state and federal resource agency requirements, and discusses the project consistency with these regulations. Potential impacts to biological resources, including wetland areas, are discussed and mitigation measures are provided for any identified **potentially** significant impacts.

4.11.1 ANALYSIS METHODOLOGY

Background Research

The evaluation of biological resources in the project area began with research of the CDFG's *Natural Diversity Database, RareFind 3.1 application* (CNDDB 2007) for historic and recent records of special-status plant and animal species (that is, threatened, endangered, rare) known to occur in the vicinity of the project. The California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants of California* (CNPS 2001) was also searched for records of rare plants known in the vicinity of the project area.

Site Reconnaissance and Habitat Mapping

Surveys of the project area were conducted in January of 2006 to evaluate biological resources within the project area and included mapping of all habitats within the project area and recording plant and wildlife species observed. The purpose of this mapping was to determine the extent of habitats that could be occupied by special-status plants and wildlife species, and the potential presence of waters of the United States, which includes wetlands, within the project area.

Special-Status Plant Surveys

Special-status plant surveys were conducted followed CDFG (2000) and CNPS (2001) published survey guidelines. Surveys were conducted on March 21-23, May 9-11, and July 18-19, 2006; and on March 14, 2007, during the months when special-status plant species from the region are known to be evident and flowering. All areas within the proposed project area were examined by walking transects through potential habitat, and by closely examining any existing microhabitats that could potentially support special-status plants.

Nearly all plant species found within the project area were identified to species and all were identified to the level needed to determine whether they qualify as special-status plants in accordance with the survey

guidelines. A list of all vascular plant taxa encountered within the project area was recorded in the field. Plants that needed further evaluation were collected and keyed in the lab. Final determinations for collected plants were made by keying specimens using standard references such as *The Jepson Manual* (Hickman 1993).

General Wildlife Surveys

Wildlife surveys were conducted in March, April, May, July, September and October of 2006 and in April and May of 2007 to document existing conditions, observe wildlife, check for nesting raptors, and to map wildlife habitats. Visual sweeps using binoculars, walking transects, and other methodologies for field assessments of the project area were systematically employed to conduct the wildlife surveys.

Wetland Delineation

A wetland delineation of the project area including alignment alternatives 1A and 1B was conducted in March, April and May of 2006. The wetland delineation was conducted according to the U.S. Army Corps of Engineers' 1987 *Wetlands Delineation Manual*[2]. Vegetation, hydrology, and soils information were recorded on data sheets. Once the final alignment of the proposed expressway is determined, the map will be finalized and submitted to the Corps for verification.

Protocol Surveys

Protocol surveys were performed to examine the occurrence of biological resources within the project study area. The surveys are used as a tool to determine if the area supports rare, threatened or endangered species that might be impacted by the proposed AME. Surveys were conducted for several federally listed species including vernal pool fairy shrimp, California tiger salamander, and San Joaquin kit fox, as discussed below.

VERNAL POOL FAIRY SHRIMP

In accordance with the USFWS' fairy shrimp Interim Survey Guidelines (USFWS 1996), ~~surveys for~~ **protocol** wet and dry season surveys of potential special-status vernal pool crustacean habitats were conducted in 2006-2007. The USFWS granted permission to conduct these surveys in September of 2006.

Dry Season Sampling

Field Methods

Ten soils samples were collected from each of 41 potential special-status shrimp habitats within the proposed project area and taken to a laboratory for analysis. Many of the habitats originally identified were not dry sampled due to the presence of perennial hydrophytic vegetation (such as cattails (Typha sp.)), or moist soil which makes conditions unsuitable for collecting Branchiopod (fairy shrimp) cysts.

[2] The delineation was conducted prior to the release of the recently approved regional supplement for the Arid West Region (U.S. Army Corps of Engineers 2006), and the guidance following the Rapanos decision.

Laboratory Analysis

Soil samples were examined under a microscope to determine the presence of special-status shrimp cysts (eggs). Scanning electron micrographs and reference specimens were used to identify any shrimp cysts to the lowest justifiable taxon.

Dry eggs were placed in a hatching chamber and reared using methods following U.S. Environmental Protection Agency (1985), Belk, et al. (1990), Maeda-Martinez, et al., (1995a and 1995b), and Jawahar and Dumont (1995). Nauplii (newly hatched shrimp) were then reared to maturity. Adult shrimp reared from culture were then examined under a stereo dissection microscope to determine if the specimens were federally listed shrimp species. Identifications were made based upon comparisons with specimens in the laboratory's collections, the original species descriptions and professional experience.

Wet season sampling

Field Methods

Wet season surveys began on December 22, 2006 but ended on January 2, 2007 when because of inconsistent rainfall, all potential habitats were no longer inundated. Surveys were reinitiated on March 1, 2007 when pools refilled and ended on March 16, 2007. Potential special-status shrimp habitats along Bellevue Road were not wet sampled due to the fact that the potential habitats never held standing water in 2007.

The USFWS considers the vernal pool protocol survey effort invalid owing to drought-like conditions in the winter of 2006/07. Therefore, technically the protocol survey cannot be used to demonstrate absence of vernal pool tadpole shrimp in the project area. Accordingly, the USFWS still regards portions of the project area to be suitable habitat for vernal pool tadpole shrimp.

CALIFORNIA TIGER SALAMANDER

The project area provides suitable upland aestivation (over-summering) habitat for the California tiger salamander, and seasonal wetlands, ponds, detention basins, and vernal pools within the project area provide potential breeding habitat.

Spring Larval Surveys

Authorization to conduct larval surveys was received from the USFWS in April of 2006. Larval surveys were conducted following the joint USFWS and CDFG protocol: *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (October 2003). Funnel traps were used in deep water pond habitats, in combination with dip-netting wherever possible. Visual surveys were also conducted to detect egg masses. Due to late approval granted by the USFWS for the first larval survey, which was granted on April 4, 2006, larval surveys were performed on April 11-13, May 2-4, and May 17-19, 2006. Aquatic conditions were unsuitable for amphibian larvae by June of 2006 and surveys were halted. Larval surveys for the second year were not conducted due to lack of inundation in the potential breeding habitats.

Winter Drift Fence Survey

A request was submitted to the USFWS in August of 2006 that proposed a survey plan whereby California tiger salamander drift fence/pit fall trapping only be placed around potential breeding habitats (ponds, large pools, and detention basins), and not around all seasonal wetlands that otherwise do not provide suitable breeding conditions within the project area. Permission to conduct protocol winter surveys in accordance of this plan was received in September of 2006.

The winter field survey was conducted around potential breeding habitats (ponds, large pools, and detention basins) within the project area following guidelines prescribed in the USFWS' October 2003 *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander.* The protocol requires the use of drift fencing in combination with pitfall traps as a means of determining the presence of California tiger salamander. Drift fences were installed by October 15, 2006 prior to the onset of seasonal rains. Trapping was completed on March 15, 2007.

The USFWS considers the CTS protocol survey effort invalid owing to drought-like conditions in the winter of 2006/07. Therefore, technically the protocol survey cannot be used to demonstrate absence of CTS in the project area. Accordingly, the USFWS still regards portions of the project area to be suitable habitat for CTS. A series of meetings and communications with the USFWS ~~has been~~ **were** held to determine areas of potential impact and to discuss impact minimization features that can be incorporated into the project design. The final determination of mitigation ~~areas and~~ ratios will be determined in future communications with USFWS ~~and will be included in the Final EIR for the AME project~~.

SAN JOAQUIN KIT FOX

A protocol survey for San Joaquin kit fox was conducted within the project area in accordance with the methodology prescribed in USFWS *San Joaquin Kit Fox Survey Protocol for the Northern Range* (June 1999).

The survey included systematic walking surveys which were conducted throughout the project area in late September through early October 2006 looking for any evidence of kit fox, including potential dens, scat, or tracks. Distances between transects averaged 30 to 100 feet depending on vegetation and other visual obstructions. During den surveys, potential canid (fox) dens were mapped for subsequent assessment. Den status was later assessed using tracking medium and infra-red triggered cameras. In addition, twelve camera stations and twelve scent/track stations were installed in early October 2006. Camera and scent/track stations were maintained for eleven consecutive days/nights. Camera and scent/track stations were checked daily to record all tracks, exchange the camera memory chip, and re-bait the stations as necessary. Ten nights of spotlight surveys were also conducted within a 15-day period (October 16-October 30, 2006). Spotlighting transects extended into the surrounding area to encompass a 2-mile radius area around the immediate project area. Areas surveyed were along publicly accessible roads and the routes were varied for each session. All animals sighted during surveys were recorded in a project notebook, along with the number of animals observed by species. Each canid observed in the project area was noted on a map of the project area.

LIMITATIONS OF THE PROTOCOL SURVEYS

Much of the project area is located on private property. Requests for access to conduct biological surveys were sent to all property areas within the project area. However, not all property owners gave permission to

access their property and as a result, approximately five percent of all properties within the project area were not surveyed. Once the final alignment for the proposed expressway project has been determined, those parcels within the alignment that have not been studied will need to be examined to determine if these properties support biological resources or waters of the United States/State that would be impacted by the proposed project. The remaining properties within the project area were fully accessible, and owing to the continual and high degree of disturbance in the project area in general, seasonal variation would not be expected to matter with respect to this analysis.

4.11.2 ENVIRONMENTAL SETTING

Plant Communities and Associated Wildlife Habitats in Project Area

Land uses within the project area are almost entirely agricultural. Older single-family homes and ranchettes associated with crop fields and irrigated pastures with livestock cover most of the project area. Five of the biological communities found in the project area are the direct result of human intervention: agrestal (cropland) communities, orchards, ruderal (weedy), eucalyptus groves, and irrigated pasture. Consequently, the majority of habitats within the project area are highly manipulated and disturbed, providing habitat value only to common wildlife species that are adapted to living in association with man. The remaining aquatic communities such as canals, ponds, detention basins, creeks, irrigation ditches, seasonal wetlands and vernal pools, are relegated to discrete areas that are surrounded by highly disturbed, man-manipulated conditions. These habitats support some native plant and wildlife species. Habitats found within the project area are described below. Each of the major biological communities found within the project area are described below. Each of the major habitat communities found within the project area are show in **Figure 4.11-1** and described below.

Agrestal (Croplands)

The existing vegetation over most of the project area is classified as agrestal (Holland & Keil 1995) and is the result of long-term ground manipulation and cultivation. Plants introduced by man, generally for agricultural commodity crops, dominate these communities. The cultivation of agricultural fields continually disturbs the soil. As a result these areas typically do not support native plant species or communities. At the time of the 2006-2007 plant surveys, the primary crops grown within the project area were those that are typically harvested for hay crops, including oats and alfalfa. Hay crops are often rotated into corn during the summer months, thus these fields require regular ground disturbance for both cultivation (disking activities) and harvesting practices. Permanent crop fields within the project area include strawberries and other row crops.

In general, agrestal areas do not provide habitat for many wildlife species. Most farms are "clean farmed" meaning that no naturalized habitats remain outside of intended crop species. The intense cultivation and manipulation of the soil, including the application of pesticide, herbicide, and fertilizer tend to limit the number of species that occupy or use cropland habitats. Nevertheless, hay fields can provide habitat for a number of resident species, particularly small mammal populations, including California meadow vole (*Microtus californicus*), western harvest mice (*Reithrodontomys megalotis*), deer mice (*Peromyscus maniculatus*), and California ground squirrels (*Spermophilus beechyi*). These rodents in turn serve as prey for various raptors,

including red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), and red-shouldered hawk (*Buteo lineatus*), all of which have been observed in the project area.

Migratory bird species also use agrestal communities, particularly in the winter months after crops are harvested. Waterfowl and shorebirds often alight in agricultural fields in the winter months en route to and from nesting grounds. Flooded conditions provide foraging opportunities for shore birds that probe for invertebrates in the substrate. Common waterfowl species such as mallards (*Anas platyrhynchos*), snow geese (*Chen caerulescens*), and Canada geese (*Branta canadensis*) often feed on leftover crops that are incidentally discarded during and after harvesting. Other birds such as the long-billed curlew (*Numenius americanus*) and the white-faced ibis (*Plegadis chihi*) also take advantage of cut over hay fields to forage for invertebrates in these fields while migrating through the area.

Orchards

Orchards have been widely planted in the project area. Orchards are classified in vegetation community texts as "plantations" (Holland & Keil 1995). Management of the land on which these trees are growing ranges from regular cultivation of the soil or mowing of the herbaceous understory to little or no disturbance. Depending upon the nature and intensity of the disturbance associated with management of the plantation, variable assemblages of non-native or native species may grow under and between the trees.

The primary nut and fruit crops cultivated in the project area include walnuts (*Juglans californica hindsii*) and almonds (*Prunus dulcis*). In general, the orchards in the project area are well-maintained with minimal understory vegetation present during the 2006 and 2007 plant surveys. Although sparse from mowing and harvesting activities, the understory plant community was composed primarily of non-native grasses and forbs such as annual bluegrass (*Poa annua*), mouse-ear chickweed (*Cerastium glomeratum*), pineapple weed (*Chamomilla suaveolens*), white-stem filaree (*Erodium moschatum*) and cheeseweed (*Malva parviflora*).

Orchard habitats do not provide conditions that support a wide diversity of wildlife species. The intense cultivation and manipulation, including herbicide/pesticide applications, tends to limit the number of species that can occupy or use this habitat. The orchards in the project area attract bird species such as the American crow (*Corvus brachyrhynchos*) and yellow-billed magpie (*Pica nuttalli*). Other birds on occasion forage in orchards including barn owl (*Tyto alba*), Cooper's hawk (*Accipiter cooperii*), rock dove (*Columba livia*), mourning dove (*Zenaida macroura*), western scrub jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*) and Brewer's blackbird (*Euphagus cyanocephalus*). Other wildlife species known to commonly utilize orchards in the project area include striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis virginiana*), black-tailed hare (*Lepus californicus*), California ground squirrel, Botta's pocket gopher (*Thomomys bottae*), and black rat (*Rattus rattus*). It should be noted that barn owl nest boxes were installed throughout the orchards to limit rodent populations. Black rat skulls, among other rodents, were observed in the pellets below these nest boxes.



ATWATER-MERCED EXPRESSWAY

Habitats Within Project Study Area

REVISED FIGURE 4.11-1

Source: Monk and Associates, 2008.

Ruderal

Ruderal habitat consists of plant species adapted to continuous disturbance (Holland and Keil 1995) and many of the plant species are non-native species. Within the project area this habitat occurs along roads, in fallow fields, and in areas adjacent to cultivated fields. It also occurs along maintained levees and the top-of-banks of the irrigation ditches. Common ruderal species include bindweed (*Convolvulus arvensis*), prickly lettuce (*Lactuca serriola*), horseweed (*Conyza canadensis*), milk thistle (*Silybum marianum*), yellow star-thistle (*Centaurea solstitialis*), common chickweed (*Stellaria media*), Russian thistle (*Salsola tragus*), filarees (*Erodium* spp.); mustards, including black mustard (*Brassica nigra*), field mustard (*Brassica rapa*), wild radish (*Raphanus sativus*), short-podded mustard (*Hirschfeldia incana*), and charlock (*Sinapis arvensis*); and non-native grasses, including ripgut grass (*Bromus diandrus*), Italian ryegrass (*Lolium multiflorum*), wild oat (*Avena fatua*), and foxtail barley (*Hordeum murinum* ssp. *leporinum*). Several gourd crop species, including watermelon *(Citrullus colocynthis* var. *lanatus*) and calabazilla (*Cucurbita foetidissima*) have naturalized in the project area and are found in fallow fields and along roadsides.

In an agricultural setting, ruderal habitats are often physically removed or sprayed with herbicides that kill undesirable plant growth. This severely limits or discourages use of these habitats by wildlife. Where ruderal habitats are left undisturbed, they can provide a varied food source for rodents and birds. Typical mammals include Botta's pocket gopher, California meadow vole, and California ground squirrel. The ruderal habitat along levees and the compacted surface of the roads provides basking sites for western fence lizard (*Sceloporus occidentalis*) and other reptile species. Black-tailed hare and Audubon's cottontail (*Sylvilagus audubonii*) also feed and shelter in isolated pockets of ruderal habitat. Western meadowlark (*Sturnella neglecta*) commonly occurs in open areas around the fields. Northern harriers (*Circus cyaneus*) forage over open ruderal habitats within the project area.

Eucalyptus Groves

Various species of eucalyptus (*Eucalyptus* spp.) trees have been planted in California for windbreaks, wood, pulp, and other uses. These areas also constitute a plantation community (Holland and Keil 1995) and are usually composed of a single species of eucalyptus tree in a very dense planting. Groves of forest red gum (*Eucalyptus tereticornis*) are scattered throughout the project area, in residential areas and along roadsides. Forest red gum trees tower over all plant species native to the area. The trees shade the ground and litter the soil surface with fallen branches, leaves, fruits, and bark. Rainwater passing through the leaves and branches carry dissolved chemicals that add to the substances leached from the fallen litter producing a significant allelopathic (growth inhibiting) effect on understory vegetation. The net result is that very few other plant species are able to grow around or under Eucalyptus trees. Consequently, the understory is often sparse if present at all. Thus, in areas where forest red gum trees have been planted, they have almost completely replaced the native vegetation (Holland and Keil 1995).

The eucalyptus groves within the project area provide nesting habitat for raptors such as the red-tailed hawk, red shouldered hawk, Swainson's hawk, barn owl, and great-horned owl (*Bubo virginianus*). These trees also provide nesting and roosting opportunities for passerine birds (perching birds) such as the mourning dove, dark-eyed junco (*Junco hyemalis*), loggerhead shrike (*Lanius ludovicianus*), and oak titmouse (*Baeolophus inornatus*), and foraging opportunities for a variety of passerine birds such as dark-eyed junco, yellow-rumped warbler (*Dendroica coronata*), various species of sparrow, and lesser goldfinch (*Carduelis psaltria*).

Irrigated Pastures

Irrigated pastures are fields that receive supplemental irrigation during the dry season to maintain green vegetation for livestock fodder. In the project area, irrigated pastures support a mosaic of seasonal wetland and ruderal grassland vegetation. Common seasonal wetland species found in irrigated pastures include common rush (*Juncus patens*), tall flatsedge (*Cyperus eragrostis*), creeping spikerush (*Eleocharis macrostachya*), slender trefoil (*Lotus formosissimus*), spiny-fruited buttercup (*Ranunculus muricatus*), cursed buttercup (*Ranunculus sceleratus*), curly dock (*Rumex crispus*), annual saltmarsh aster (*Symphyotrichum divaricatum*; formerly known as *Aster subulatus* var. *ligulatus*), joint paspalum (*Paspalum distichum*), Harding grass (*Phalaris aquatica*), Johnsongrass (*Sorghum halepense*), annual bluegrass, annual beardgrass (*Polypogon monspeliensis*), Bermuda grass (*Cynodon dactylon*), and swamp grass (*Crypsis schoenoides*). Ruderal grassland vegetation associated with irrigated pastures include fiddleneck (*Amsinckia menziesii*), white clover (*Trifolium repens*), common knotweed (*Polygonum aviculare*; formerly known as *Polygonum arenastrum*), shepherd's purse (*Capsella bursa-pastoris*), mouse-ear chickweed (*Cerastium glomeratum*), common chickweed, brome (*Bromus stamineus*), Italian ryegrass (*Lolium multiflorum*), soft chess (*Bromus hordeaceus*), barnyard grass (*Echinochloa crus-galli*) and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), among others.

Overgrazing in irrigated pastures may degrade the habitat and eliminate cover for wildlife species. Livestock trample the vegetation and burrows wildlife require for cover, thereby altering the habitat. The resulting water pollution from a grazed landscape may reduce or eliminate wildlife use of these areas. Consequently, irrigated pastures provide limited habitat value to local wildlife species.

Open Water Ponds and Detention Basins

Several open water ponds are present within the project area. These somewhat naturalistic water features are surrounded by emergent vegetation such as broad-leaved cattail (*Typha latifolia*), hard-stem tule (*Schoenoplectus acutus* ssp. *occidentalis*), tall flatsedge, creeping spikerush and common rush. The upper banks of one of the ponds support red willows (*Salix laevigata*) and Fremont cottonwood (*Populus fremontii*) trees. In addition, there are several large detention basins in the project area. These basins are surrounded by high, earthen berms that serve to hold excess irrigation water for the crops and orchards in the surrounding fields. Along the perimeter of these water features, emergent marsh vegetation consists of broad-leaved cattail, hard-stem tule, tall flatsedge, and creeping spikerush. Patches of duckweed (*Lemna gibba*) cover portions of the open water.

Killdeer (*Charadrius vociferus*), mallard, American coot (*Fulica americana*), snowy egret (*Egretta thula*), common snipe (*Gallinago gallinago*), greater yellowlegs (*Tringa melanoleuca*), pied-billed grebe (*Podilymbus podiceps*), and Canada geese were all observed using these open water features. Bullfrog (*Rana catesbeiana*) and Pacific tree frogs (*Hyla regilla*) breed in these habitats, and raccoon (*Procyon lotor*) prints were observed around the perimeter of the open ponds and detention basins. The berms around the detention basins also provide habitat for the western burrowing owl (*Athene cunicularia hypugaea*).

Creeks, Canals and Irrigation Ditches

Creeks, canals and irrigation ditches are present throughout the project area. The irrigation canals in the project area are subject to extreme fluctuations in water level depending on irrigation demand and supply associated with agricultural activities. Numerous secondary irrigation ditches provide water to crops (via supply ditches) and remove excess irrigation water from the agricultural fields (via tailwater ditches). The

supply ditches are usually temporary features that are excavated on a year-to-year basis and are tailored to crop species. Supply ditches are also subject to maintenance to ensure adequate flows are delivered to crops. Conversely, the tailwater or collector ditches are generally more permanent, and support typical freshwater marsh and riparian species.

Freshwater marsh (Holland and Keil 1995) is an herbaceous community consisting of species commonly found along irrigation canals. This vegetation consists of large patches of broad-leaved cattail, giant reed (*Arundo donax*), hard-stem tule, tall flatsedge, water primrose (*Ludwigia* spp.), and common rush. Although this vegetation performs a valuable function in natural wetlands (for example, filtering the water, providing wildlife with food and cover), it restricts the flow of water through the canals; hence, the growth of this vegetation is frequently controlled (i.e., mechanical and/or chemical removal). The upper banks of the creeks and canals support California button willow (*Cephalanthus occidentalis* var. *californicus*), willows (*Salix* spp.), blackberry (*Rubus* spp.), mule fat (*Baccharis salicifolius*), California mugwort (*Artemisia douglasiana*), hoary nettle (*Urtica dioica* ssp. *holosericea*), Johnsongrass (*Sorghum halepense*), common velvet grass (*Holcus lanatus*), yellow bristle grass (*Setaria pumila*) and swamp grass (*Crypsis schoenoides*).

Bird species, including mallard, great blue heron (*Ardea herodias*), great egret (*Ardea alba*), belted kingfisher (*Ceryle alcyon*), black phoebe (*Sayornis nigricans*), barn swallows (*Hirundo rustica*), northern rough-winged swallows (*Stelgidopteryx serripennis*), and cliff swallows (*Petrochelidon pyrrhonota*) were observed foraging along the irrigation canals within the project area. Blackberry patches and hard-stem tule along the banks of the canals provide suitable nesting habitat for red-winged blackbird (*Agelaius phoeniceus*), marsh wren (*Cistothorus palustris*), and a host of other local breeders. Other wildlife species such as western aquatic garter snakes (*Thamnophis couchii*), bullfrog, mosquito fish (*Gambusia affinis*), and other game and non-game fish species were also observed in these irrigation canals. Coyote (*Canis lotor*), gray fox (*Urocyon cineroargenteus*), red fox (*Vulpes vulpes*), and raccoon have all been observed using the berms along the canals as migration/movement corridors. Muskrat (*Ondatra zibethicus*) have been observed in the irrigation canals and American beaver (*Castor canadensis*) dams have been observed in several locations along the primary irrigation canals within the project area.

The temporary supply ditches contain vegetation commonly associated with seasonal wetlands. Due to the frequent maintenance activities conducted in these supply ditches, including excavation, these ditches primarily support annual species and other plants that are quick to germinate and become established. As would be expected, these irrigation ditches support hydrophytic (wetland) vegetation including tall flatsedge, annual beard grass, joint paspalum, perennial smartweed (*Polygonum punctatum*), water smartweed *(Polygonum amphibium* var. *emersum*) and curly dock. The song sparrow (*Melospiza melodia*) and killdeer are often found in association with wetted ditches.

Seasonal Wetlands and Vernal Pools

In the absence of irrigation, seasonal wetlands are habitats that may appear dry in the summer and fall months, but following the first winter rains become saturated or inundated remaining this way for a period of several weeks to months each winter. Any time depressional topography occurs or is created through human activity, these areas can accumulate seasonal rainfall and surface runoff during the winter and spring months. Such areas eventually become dominated by hydrophytic plants and develop into seasonal wetland communities.

Vernal pools are natural seasonal wetlands that form in shallow basins that fill from precipitation during periods when the rate of water input exceeds the rate of water loss, primarily from evapotranspiration (Witham et al. 1998). This requires depressions in soils overlying an impervious substrate (clay pan, hard pan), which inhibits downward percolation, resulting in a perched water table. A factor that separates vernal pools from other seasonal, as well as permanent, wetlands is the lack of water input by long-distance drainage. Vernal pool flora germinates and grows beginning with winter rains, and often continues when inundated (Holland 1986). Such flora typically complete or have an annual reproductive cycle that corresponds to the period of saturation/inundation. Similarly, many invertebrates, amphibians, and crustaceans live in vernal pools that complete their life cycles during periods of saturation/inundation. Rising spring temperatures evaporates the standing water in the pools, leaving concentric bands of vegetation that colorfully encircle the drying pool (Holland 1986).

Numerous seasonal wetlands and several large vernal pool complexes occur within the project area. These areas are dominated by hydrophytic vegetation, including common rush, tall flatsedge, creeping spikerush, water-starwort (*Callitriche* spp.), spiny-fruited buttercup, cursed buttercup, hyssop loosestrife (*Lythrum hyssopifolium*), annual beardgrass, annual bluegrass, northwestern mannagrass (*Glyceria occidentalis*) and Mediterranean barley (*Hordeum marinum* ssp. *leporinum*); and vernal-pool associated vegetation, such as water shamrock (*Marsilea vestita* ssp. *vestita*), popcornflower (*Plagiobothrys* spp.), Carter's buttercup (*Ranunculus bonariensis* var. *trisepalus*), slender woolly marbles (*Psilocarphus tenellus* var. *tenellus*), Vasey's coyote-thistle (*Eryngium vaseyi*), double-horn downingia (*Downingia bicornuta* var. *picta*), Sacramento mesa mint (*Pogogyne zizyphoroides*), and white-flowered navarretia (*Navarretia leucocephala* ssp. *leucocephala*).

Seasonal wetlands provide wildlife with a seasonal water source that allows animals to drink and forage in the water during the winter and spring months. Amphibians such as the Pacific tree frog and the western toad (*Bufo boreas*) will lay their eggs in seasonal wetland habitats and complete their life cycle in the wetlands. Invertebrates such as mayflies (Ephemeroptera), damselflies (Odonata), and predaceous diving beetles (Dytiscidae) are commonly associated with inundated seasonal wetland habitats and complete their life cycle in the wetlands. Wildlife species observed in these habitats include common snipe, greater yellowlegs, black-necked stilt (*Himantopus mexicanus*), American avocet (*Recurvirostra americana*), Pacific tree frog, western toad, and bullfrog.

Special-Status Species

For purposes of this analysis, special-status species are plants and animals that are legally protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community (for example, the CNPS). Special-status species are defined as:

- plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq.*; 14 CCR §670.1 *et seq.*) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);

- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);

- plants and animals that meet the definition of endangered, rare, or threatened under the California Environmental Quality Act (CEQA) (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;

- Plants occurring on Lists 1A, 1B, 2, 3, and 4 of CNPS' *Electronic Inventory* (CNPS 2001). The California Department of Fish and Game (CDFG) recognizes that Lists 1A, 1B, and 2 of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and CDFG requests their inclusion in EIRs. Plants occurring on CNPS Lists 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2001). Such plants may be included as special-status species on a case by case basis due to local significance or recent biological information;

- migratory nongame birds of management concern listed by U.S. Fish and Wildlife Service (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);

- animals that are designated as "species of special concern" by CDFG (2007);

- animal species that are "fully protected" in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

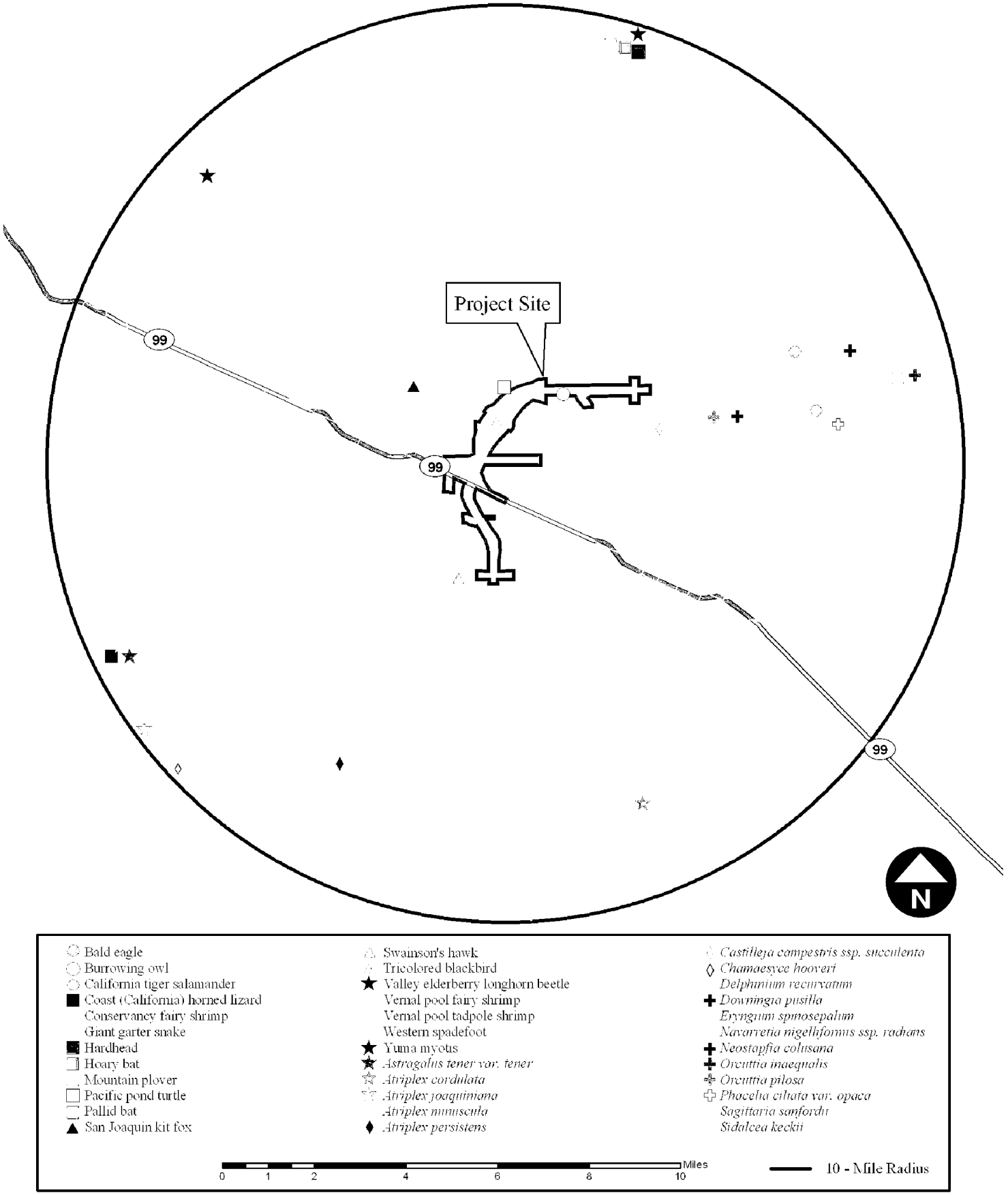
POTENTIAL SPECIAL-STATUS PLANTS IN THE PROJECT AREA

A search of CDFG's Natural Diversity Database (CNDDB 2006) was conducted for special-status plant records within ten miles of the project area. The search identified 24 special-status plant species having the potential to occur in the vicinity of the project area. **Table 4.11-1** provides a list of special-status plant species and their habitat requirements. Of the 24 plants listed, eight occur in specialized habitats such as alkaline soils, cismontane woodlands, riparian scrub and chenopod scrub and therefore would not be expected to occur in the project area.

No special-status plants were found during appropriately timed surveys conducted in the project area.

POTENTIAL SPECIAL-STATUS WILDLIFE SPECIES IN THE PROJECT AREA

Based on the CNDDB search twenty-two (22) special-status wildlife species are known to occur in the vicinity of the project area, shown in **Table 4.11-2**. Nineteen (19) of these special-status wildlife species have potential to occur within the project area. All other special-status wildlife species known from the region that are not expected to occur within the project area are dismissed from further consideration owing to the complete absence of suitable habitat that could support these species in the project area. An example of such a species would be valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), which is a federally listed species, and only occurs in association with blue elderberry (*Sambucus mexicana*), which does not occur within the project area. The nineteen special-status wildlife species that have potential to occur within the project area are further discussed below. **Figure 4.11-2** provides a graphical illustration of the closest known records for special-status species within 10 miles of the AME project study area.



ATWATER-MERCED EXPRESSWAY

Closest Known Records for Special-Status Species Within 10 Miles of the AME Project Area

REVISED FIGURE 4.11-2

Source: Monk and Associates, 2008.

Table 4.11-1 Special-Status Plant Species Known to Occur Within the Vicinity of the Atwater-Merced Expressway Project Area

Family *Taxon* Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Alismataceae *Sagittaria sanfordii* Sanford's arrowhead	Fed: -- State: - CNPS List 1B.2	May-October	Marshes and swamps (shallow freshwater). Elevation 0-650 meters.	Record for this species located 2.3 miles east of the project area (Occurrence No. 9).	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.
Apiaceae *Eryngium racemosum* Delta button-celery	Fed: -- State: CE CNPS List 1B.1	June-September	Riparian scrub (vernally mesic clay depressions). Elevation 3-30 meters.	On CNPS 9 quad list	None. No suitable habitat present on project site. Would have been detectable during appropriately timed surveys.
Eryngium spinosepalum Spiny-sepaled button-celery	Fed: -- State: - CNPS List 1B.2	April-May	Valley and foothill grassland; vernal pools. Elevation 80-255 meters.	Record for this species located 6.3 miles east of the project area(Occurrence No. 53).	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.
Asteraceae *Trichocoronis wrightii wrightii* Wright's trichocoronis	Fed: - State: - CNPS List 2.1	May-September	Meadows; marshes and swamps; riparian forest; vernal pools; [alkaline]. Elevation 5-435 meters.	On CNPS 9 quad list.	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.
Campanulaceae *Downingia pusilla* Dwarf downingia	Fed: - State: - CNPS List 2.2	March-May	Valley and foothill grassland (mesic); vernal pools. Elevation below 445 meters.	Record for this species located 4.8 miles east of the project area (Occurrence No. 93).	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.

Family *Taxon* Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Atriplex joaquiniana San Joaquin spearscale	Fed: - State: - CNPS List 1B.2	April-October	Chenopod scrub; meadows and seeps; playas; valley and foothill grassland; [alkaline]. Elevation 1-835 meters.	Record for this species located 8.8 miles southwest of the project area (Occurrence No. 74).	None. No suitable alkaline habitat present on project site.
Atriplex minuscule Lesser saltbush	Fed: -- State: - CNPS List 1B.1	May-October	Chenopod scrub; playas; valley and foothill grassland [alkaline]. Elevation 15-200 meters.	Record for this species located 8.5 miles southwest of the project area (Occurrence No. 28).	None. No suitable alkaline habitat present on project site.
Atriplex persistens Vernal pool smallscale	Fed: - State: - CNPS List 1B.2	July-October	Vernal pools (alkaline). Elevation 10-115 meters.	Record for this species located 3.1 miles south of the project area (Occurrence No. 7).	None. No suitable alkaline habitat present on project site.
Atriplex subtilis Subtle orache	Fed: State: CNPS List 1B.2	June-October	Valley & foothill grassland. Elevation 40-100 meters. Known from approximately 25 occurrences.	On CNPS 9 quad list	None. Marginally suitable habitat present on project site. Species was not identified during appropriately timed surveys.
Euphorbiaceae *Chamaesyce hooveri* Hoover's spurge	Fed: FT State: - CNPS List 1B.2	July-October	Vernal pools. Elevation 25-250 meters.	Record for this species located 8.4 miles southwest of the project area (Occurrence No. 22).	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.

Family *Taxon* Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Fabaceae *Astragalus tener tener* Alkali milkvetch	Fed: - State: - CNPS List 1B.2	March-June	Alkali playa, valley and foothill grassland (adobe clay), alkaline vernal pools. Low ground and flooded lands. Elevation 1-60 meters.	Record for this species located 8.3 miles southwest of the project area (Occurrence No. 55).	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.
Hydrophyllaceae *Phacelia ciliata opaca* Merced phacelia	Fed: -- State: - CNPS List 1B.2	February-May	Valley and foothill grassland (clay). Elevation 60-150 meters.	Record for this species located 5.3 miles east of the project area (Occurrence No. 4).	None. Marginally suitable habitat present on project site. Species was not identified during appropriately timed surveys.
Lamiaceae *Monardella leucocephala* Merced monardella	Fed: -- State: - CNPS List 1A	May-August	Valley and foothill grassland (sandy). Elevation 35-100 meters.	On CNPS 9 quad list	None. Marginally suitable habitat present on project site. Species was not identified during appropriately timed surveys.
Onagraceae *Clarkia rostrata* Beaked clarkia	Fed: -- State: - CNPS List 1B.3	April-May	Cismontane woodland; valley and foothill grassland. Elevation 60-500 meters.	On CNPS 9 quad list	None. No suitable habitat present on project site. Would have been detectable during appropriately timed surveys.
Poaceae *Agrostis hendersonii* Henderson's bent grass	Fed: -- State: - CNPS List 3.2	April-May	Valley and foothill grassland (mesic); vernal pools. Elevation 70-305 meters.	Record for this species located 3.5 miles northeast of the project area (Occurrence No. 4).	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.

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Family *Taxon* Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Neostapfia colusaa Colusa grass	Fed: FT State: CE CNPS List 1B.1	May-August	Vernal pools. Elevation 5-200 meters.	Record for this species located 2.6 miles east of the project area (Occurrence No. 12).	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.
Orcuttia inaequalis San Joaquin Valley Orcutt grass	Fed: FT State: CE CNPS: List 1B.1	April-September	Vernal pools. Elevation 10-75 meters.	Record for this species located 6.0 miles east of the project area (Occurrence No. 57).	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.
Orcuttia pilosa Hairy Orcutt grass	Fed: FE State: CE CNPS List 1B.1	May-September	Vernal pools. Elevation 55-200 meters.	Record for this species located 1.8 miles east of the project area (Occurrence No. 16).	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.
Polemoniaceae *Navarretia nigelliformis radians* Shining navarretia	Fed: - State: - CNPS List 1B.2	May-July	Cismontane woodland; valley and foothill grassland; vernal pools. Elevation 90-1000 meters.	Record for this species located 4.1 miles east of the project area (Occurrence No. 37).	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.
Navarretia prostrata Prostrate navarretia	Fed: State: CNPS List 1B.1	April-July	Coastal scrub, valley and foothill grassland (alkaline), vernal pools/mesic; elevation 15-700 meters.	Record for this species located 9.0 miles southwest of the project area (Occurrence No. 24).	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.

Family *Taxon* Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Ranunculaceae *Delphinium recurvatum* Recurved larkspur	Fed: -- State: - CNPS List 1B.2	March-June	Chenopod scrub; cismontane woodland; valley and foothill grassland; [alkaline]. Elevation 3-750 meters.	Record for this species located 8.4 miles south of the project area (Occurrence No. 79).	None. No suitable habitat present on project site. Would have been detectable during appropriately timed surveys.
Scrophulariaceae *Castilleja campestris succulenta* Succulent owl's-clover	Fed: FT State: CE CNPS List 1B.2	April-May	Vernal pools. Elevation 50-750 meters.	Record for this species located 3.1 miles northeast of the project area (Occurrence No. 57).	None. Suitable habitat present on project site. Species was not identified during appropriately timed surveys.

Source: NRM, 2008

Table 4.11-2 Special-Status Wildlife Species Known to Occur Within the Vicinity of the Atwater-Merced Expressway Project Area

Species	*Status	Habitat	Closest	Probability on Project Site
Invertebrates				
Conservancy fairy shrimp *Branchinecta conservatio*	Fed: FE State: - Other:	Endemic to the northern parts of the Central Valley. Prefers larger, turbid vernal pools located in alluvial swales.	Record for this species is located 8.6 miles SW from the project area (Occurrence No. 5)	None. USFWS protocol surveys conducted in 2006-2007 with negative findings.
Vernal pool fairy shrimp *Branchinecta lynchi*	Fed: FT State: - Other:	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains. Inhabit static rain-filled/vernal pools, small, clear water sandstone-depression pools and grassed swale, earth slump, or basalt-flow	Record for this species is located 0.3 mile east of the project area (Occurrence No. 181). More than 30 additional records for this species within 10 miles of the project area.	Species found in habitats along Bellevue during USFWS protocol surveys conducted in 2006-2007, thus project will be required to mitigate for impacts to occupied habitat (See text and Impacts & Mitigation measures).
Vernal pool tadpole shrimp *Lepidurus packardi*	Fed: FE State: - Other:	Inhabits vernal pools with turbid and/or silty water. Mud substrate typical.	Record for this species is located 5.7 miles east of the project area (Occurrence No. 144	USFWS regards portions of the project area to be suitable habitat for this species, thus project will be required to mitigate for impacts to occupied habitat (See text and Impacts & Mitigation measures).
Insects				
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Fed: FT State: - Other:	Prefers riparian and other habitats with blue elderberries (Sambucus mexicana). shrubs with stems 1 to 5 inches in diameter.	Record for this species is located 8.4 miles NW from the project area (Occurrence No. 127)	None. There are no elderberry shrubs present in the project area. Therefore this species will not be impacted by the proposed project.

Fish				
Hardhead *Mylopharadon conocephalus*	Fed: - State: CSC Other: -	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Clear, deep pools with sand-gravel-boulder bottoms and slow water velocity. Not found where exotic centrarchids predominate.	Record for this species is located 7.4 miles north of the project area in Merced River (Occurrence No. 13). Also known to occur in Bear Creek (Occurrence No. 11).	This species has a low potential to occur in the large creeks and canals in the project area. Consequently, this species may be affected by the project (see Impacts and Mitigation text).
Amphibians				
California tiger salamander *Ambystoma californiense*	Fed: FT State: CSC Other:	Found in grassland habitats of the valleys and foothills. Requires burrows for aestivation and standing water until late spring (May) for larvae to metamorphose.	Record for this species is located 3.9 miles east from the project area (Occurrence No. 471). There are 17 additional records for this species known to occur within 10 miles of the project area.	None found during USFWS protocol surveys conducted in 2006-2007; however, project will be required to mitigate for impacts to potentially occupied upland habitat (See text and Impacts & Mitigation section).
Western spadefoot toad *Scaphiopus hammondii*	Fed: -- State: CSC Other:	Found primarily in grassland habitats, but may occur in valley and foothill woodlands. Requires vernal pools, seasonal wetlands, or stock ponds for breeding and egg laying. Eggs are typically laid in March. Eggs hatch and	Record for this species is located 9 miles SW from the project area (Occurrence No. 99)	High. Species was detected in the project area during winter drift fence surveys conducted in the project area. Project will be required to mitigate for impacts to potential breeding habitat (see text and Impacts & Mitigation section).
Reptiles				
Pacific pond turtle (=western pond turtle) *Actinemys marmorata (=Clemmys m.)*	Fed: -- State: CSC Other:	Inhabits ponds, marshes, rivers, **streams, and** irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying. Occurs in the Central Valley and Contra Costa County.	Relatively common in the Central Valley	High. This species was observed in several large canals and irrigation ditches within the project area. This species may be affected by the project (see Impacts and Mitigation text).

Reptiles Cont'd				
California horned lizard *Phrynosoma coronatum frontale*	Fed: -- State: CSC Other:	Found in a variety of habitats, but most common in sandy washes with scattered shrubs. Requires open areas for sunning, shrubs for cover, and sandy soil for hiding. Feeds on ants and other insects.	Record for this species is located 8.2 miles SW from the project area (Occurrence No. 36)	This species has a low potential to occur in the project area. Consequently, this species may be affected by the project, (see Impacts and Mitigation text).
Giant garter snake *Thamnophis gigas*	Fed: FT State: CT Other:	Inhabits freshwater marshes and low gradient streams. Also found in drainage canals and irrigation ditches.	Record for this species is located 4.4 miles east of the project area (Occurrence No. 144) This record is from 1940.	Very low. Project is not likely to affect this species; however avoidance measures will be implemented (see Impacts and Mitigation)
Birds				
White-tailed kite *Elanus leucurus*	Fed: State: Other:	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	Common throughout California	High. This species has been observed in the project area, and suitable nesting habitat is present. Preconstruction nesting surveys will be conducted. This species may be affected by the project (see Impacts and Mitigation text).
Northern harrier *Circus cyaneus*	Fed:- State: CSC Other: *	Found in or near freshwater and salt marshes. Nests on the ground or in shrubby vegetation.	Common throughout California	High. This species has been observed in the project area, and suitable nesting habitat is present. Preconstruction nesting surveys will be conducted. This species may be affected by the project (see Impacts and Mitigation text).
Cooper's hawk *Accipiter cooperii*	Fed: - State: SC Other: *	Nests in heavily wooded areas along streams, rivers, or near springs/seeps. Prefers to nest in tall canopies with an open understory usually near openings. Oak and riparian woodlands are preferred habitats.	Common throughout California	High. This species has been observed in the project area, and suitable nesting habitat is present. Preconstruction nesting surveys will be conducted. This species may be affected by the project, (see Impacts and Mitigation text).

Birds Cont'd				
Red shouldered hawk *Buteo lineatus*	Fed: - State: - Other: *	Found in a wide variety of habitats. Nest in oaks, eucalyptus, cypress trees, riparian woodland. Forages over grasslands, agricultural fields, woodlands.	Common throughout California	High. Known to nest within the project area. Preconstruction surveys will be conducted. This species may be affected by the project (see Impacts and Mitigation text).
Swainson's hawk *Buteo swainsoni*	Fed: - State: CT Other: *	Migratory and resident raptor that breeds in open areas with scattered trees. Prefers riparian and sparse oak woodland habitats for nesting. Requires nearby grasslands, grain fields, or alfalfa for foraging.	Record for this species is located within the project area. (Occurrence No. 1690)	High. Known to nest within the project area. Preconstruction nesting surveys will be conducted. This species may be affected by the project (see Impacts and Mitigation text).
Red-tailed hawk *Buteo jamaicensis*	Fed: - State: - Other: *	Found in a wide variety of habitats. Nests in oaks, eucalyptus, cypress trees, among others. Forages over grasslands, agricultural fields, woodlands, marshes.	Common throughout California	High. Known to nest within the project area. Preconstruction surveys will be conducted. This species may be affected by the project (see Impacts and Mitigation text).
Ferruginous hawk *Buteo regalis*	Fed:-- State: **WL** Other: *	Winter migrant to California where they prefer grasslands, cultivated fields and arid areas with an abundance of prey species, such as pocket gophers, black- tailed hares, and cottontails.	Uncommon. Visitor from September to early April. Generally does not breed in California. Record of a Ferruginous hawk foraging within the project area (Occurrence No. 60)	This species has been observed foraging over the project area; however, this species does not breed in California. Therefore this species will not be impacted by the proposed project.
Mountain plover *Charadrius montanus*	Fed: -- State: CSC Other:	Winters in California, but does not breed in California. Inhabits open grasslands and rolling foothills. Prefers short grass or bare ground, especially grazed areas with burrowing rodents.	Record for this species is located 5.8 miles east of the project area (Occurrence No. 8	Low potential to forage in the ruderal habitats within the project area, however this species does not nest in California. Therefore, this species will not be impacted by the proposed project.

Birds Cont'd				
Western burrowing owl *Athene cunicularia hypugaea*	Fed: -- State: CSC Other: *	Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Record for this species within the project area (Occurrence No. 876)**	High. This species was identified in several locations in the project area in 2006 and 2007. Preconstruction nesting surveys will be conducted. This species may be affected by the project (see Impacts and Mitigation text).
Loggerhead shrike *Lanius ludovicianus*	Fed: -- State: CSC Other:	Found in broken woodlands, shrubland, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	Common throughout California	High. This species has been observed in the project area, and suitable nesting habitat is present. Preconstruction nesting surveys will be conducted. This species may be affected by the project (see Impacts and Mitigation text).
Tricolored blackbird *Agelaius tricolor*	Fed: -- State: CSC Other:*	Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	Record for this species is located 1.3 miles SW of the project area (Occurrence No. 23)	Unlikely to nest in the project area. Regardless, preconstruction nesting surveys will be conducted (See text and Impacts and Mitigation Measures.)
Mammals				
San Joaquin kit fox *Vulpes macrotis mutica*	Fed: FE State: CT Other:	Inhabits open grasslands with scattered shrubs. Needs loose-textured sand soils for burrowing.	Record for this species is located 2.5 miles west of the project area (Occurrence No. 23) along Livingston Canal.	None observed during USFWS protocol surveys conducted in 2006; however, project will be required to mitigate for impacts to potential migration habitat (See text and Impacts & Mitigation measures).

Source: NRM, 2008

Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp (*Branchinecta lynchi*) was designated as threatened in its entire range on September 19, 1994 (Federal Register 59:48136-48153). The vernal pool fairy shrimp is a small aquatic crustacean that ranges in size from ½ to one inch long. Fairy shrimp feed on algae, bacteria, protozoa, rotifers and bits of detritus. The vernal pool fairy shrimp occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. It tends to occur in smaller pools (less than 0.05-acre) that are most commonly found in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands. It has also been collected in large vernal pools (e.g. 25 acres). Vernal pool fairy shrimp have been collected from early December to early May (USFWS 1994).

The closest record for vernal pool fairy shrimp is located immediately adjacent to the project area (CNDDB Occurrence No. 181), and there are more than thirty additional records for this species within 10 miles of the project area. Seasonal wetlands, vernal pools and other topographic depressions within project area provide "suitable habitat" for vernal pool fairy shrimp.

As discussed above, dry season surveys were conducted and revealed the presence of eggs belonging to the fairy shrimp genus *Branchinecta lynchi* in 14 potential special-status shrimp habitats along Bellevue Road. The wet season (2006-2007) was unusually brief, however sufficient water was present to complete surveys in all habitats except those where *Branchinecta* eggs found. None of the habitats that contained *Branchinecta* eggs held water during the wet season of 2006-2007. All other potential special-status shrimp habitats in the proposed project footprint held water during the wet season, and no other species of fairy shrimp were found in any of these habitats during the wet or the dry season.

Vernal pool tadpole shrimp

Vernal pool tadpole shrimp (*Lepidurus packardi*) was designated as threatened in its entire range on September 19, 1994 (Federal Register 59:48136-48153). Critical habitat for this species was originally designated on August 6, 2003 (Federal Register 68: 46683-46867), and the designation was revised August 11, 2005. Critical habitat units by individual fairy shrimp species were published on February 10, 2006 (Federal Register 71:7117). The project area is located outside critical habitat (Unit 16) designated for this species in Merced County.

The vernal pool tadpole shrimp is a small crustacean whose adults reach approximately 2 inches in length. Vernal pool tadpole shrimp require seasonally aquatic habitats that are wet for at least 7 weeks and dry in summer. They occur in a variety of natural and artificial seasonally inundated habitats including vernal pools, seasonal wetlands, alkaline pools, clay flats, vernal swales, stockponds, railroad right-of-way pools, roadside ditches, and road rut pools resulting from vehicular activity. Occupied pools and wetlands typically have highly turbid waters or aquatic vegetation that may provide shelter from predators. They also have been observed in clear waters. Tadpole shrimp climb or scramble over objects, as well as plowing along or within bottom sediments. Their diet consists of organic debris and living organisms, such as fairy shrimp and other invertebrates.

The life history of the vernal pool tadpole shrimp is linked to the seasonal cycle of the vernal pool. After winter rainwater fills the pool, the population is reestablished from cysts that lie dormant in the dry pool

sediments. Sexually mature adults have been observed in vernal pools three to four weeks after the pools had been filled. Some cysts hatch immediately and the others remain dormant in the soil to hatch during later rainy seasons.

The vernal pool tadpole shrimp is known from 19 populations in the Central Valley, ranging from east of Redding in Shasta County south to the San Luis National Wildlife Refuge in Merced County, from a small population near the Napa County airport, and from a single vernal pool complex on the San Francisco Bay National Wildlife Refuge in the City of Fremont, Alameda County. The ephemeral wetlands that support this network of populations are remnants of what was formerly a pristine vernal pool ecosystem, but which has been converted to mainly agricultural and urban uses. This highly disturbed remnant habitat is imperiled by a variety of human-caused activities, primarily urban development, water supply and flood control projects, and agriculture. Rapid urbanization of the Central Valley of California currently poses the most severe threat to the continued existence of the listed vernal pool crustaceans.

The closest record for vernal pool tadpole shrimp is located 5.7 miles east of the project area (CNDDB Occurrence No. 127). Seasonal wetlands, vernal pools and other topographic depressions within project area provide "suitable habitat" (suitable does not infer presence, only conditions that could support this species) for vernal pool tadpole shrimp. Accordingly, USFWS authorized EcoAnalysts, Inc. to conduct a protocol survey for vernal pool crustaceans (including vernal pool tadpole shrimp) in 2006-2007. No life stages of any listed vernal pool tadpole shrimp were recovered from any of the potential habitat features identified within the project area. Regardless, the USFWS considers the protocol survey effort invalid owing to drought-like conditions in the winter of 2006/07. Therefore, technically the protocol survey cannot be used to demonstrate absence of vernal pool tadpole shrimp in the project area. Accordingly, the USFWS still regards portions of the project area to be suitable habitat for vernal pool tadpole shrimp.

Hardhead

Hardhead (*Mylopharadon conocephalus*) is a California "species of special concern." This fish has no federal status. Hardhead are typically found in small to large streams in a low to mid-elevation environment. Hardhead may also inhabit lakes or reservoirs. Hardhead minnow are usually found in clear deep streams with a slow but present flow. In small streams hardhead tend to spawn near their resident pools, while fish in larger rivers or lakes often move up to 30-75 kilometers to find suitable spawning grounds. Though spawning may occur in pools, runs, or riffles, the bedding area will typically be characterized by gravel and rocky substrate.

This species is known to occur in Bear Creek (CNDDB Occurrence No 11), which is located in the southeastern corner of the project area but will not be directly impacted by the proposed project. The next nearest CNDDB record for this species is located 7.4 miles north of the project area in Merced River (Occurrence No 13). This species has the potential to occur in project-area portions of Canal Creek and/or Black Rascal Creek.

California Tiger Salamander

The California tiger salamander (*Ambystoma californiense*), Central California Distinct Population Segment, is a federal listed threatened species. In addition to being federally listed, the California tiger salamander is also a California "species of special concern." This title affords the California tiger salamander no legally mandated

protection; however, pursuant to CEQA (14 CCR §15380), this species must be considered in any project that will undergo, or is currently undergoing CEQA review, and/or any project that must obtain an environmental permit(s) from a public agency (e.g., the U.S. Army Corps of Engineers). The California tiger salamander is also protected under Title 14 of the California Code of Regulations (CCR). Under Title 14, CCR 41 (1996), California tiger salamander is a protected amphibian that may only be taken or possessed under a special permit issued by CDFG pursuant to sections 650 and 670.7 of these regulations, or Section 2081 of the Fish and Game Code.

California tiger salamanders occur in grasslands and open oak woodlands that provide suitable aestivation and/or breeding habitats. California tiger salamanders spend the majority of their lives underground and typically only emerge from their subterranean refugia during the rainy season to migrate to breeding ponds. California tiger salamanders emerge during the first heavy, warm rains of the year, typically in late November and early December and may migrate up to 0.6-mile or further from their underground refugia to breeding ponds (personal data Monk & Lynch 1997).

The closest record for California tiger salamander is located 3.9 miles east of the project area (CNDDB Occurrence No. 471), and there are numerous additional records for this species within 10 miles of the project area. The majority of the records of California tiger salamander were found in stockponds. Other records are associated with vernal pools, wetlands, artificially created pools, and slough channels. All records are between 1994 and 2001. Seasonal wetlands, ponds and vernal pools within the project area provide potential breeding habitat for California tiger salamander.

No California tiger salamander adults, larvae, or eggs were observed during funnel trapping, visual surveys, or dip net surveys conducted in April or May of 2006. Larval surveys for the second year were not conducted due to lack of inundation in the potential breeding habitats. A winter drift fencing survey was also conducted in areas surrounding all potential breeding habitats in the project area in 2006-2007, which also yielded negative results. **Similarly, as there was almost no rainfall that winter, not all potential breeding ponds/pools hydrated and thus larval surveys in 2007 were not conducted.** Attachment A provides the California Tiger Salamander 2006-2007 Survey report. Regardless, USFWS considers the protocol survey effort invalid owing to drought like condition in the winter of 2006/07. Therefore, technically **this** protocol survey can not be used to demonstrate absence of CTS in the project area. Accordingly, USFWS still regards portions of the project area to be suitable habitat for the California tiger salamander.

Western Spadefoot Toad

The western spadefoot toad (*Scaphiopus hammondii*) is a California "species of special concern." This title affords the western spadefoot toad no legally mandated protection; however, pursuant to CEQA (14 CCR §15380), this species must be considered in any project that will undergo, or is currently undergoing CEQA review, and/or any project that must obtain an environmental permit(s) from a public agency (e.g., the County or the U.S Army Corps of Engineers). The western spadefoot toad is also protected under Title 14 of the California Code of Regulations (CCR). Under Title 14, CCR 41 (1996), western spadefoot toad is a protected amphibian that may only be taken or possessed under a special permit issued by the California Department of Fish and Game (CDFG) pursuant to sections 650 and 670.7 of these regulations, or Section 2081 of the Fish and Game Code. There is no federal designation for this species.

Western spadefoot toad is found primarily in grassland habitats, but may occur in valley and foothill woodlands. It requires vernal pools, seasonal wetlands, or stock ponds for breeding and egg laying. Eggs are typically laid in March. They hatch in late-March through April. Larvae undergo a dramatically rapid metamorphosis to juvenile toads. This rapid metamorphosis allows this toad to use highly ephemeral bodies of water, such as vernal pools, to reproduce.

Seasonal wetlands, ponds, detention basins, and vernal pools within the project area provide potential breeding habitat for western spadefoot toad. Western spadefoot toads were observed in pitfall traps during the 2006/2007 winter field survey conducted for California tiger salamanders. The western spadefoot toads were found near potential breeding habitat areas along Bellevue Road.

Pacific Pond Turtle

The Pacific pond turtle (*Actinemys marmorata*) is a California "species of special concern." It does not have a federal status designation. The pond turtle is a habitat generalist, inhabiting a wide range of fresh and brackish, permanent and intermittent water bodies from sea level to about 4,500 feet above sea level (USFWS 1992). Typically, this species is found in ponds, marshes, ditches, streams, and rivers that have rocky or muddy bottoms.

The pond turtle also requires upland areas for burrowing habitat where it digs nests and buries its eggs. These nests can extend from 52 feet to 1,219 feet from watercourses (Jennings and Hayes 1992), however most pond turtles nest in uplands within 250 meters of water (Bury, unpublished). Upland nest sites are usually found in areas with sparse vegetation. Sunny, barren, and undisturbed (not disked) land provides optimal habitat, while shady riparian habitat and planted agricultural fields do not provide suitable habitat (op. cit.). Eggs are typically laid from March to August (Zeiner et. al. 1988), with most eggs being laid in May and June. Hatchlings will stay in the nest until the following April (Bury, unpublished). Predators of juvenile pond turtles include the non-native bullfrog and Centrarchid fish (sunfish). This pond turtle is most visible between April and July when it can be observed basking in the sun. In areas where the water is very warm during these months, however, it will bask in the warm water and will be more difficult to observe. It eats plants, insects, worms, fish and carrion (Stebbins 1985, 2003).

Pacific pond turtles were observed in several of the large irrigation canals and ditches within the project area.

California Horned Lizard

California horned lizard (*Phrynosoma coronatum frontale*) is a state "species of special concern." It has no federal status. This lizard occurs in a variety of habitats, such as valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress forests, juniper forests, and annual grassland habitats; however, it is most common in sandy washes with scattered shrubs. Open areas are required for basking. This species forages on the ground in open areas, usually between shrubs and often near ant nests. Populations of California horned lizard have been reduced throughout the lowlands of California due to urbanization and agricultural expansion, particularly as a result of deep disking practices that routinely occur in these areas.

The closest known record for this species is located 8.2 miles southwest of the project area (CNBBD Occurrence No. 36). The friable/sandy soils common throughout the project area provide suitable habitat for this species, although the intensive agricultural activities in the area may have eliminated opportunities for this

lizard to survive. In the absence of surveys that demonstrate that this species does not occur in the project area, it is concluded that the species may exist in suitable habitat in the project area.

Giant Garter Snake

The giant garter snake (*Thamnophis gigas*) was federally listed as threatened in its entire range on October 20, 1993 (Federal Register 58: 54053-54066)(USFWS 1993). Critical habitat has not been designated for this species. Giant garter snake is also listed as threatened under the California Endangered Species Act in 1971. Because of the threatened status of this species, all proposed projects that could affect giant garter snake must address potential impacts to this species.

The giant garter snake is one of the largest garter snakes, reaching a total length of at least 63 inches. Essential habitat components consist of (1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) upland grassy banks and openings in waterside vegetation for basking, cover and retreat sites; and (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter. The giant garter snake inhabits small mammal burrows and other soil crevices above prevailing flood elevations throughout its winter dormancy period. The breeding season extends from March through April, and females give birth to live young from late July through early September.

The closest record (CNDDB Occurrence Number 144) of giant garter snake to the project area is a female snake that was collected in 1908. While the exact location of the collection site is unknown, it appears to be along Bear Creek approximately 4.4 miles east-southeast from the project area. The remaining records in the project vicinity (CNDDB Occurrence Numbers 136, 25, 42 and 23) were recorded between 1976 and 1986 and are located 15 to 20 miles from the project area.

A *Giant Garter Snake Habitat Assessment Report* was submitted to the USFWS which concluded that the intensive and thoroughness of agricultural activities in the area has eliminated opportunities for giant garter snake to survive. As there are no recent occurrences of giant garter snake reported in the region of the project area [the closest known record for giant garter snake was collected in 1908, almost 100 years ago], it is believed that giant garter snakes do not occur within the project area and, therefore, will not be affected by the proposed expressway project.

White-Tailed Kite

The white-tailed kite (*Elanus caeruleus*) is fully protected under California Fish and Game Code §3511. This raptor is also protected under the Migratory Bird Treaty Act (50 CFR 10.13), and its nest, eggs, and young are protected pursuant to California Fish and Game Code §3503 and §3503.5. The white-tailed kite is typically found hunting in grassland, marsh, or cultivated fields where there are dense-topped trees or shrubs for nesting and perching. They nest in a wide variety of trees of moderate height and sometimes in tall bushes, such as coyote bush (*Baccharis pilularis*). Native trees used for nesting are live and deciduous oaks (*Quercus* spp.), willows (*Salix* spp.), cottonwoods (*Populus* spp.), sycamores (*Platanus* spp.), maples (*Acer* spp.), toyon (*Heteromeles arbutifolia*), and Monterey cypress (*Cupressus macrocarpa*). Kites often reside near water sources, where prey is more abundant. The particular characteristics of the nesting site do not appear to be as

important as its proximity to a suitable food source (Shuford 1993). Kites primarily hunt small mammals, with California meadow voles (*Microtus californicus*).

White-tailed kites were observed foraging on several occasions within the project area in 2006.

Northern Harrier

The northern harrier (*Circus cyaneus*) is a California species of special concern. This raptor is also protected under California Fish and Game Code §3503.5 that protects nesting raptors and their eggs/young. The northern harrier is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13). Northern harriers build grass-lined nests on the ground within dense, low-lying vegetation in a variety of habitats, though they are typically found nesting in grassland or marsh habitats. They usually nest on level to near level ground. This species is particularly vulnerable to ground predators such as coyotes, red fox and various snake species. Ground nesting birds in general are also subject to disturbance by agricultural practices. Northern harriers likely forage over the project area and may nest in or around the open grasslands and upland irrigated pasturelands that provide suitable nesting habitat for this species.

Northern harriers were observed in the project area during site visits in 2006. The ruderal grassland community found within the project area provides suitable foraging and nesting habitat for the northern harrier.

Cooper's Hawk

Cooper's hawk (Accipiter cooperi) is a California "species of special concern." This raptor is also protected under the Migratory Bird Treaty Act (50 CFR 10.13). Its nest, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, and §3800). The Cooper's hawk is a yearlong resident that typically nests in heavily-wooded areas along streams, rivers, or in close proximity to springs or seeps. There are also migratory Cooper's hawks that can be found locally in the fall and winter months. This species prefers to nest in tall canopies with an open understory, usually near openings. Cooper's hawks construct nests near the trunk of large trees. Nests are constructed of sticks, and may be reused in subsequent years. In the region of the project area, Cooper's hawks nest from April through July. Prey consists primarily of avian species and to a lesser extent mammalian species.

A Cooper's hawk was observed foraging in the project area. While the project area does not provide prime nesting habitat, the ruderal grassland and orchards found within the project area provide suitable foraging habitat for this species.

Red Shouldered Hawk

Red shouldered hawk (*Buteo lineatus*) is protected under the Federal Migratory Bird Treaty Act (50 CFR 10.13) and under California Fish and Game Code Sections 3503, 3503.5, 3800, and 3513 which protect nesting raptors and their eggs/young. This medium-sized raptor prefers the largest trees in a particular area for nest construction. Blue gum eucalyptus (*Eucalyptus globulus*) trees have become favorite nesting trees for this species in California. Prey consists of reptiles and small rodents.

Red shouldered hawks were observed foraging over the project area and are known to nest within the project area. The eucalyptus groves and other large trees within the project area provide suitable nesting habitat for red shouldered hawks.

Red-Tailed Hawk

The red-tailed hawk (*Buteo jamaicensis*) is protected under the Migratory Bird Treaty Act (50 CFR 10.13) and under California Fish and Game Code §3503.5, 3800, and 3513 which protect nesting raptors and their eggs/young. This raptor species has an extremely wide tolerance for habitat variation, which can be attributed to its very broad spectrum of prey (Johnsgard 1990). Some clear habitat preferences do exist, however, and have been analyzed by a variety of studies. Habitat preferences in the winter for both sexes are oriented toward upland pasture, grassland, and hardwood habitats, with females also using lowland hardwoods and males using marsh–shrub communities. In the spring, females continue to use mainly upland and lowland hardwoods, probably as a reflection of their orientation toward a nest site. Red-tailed hawks have been observed nesting in a variety of tree species including eucalyptus, coast live oak, and valley oak trees.

Red-tailed hawks were observed foraging over the project area during the 2006 and 2007 wildlife surveys and are known to nest within the project area. The eucalyptus trees within the project area provide suitable nesting habitat for red-tailed hawks.

Swainson's Hawk

The Swainson's hawk (*Buteo swainsonii*) is a state listed threatened species pursuant to the California Endangered Species Act (CESA), Title 14, California Code of Regulations. While it has no special federal status, it is protected from direct take under the Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). Swainson's hawks, their nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, §3513, and §3800).

Swainson's hawk inhabits open to semi-open areas at low to middle elevations in valleys, dry meadows, foothills, and level uplands (Kochert 1986). It nests almost exclusively in trees and will nest in almost any tree species that is at least 10 feet tall (Schmutz et. al. 1984). Swainson's hawks occasionally nest in shrubs, on telephone poles, and on the ground. In the Central Valley of California, the majority of Swainson's hawk nests and territories are associated with riparian systems and nests are commonly found in cottonwoods and oaks (Schlorff et. al. 1984). They have also been documented nesting in eucalyptus, black walnut, black locust (Robinia pseudoacacia), almond, Osage orange (Maclura pomifera), Arizona cypress (Cupressus arizonica) and pine (Pinus spp.) (CNDDB records).

Foraging habitats include alfalfa fields, fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture, and rice land when not flooded (CDFG 1994). The Swainson's hawk generally forages in open habitats with short vegetation containing small mammals, reptiles, birds, and insects. Its primary prey in the Central Valley is California meadow vole (Microtus californicus). Agricultural areas are often preferred over more natural grassland habitats due to larger prey populations.

Based on the California Department of Fish and Game's (CDFG) Natural Diversity Database, RareFind 3.1 application (CNDDB), there is a new (July 2007) record for nesting Swainson's hawk within the project area (CNDDB Occurrence No. 1690). The trees within the project area provide suitable nesting habitat for this

species. The fallow fields and hay fields provide suitable foraging habitat for this species. Swainson's hawks were observed in the project area during the wildlife surveys conducted in 2006 and 2007. Consequently, a nesting survey will be conducted the year that trees are proposed to be impacted or removed from the project area.

The suitable foraging habitat within the project area is within the 10-mile radius of the known Swainson's hawk nest (CNDDB records), and is therefore within the "defined foraging area" for this species (CDFG 1994).

Western Burrowing Owl

Western burrowing owl (*Athene cunicularia hypugaea*) is a California species of special concern. Its nest, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, and §3800). The burrowing owl is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13).

Burrowing owl habitat can be found in annual and perennial grasslands, characterized by low-growing vegetation. Typically, the burrowing owl utilizes rodent burrows, usually ground squirrel burrows, for nesting and cover. They may also on occasion dig their own burrows, or use man-made objects such as concrete culverts or riprap piles for cover. They exhibit high site fidelity, reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of a pair of burrowing owls during the spring and summer months or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (white wash) at or near a burrow. Grazed grasslands seem to be their preferred habitat because it allows them an unobstructed 360 degree view of their environment.

There is a record for this species within the project area (Occurrence No. 876)~~The nearest reported occurrence of burrowing owl is approximately 3.3 miles southeast of the project area (CNDDB Occurrence No. 812).~~ Burrowing owls were observed at several locations within the project area in 2006 and 2007.

Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is a California "species of special concern." It is also protected under the federal Migratory Bird Treaty Act and California Fish and Game Code (§3503 and 3800) that protects birds, their nests, eggs, and young. This small, predaceous bird of open and often arid habitats prefers areas with scattered shrubs, trees, posts, fences, utility lines, and other acceptable perching locations. This shrike preys mostly upon large insects, but also takes small birds, mammals, amphibians, reptiles, fish, carrion, and various invertebrates. It typically constructs a stick nest on a stable branch in a densely foliated tree or shrub. Blackberry (*Rubus* spp.), rose (*Rosa* spp.) and willows (*Salix* spp.) provide nest sites. Site selection is apparently based on the degree of protective cover rather than on a particular plant species (Shuford 1993). Although nest height varies from 1.5 to 30 feet above ground, it is rarely less than three feet (Shuford 1993).

A loggerhead shrike was observed foraging in the project area during our wildlife surveys conducted in 2006. Trees in the project area provide suitable nesting habitat for this species.

Tricolored Blackbird

Tricolored blackbird (*Agelaius tricolor*) is a state "species of special concern." Active nests, eggs, and young are also protected pursuant to Fish and Game Code §3503. A gregarious species, the tricolored blackbird is typically found near freshwater, particularly near marsh habitat. Nesting colonies are typically found in stands of cattail and bulrush (*Scirpus* spp.), although they are also known to utilize blackberry patches and thistle clumps (*Cirsium* spp. and *Cynara* spp.) adjacent to water. Flooded lands, margins of ponds, and grassy fields in summer and winter provide typical foraging habitat for this species.

The closest record for this species is located 1.3 miles southwest of the project area (CNDDB Occurrence No. 23). This species likely forages in the project area and marginal nesting habitat occurs in the cattails and bulrushes in the open water ponds in the project area. Nesting season surveys conducted in 2007 did not identify this species were nesting within the project area.

San Joaquin Kit Fox

The San Joaquin kit fox (*Vulpes macrotis mutica*) is a federally listed endangered species and a California listed threatened species. This species' distribution is primarily limited to the San Joaquin Valley and adjacent regions. Because of the endangered/threatened status of this fox species, all proposed projects within the current and/or historic range of the kit fox must address potential impacts to this species.

The San Joaquin kit fox is the smallest fox species in North America, typically weighing between four and six pounds. It has large ears, long legs, and is generally a buffy tan color with a black-tipped tail. Kit fox live primarily in the lowlands of the San Joaquin Valley of California, but are also known to occur in several counties in the coast mountain ranges including Santa Barbara, San Luis Obispo, Monterey, San Benito, Santa Clara, Contra Costa and Alameda Counties.

This fox species is usually found in open grassland and shrubland communities, but has also been observed in orchards that border grassland or shrub plant communities. Kit fox are carnivorous, usually feeding on small rodents such as San Joaquin pocket mice (Perognathus inornatus), deer mice, western harvest mice, kangaroo rats (Dipodomys spp.) and larger rodents such as California ground squirrel (Spermophilus beechyi). Kit fox also prey upon lagomorphs such as black-tailed hare and desert cottontail (Sylvilagus audubonii). It relies on dens for breeding, and to provide escape cover from potential predators. Dens are excavated in loose-textured soils, generally in areas with low to moderate relief, or they will utilize holes left by other species. They will utilize burrows dug by rabbits, ground squirrels, and on occasion, badgers (Taxidea taxus). Man-made structures, such as well casings, culverts, and abandoned pipelines, are also occasionally used for dens. Typically, dens are small enough to discourage easy predation by coyotes. Populations of kit fox are thought to be related to the availability of denning sites, particularly natal denning sites, which are often moved several times throughout the season.

There are four known records for kit fox in the project vicinity (CNDDB Occurrence Numbers 18, 23, 26, & 30). The majority of the records of kit fox were found in or near canals or dry creeks. The closest record (CNDDB Occurrence Number 23) was sited in 1999 along the Livingston Canal in Atwater, approximately 1.7 miles northwest of the project area. The remaining records in the project vicinity (CNDDB Occurrence Numbers 18, 26 and 30) were recorded between 1986 and 2001 and are located 6.8 to 7.0 miles from the project area.

Although there are suitable kit fox habitats in the project area, these habitats are surrounded by highly manipulated land that, in most cases, is under agricultural practices. The network of canals within the project area provide a potential migration corridor between ruderal and grassland habitats in the area, and the irrigated pastures, horse pastures, and rotational crops such as hay or corn provide marginal foraging habitats. Permanent crops (strawberry), orchards, and urban areas provide low quality habitats for this species of fox.

No active, known, or possible kit fox dens were found during the surveys conducted in the project area. No kit fox were photographed or seen at the camera stations or on the spotlighting surveys, and no kit fox tracks were found at the track stations. Finally, canid scat collected during surveys were sent to the Smithsonian Institute for species determination, who determined that scat collected were not from kit fox.

Based on the results of the protocol survey conducted for this project, it is believed that kit fox ~~are~~ **do** not ~~located~~ **reside** within the project area. The extent of land manipulation and high degree of disturbance due to agricultural practices such as tilling and crop planting (corn and strawberry) reduces the value of the project area for kit fox, and thus their use of the project area less likely. However, the various large irrigation canals and creeks that bisect portions of the project area could provide marginal habitat that could be used as migration corridors by this kit fox when moving between ruderal and grassland habitats in the area. The USFWS will require mitigation for impacts to high and medium quality potential San Joaquin kit fox habitat.

4.11.3 REGULATORY SETTING

This section provides a discussion of laws and regulations that are in place to protect native wildlife, fish, and plants.

Federal Endangered Species Act

The primary focus of FESA of 1973 is that all federal agencies must seek to conserve threatened and endangered species through their actions. FESA contains three key sections. Section 4 (16 USCA §1533) outlines the procedure for listing endangered plants and wildlife. Section 7 (§1536) imposes limits on the actions of federal agencies that might impact listed species. Section 9 (§1538) prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies. In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS). The USFWS enforces all other cases. Below, Sections 7, 9, and 10 of FESA are discussed since they are the sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3).

Section 9 applies not only to federal agencies but also to any local or State agency, and to any individual. If "take" of a listed species is necessary to complete an otherwise lawful activity, this triggers the need for consultation under Section 7 of FESA (for Federal agencies and projects with a federal "nexus" (that is, an authorized, funded or carried out by a federal agency)), or requires preparation of a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA (for state and local agencies, or individuals, and projects without a federal "nexus").

Section 7(a)(2) of the Act requires that each Federal agency shall, in consultation with and with the assistance of the USFWS, insure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat. Critical habitat identifies specific areas, both occupied and unoccupied, that are essential to the conservation of a listed species and that may require special management considerations or protection.

Federal actions include permitting, funding, and entitlements for both federal projects, as well as private projects facilitated by federal actions (for example, a private landowner applying to the Corps for a permit). If an endangered species could be harmed by a proposed project, USFWS has to be in complete concurrence with the proposed avoidance and mitigation plan. Otherwise, the project sponsor would have to submit a revised mitigation plan that provides greater protection for the species.

In the 1982 amendments to FESA, Congress established a provision in Section 10 that allows for the "incidental take" of endangered and threatened species of wildlife by non-federal entities (for example, project applicants, state and local agencies). "Incidental take" is defined by FESA as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." Under Section 10 of FESA, the applicant for an "incidental take permit" is required to submit a "conservation plan" to USFWS or NMFS that specifies, among other things, the impacts that are likely to result from the taking, and the measures the permit applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps.

Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Executive Order 13186 for conservation of migratory birds (January 11, 2001) requires that any project with federal involvement address impacts of federal actions on migratory birds. The order is designed to assist federal agencies in their efforts to comply with the MBTA and does not constitute any legal authorization to

take migratory birds. The order also requires federal agencies to work with the USFWS to develop a memorandum of understanding (MOU). Protocols developed under the MOU must promote the conservation of migratory bird populations through the following means:

- avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- restore and enhance habitat of migratory birds, as practicable; and prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

State Endangered Species Act

SECTION 2081 OF THE STATE ENDANGERED SPECIES ACT

In 1984, the state legislated the California Endangered Species Act (CESA) (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would jeopardize threatened or endangered species if reasonable and prudent alternatives are available.

CESA requires that all state lead agencies (as defined under CEQA) conduct an endangered species consultation with CDFG if their actions could affect a state listed species. The state lead agency and/or project applicants must provide information to CDFG on the project and its likely impacts. CDFG must then prepare written findings on whether the proposed action would jeopardize a listed species would result in the direct take of a listed species. Because CESA does not have a provision for "harm" (see discussion of FESA, above), CDFG considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If CDFG determines that a proposed project could impact a State listed threatened or endangered species, CDFG will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be threatened or endangered species impacts, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental take" permits from CDFG and/or USFWS (if it is a Federal listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State listed species, an "incidental take" permit pursuant to §2081 of the Fish and Game Code would be necessary (versus a Federal incidental take permit for Federal listed species). CDFG will issue an incidental take permit only if:

- The authorized take is incidental to an otherwise lawful activity;
- the impacts of the authorized take are minimized and fully mitigated;

- the measures required to minimize and fully mitigate the impacts of the authorized take:

  a. are roughly proportional in extent to the impact of the taking on the species;

  b. maintain the project applicant's objectives to the greatest extent possible; and,

  c. capable of successful implementation; and,

- adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take." These species are listed in several statutes that identify "fully protected" species and "specified birds." (See Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517.) If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the project to avoid all take.

APPLICABLE CEQA REGULATIONS

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. "Rare" species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will "substantially affect a rare or endangered species of animal or plant or the habitat of the species." The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

CALIFORNIA FISH AND GAME CODE §§ 3503, 3503.5, 3511, 3800

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, "fully protected" birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

PROTECTED AMPHIBIANS

Under Title 14 of the California Code of Regulations (CCR 14, Division 1, Subdivision 1, Chapter 5, §41. Protected Amphibians), protected amphibians, such as the California tiger salamander may only be taken

under special permit from California Department of Fish and Game issued pursuant to Sections 650 and 670.7 of these regulations.

REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND THE STATE OF CALIFORNIA

This section presents an overview of the criteria used by the U.S. Army Corps of Engineers, the California Regional Water Quality Control Board, the State Water Resources Control Board, and CDFG to determine those areas within a project area that would be subject to their regulation.

U.S. Army Corps of Engineers Jurisdiction and General Permitting

Section 404 of the Clean Water Act

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States. In the Federal Register "waters of the United States" are defined as, "...all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce..." (33 CFR Section 328.3).

Limits of Corps' jurisdiction.

1. **Territorial Seas.** The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles. (See 33 CFR 329.12)

Tidal Waters of the United States. The landward limits of jurisdiction in tidal waters:

a. Extends to the high tide line, or

b. When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.

Non-Tidal Waters of the United States. The limits of jurisdiction in non-tidal waters:

c. In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or

d. When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.

e. When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams, extends to the upward limit of the ordinary high water mark (OHWM) or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil;

destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]). Wetlands are defined as "...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions" (33 CFR Section 328.8 [b]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded) to be regulated by the Corps pursuant to Section 404 of the Clean Water Act.

It should be noted that the extent of the Corps jurisdiction pursuant to Section 404 of the Clean Water Act was recently modified. In Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, the U.S. Supreme Court [148 L. Ed. 2d 576 (2001) (SWANCC)] ruled that the Corps exceeded its authority under the Clean Water Act when it regulated discharges of fill material into "isolated" waters used as habitat by migratory birds. Accordingly, waters (including wetlands) that are not connected hydrologically to navigable waters may now not be subject to regulation by the Corps.

A recent Supreme Court decision may also significantly change how the Corps defines waters of the United States. On June 19, 2006 the United States Supreme Court addressed the extent of Clean Water Act jurisdiction over wetlands adjacent to tributaries of navigable waters. The extent to which the decision will further restrict federal regulation of wetlands remains unclear. In two consolidated cases, *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers*, the Court issued a plurality opinion that would significantly narrow the reach of federal wetlands jurisdiction. The Court concluded that the appropriate test for jurisdiction over wetlands was the presence of a "significant nexus" between wetlands and "navigable waters" in the traditional sense. The Court did not provide specific guidance about the extent of federal jurisdiction over wetlands that are adjacent to tributaries of navigable waters. The decision text indicates that a significant nexus exists when a wetland, "either alone or in combination with similarly situated lands in the region, significantly affect[s] the chemical, physical, and biological integrity" of factually navigable waters. Under Supreme Court precedent, wetlands adjacent to navigable waters meet this test. For wetlands located near *tributaries* of navigable waters, however, each wetland demands a case-by-case jurisdictional inquiry. A "mere hydrological connection" is not enough in all cases, and that "speculative or insubstantial" effects on water quality will not suffice to satisfy the test.

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging or otherwise impacting "waters of the United States". Pursuant to Section 404 of the Clean Water Act, the Corps normally provides two alternatives for permitting impacts to the type of "waters of the United States" found in the project area. The first alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an Individual Permit (33 CFR Section 235.5(2)(b)). The application process for Individual Permits is extensive and includes public interest review procedures (i.e., public notice and receipt of public comments) and must contain an "alternatives analysis" that is prepared pursuant to Section 404(b) of the Clean Water Act (33 U.S.C. 1344(b)). The alternatives analysis is also typically reviewed by the federal Environmental Protect Agency (EPA), and thus brings another resource agency into the permitting framework. Both the Corps and EPA take the initial viewpoint that there are practical alternatives to the proposed project if there would be impacts to waters of the U.S., and the proposed permitted action is not a water dependent project (e.g. a pier or a dredging project). Alternative analyses therefore must provide convincing reasons that the

proposed permitted impacts are unavoidable. Individual Permits may be available for use in the event that discharges into regulated waters fail to meet conditions of NWP(s).

NWPs are a type of general permit administered by the Corps and issued on a nationwide basis that authorize minor activities that affect Corps regulated waters. Under NWP, if certain conditions are met, the specified activities can take place without the need for an individual or regional permit from the Corps (33 CFR, Section 235.5[c][2]). In order to use NWP(s), a project must meet 27 general nationwide permit conditions, and all specific conditions pertaining to the NWP being used (as presented at 33 CFR Section 330, Appendices A and C). It is also important to note that pursuant to 33 CFR Section 330.4(e), there may be special regional conditions or modifications to NWPs that could have relevance to individual proposed projects. Finally, pursuant to 33 CFR Section 330.6(a), Nationwide permittees may, and in some cases must, request from the Corps confirmation that an activity complies with the terms and conditions of the NWP intended for use (*i.e.*, must receive "verification" from the Corps).

Prior to finalizing design plans, the applicant needs to be aware that the Corps maintains a policy of "no net loss" of wetlands (waters of the United States) from project area development. Therefore, it is incumbent upon applicants that propose to impact Corps regulated areas to submit a mitigation plan that demonstrates that impacted regulated areas would be recreated (*i.e.*, impacts would be mitigated). Typically, the Corps requires mitigation to be "in-kind" (i.e., if a stream channel would be filled, mitigation would include replacing it with a new stream channel), and at a minimum of a 1:1 replacement ratio (i.e., one acre or fraction there of recreated for each acre or fraction thereof lost). As an option, there are many Corps approved wetland mitigation banks where wetland mitigation credits can be purchased by applicants to meet permitting requirements. Mitigation banks have limited distribution and the Corps typically only allows their use when projects have minimal affects on wetlands.

Rivers and Harbors Act

Under Section 10 of the Rivers and Harbors Act, the Corps has jurisdiction over navigable waters of the U.S. to the historic limit of mean high water. Section 10 requires that a permit be obtained from the Corps for all activities in navigable waters that involve excavating, filling, dredging, construction or placement of an obstruction in or to a navigable water body. Section 10 jurisdiction extends to the entire surface and bed of all water bodies subject to tidal action (33 CFR 329.12[b]).

STATE WATER RESOURCES CONTROL BOARD (SWRCB) / CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)

Section 401 of the Clean Water Act

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers permitting programs that authorize impacts to waters of the United States, including wetlands, and other waters, any Corps permit authorized for a proposed project would be invalid unless it is a NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification or waiver of water quality. Certification of NWPs requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the issued NWP (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the California

Environmental Quality Act, the California Endangered Species Act, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification or waiver of water quality. The RWQCB has also adopted the Corps' policy that there shall be "no net loss" of wetlands. Thus, prior to certifying water quality, the RWQCB will impose avoidance mitigation requirements on project proponents that impact waters of the State.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the State to file a report of discharge" with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). It should be noted that pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB also regulates "isolated wetlands," or those wetlands considered to be outside of the Corps' jurisdiction pursuant to the SWANCC decision (see Corps Section above).

The RWQCB generally considers filling in waters of the State to constitute "pollution." Pollution is defined as an alteration of the quality of the waters of the state by waste that unreasonably affects its beneficial uses (Water Code §13050(1)). The RWQCB litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any "threat" to water quality.

National Pollutant Discharge Elimination System (NPDES)

In 1972 the Clean Water Act was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p) which establishes a framework for regulating municipal and industrial storm water discharges under the NPDES Program. On November 16, 1990, the U.S. Environmental Protection Agency (USEPA) published final regulations that establish storm water permit application requirements for specified categories of industries. The regulations provide that discharges of storm water to waters of the United States from construction projects that encompass five (5) or more acres of soil disturbance are effectively prohibited unless the discharge is in compliance with an NPDES Permit. Regulations (Phase II Rule) that became final on December 8, 1999 expand the existing NPDES program to address storm water discharges from construction sites that disturb land equal to or greater than one (1) acre.

While federal regulations allow two permitting options for storm water discharges (individual permits and General Permits), the SWRCB has elected to adopt only one statewide General Permit at this time that will apply to all storm water discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (CalTrans). Construction on Tribal Lands is regulated by an USEPA permit, the Lahonton Regional Water Control Board adopted a separate NPDES permit for the Lake Tahoe Hydrologic Unit, and the SWRCB adopted a separate NPDES permit for CalTrans projects. This General Permit requires all dischargers where construction activity disturbs one acre or more to:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting storm water and with the intent of keeping all products of erosion from moving off site into receiving waters.
2. Eliminate or reduce non-storm water discharges to storm sewer systems and other waters of the nation.
3. Perform inspections of all BMPs.

This General Permit is implemented and enforced by the nine California Regional Water Quality Control Boards (RWQCBs).

The General Permit regulates storm water runoff from construction sites. Regulating many storm water discharges under one permit will greatly reduce the otherwise overwhelming administrative burden associated with permitting individual storm water discharges. Dischargers shall submit a Notice of Intent (NOI) to obtain coverage under this General Permit. It is expected that as the storm water program develops, the RWQCBs may issue General Permits or individual permits containing more specific permit provisions. When this occurs, those dischargers will no longer be regulated by this General Permit.

Types of Construction Activity Covered by the General Permit

Construction activity subject to this General Permit includes clearing, grading, and disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre of total land area. Construction activity that results in soil disturbances of less than one acre is subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses one or more acres of soil disturbance or if there is significant water quality impairment resulting from the activity. Construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility, nor does it include emergency construction activities required to protect public health and safety. Dischargers should confirm with the local RWQCB whether or not a particular routine maintenance activity is subject to this General Permit.

CALIFORNIA DEPARTMENT OF FISH AND GAME PROTECTIONS

Section 1602 of California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code, California Department of Fish and Game (CDFG) regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream, which CDFG typically considers to include riparian vegetation. Any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, would require entering into a Streambed Alteration Agreement (SBAA) with CDFG prior to commencing work in the stream. However, prior to authorizing such permits, CDFG typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

4.11.4 SIGNIFICANCE CRITERIA

PLANTS, WILDLIFE, WATERS

In accordance with Appendix G (Environmental Checklist Form) of the CEQA Guidelines, implementing the project would have a significant biological impact if it 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 California Department of Fish and Game or U.S. Fish and Wildlife Service.

- 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.

- 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.

- 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.

WATERS OF THE UNITED STATES AND STATE OF CALIFORNIA

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into waters of the United States, which includes wetlands, as discussed in the bulleted item above, and also includes "other waters" (stream channels, rivers) (33 CFR Parts 328 through 330). Substantial impacts to Corps regulated areas on a project site would be considered a significant adverse impact. Similarly, pursuant to Section 401 of the Clean Water Act, and to the Porter-Cologne Water Quality Control Act, the RWQCB regulates impacts to waters of the state. Thus, substantial impacts to RWQCB regulated areas within the project area would also be considered a significant adverse impact.

STREAM CHANNELS

Pursuant to Section 1602 of the California Fish and Game Code, CDFG regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which CDFG

typically considers to include riparian vegetation. Any proposed activity that would result in substantial modifications to a natural stream channel would be considered a significant adverse impact.

4.11.5 IMPACTS AND MITIGATIONS

Significant Impacts

Impact BIO-1: Impacts to Habitat of Sensitive Species, Including Listed and Candidate Species

Impact BIO-1a: Giant Garter Snake

While impacts to giant garter snake are regarded as less than significant, avoidance measures shall be implemented by the project sponsor to ensure that this snake would not be impacted by the proposed project. The giant garter snake is a federal and state listed threatened species. There are no contemporary records of giant garter snake reported in the region of the project area. The closest known record for giant garter snake was collected in 1908 almost 100 years ago. Accordingly, it is thought that giant garter snakes do not occur within the project area.

Mitigation Measure BIO-1a: Avoidance Measures for Giant Garter Snake

Although there are no modern records for giant garter snakes in Black Rascal Creek or Canal Creek, these creeks provide suitable habitat conditions for this snake. Thus, to ensure that there would be no impacts to this snake during any dewatering activities related to creek realignment and/or construction of road crossings, avoidance measures shall be implemented when construction would be within 200 feet of Black Rascal Creek or Canal Creek. The avoidance and minimization measures are detailed in the *Guidelines for Procedures and Timing of Activities Related to the Modification or Relocation of Giant Garter Snake Canal or Stream Habitat* and the USFWS *Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat* (USFWS 1999). In addition, if a giant garter snake is found in the work area, the USFWS shall be notified and the snake will be relocated within the same waterbody, outside of the area of effect.

Impact BIO-1b: Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

The vernal pool fairy shrimp, a federally listed threatened species, has been identified in seasonal wetland habitats along Bellevue Road within the project area. Vernal pool tadpole shrimp, a federally listed threatened species, has potential to occur in seasonal wetland habitats along Bellevue Road within the project area. **MCAG re-designed the alignment of the expressway project along Bellevue specifically to avoid/minimize direct impacts to the fairy shrimp habitats that were identified along Bellevue Road. The new expressway will be constructed to the north of Bellevue Road, leaving Bellevue Road as a frontage road. Consequently, none of the pools where vernal pool fairy shrimp were found will be impacted by the proposed project. The existing Merced Irrigation District (MID) irrigation ditch that parallels Bellevue Road to the north will also be preserved. Therefore, any stormwater drainage from the new roadway surface would not be able to cross through the preserved irrigation ditch or**

over Bellevue Road to affect the hydrology of the pools that support vernal pool fairy shrimp located south of Bellevue Road. Consequently, the proposed alignment of the expressway completely avoids any direct or indirect impact to suitable vernal pool habitats including those pools confirmed to support vernal pool fairy shrimp. ~~The current alignment(s) of the proposed expressway along Bellevue Road have been designed to avoid direct and indirect impacts to 3.71 acres of the 3.87 acres of vernal pool habitats identified within the project area. Therefore, the current alignment(s) of the proposed expressway along Bellevue would only result in direct impacts to 0.16 acre of vernal pool habitat. Impacts to vernal pool habitat from the proposed project would be a significant impact pursuant to CEQA.~~

Mitigation Measure BIO-1b: Mitigation for Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Mitigation for impacts to vernal pool fairy shrimp (or vernal pool tadpole shrimp) habitat is not be required for this project.

~~In order to offset the project's impact to 0.16 acre of vernal pool habitat in the current alignment(s) of the proposed expressway along Bellevue, the project sponsor is proposing to purchase mitigation credits at the Great Valley Conservation Bank located in Merced (or other USFWS-approved mitigation bank that may be available for use at the time of project construction). This USFWS-approved mitigation bank sells vernal pool preservation credits for applicants that are required to mitigate impacts to vernal pool fairy shrimp and vernal pool tadpole shrimp.~~

~~The USFWS has indicated that the project will be required to implement the mitigation ratios that are specified the 1996 Programmatic Consultation for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans Within the Jurisdiction of the Sacramento Field Office, California. This Programmatic specifies that for every acre (or portion thereof) of habitat that is directly affected, at least two vernal pool preservation credits will be required, and for every acre (or portion thereof) of habitat that is directly affected, at least one vernal pool creation credits will be required. Since there are no creation credits available at any mitigation bank in Merced County, it is likely that the USFWS will require the applicant to purchase at least three preservation credits (3:1 mitigation ratio). The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project and will be included in the Final EIR. Once the mitigation ratio is determined, the project sponsor shall purchase mitigation credits for any impacts. Prior to impacting the vernal pool habitat, an "incidental take" permit (Section 7 consultation) would be required from USFWS.~~

~~Significance after Mitigation: Less than significant.~~

Impact BIO-1c: Hardhead

Hardhead are a California species of special concern. Suitable habitat for the hardhead is present in Black Rascal Creek and Canal Creek. The proposed project, as currently designed, will result in direct impacts to these creeks that could directly and indirectly impact hardhead. Hardhead could also be impacted during any dewatering activities related to creek realignment and/or construction of road crossings. **Impacts to hardhead in Black Rascal Creek and Canal Creek would be considered a potentially significant impact.**

Mitigation Measure BIO-1c: Mitigation for Hardhead

If partial or total dewatering of Black Rascal Creek or Canal Creek is required, a dewatering plan would be reviewed and monitored by a qualified biologist. The dewatering plan will be designed to reduce impacts to hardhead to the greatest extent practicable. Appropriate measures, including the use of mesh screens, seine and dip-nets, will be implemented to salvage and otherwise reduce mortality to this species during active dewatering. Additionally, turbidity barriers will be installed in the work areas within the channels to prevent impacts to water quality downstream. Finally, a biological monitor will be present during all dewatering activities. The biological monitor will capture all native fish species including hardhead and relocate to undisturbed habitat within the same watercourse. This activity will be conducted in consultation and as approved by CDFG.

Significance after Mitigation: **Less than significant.**

Impact BIO-1d: California Tiger Salamander

The California tiger salamander, a federally listed threatened species, was not identified during protocol surveys conducted in 2006-2007. Regardless, USFWS considers the protocol survey effort invalid owing to drought like condition in the winter of 2006/07. ~~Similarly, as there was almost no rainfall that winter, not all potential breeding ponds/pools hydrated and thus larval surveys in 2007 were not conducted.~~ Therefore, technically the protocol survey can not be used to demonstrate absence of CTS in the project area. Accordingly, USFWS still regards portions of the project area to be suitable habitat for the California tiger salamander. Therefore, impacts to California tiger salamander must be regarded as potentially significant pursuant to CEQA.

The proposed road alignment for this expressway project has been redesigned in order to avoid direct impacts to potential CTS breeding habitats to the greatest extent possible. A large pond that was partially impacted by the originally proposed road alignment of Belcher Road was modified to avoid this feature to the greatest extent possible. Minimal impacts to a small section of the northern portion of this pond are unavoidable, since the new alignment of Belcher Road plans to avoid the two residences and the new small business building that are located just north of the proposed new alignment of Belcher Road. In total, the proposed project will result in direct impacts to a portion of the large pond (0.23-acre) and to two small detention basin located just north of Bellevue Road (0.69-acre). Therefore, the total direct impact to potential CTS breeding habitat will be 0.92-acre; both Alignment 1A and 1B will result in the same extent of impact these features. All potential breeding habitats are surrounded by highly manipulated areas and therefore the value of surrounding habitats as estivation/over-summering habitat is very low.

In order to determine the extent of project-related impacts to potential CTS upland estivation/over-summering habitat, all upland areas within the project area as classified as either providing "suitable" or "unsuitable" CTS over-summering habitat. Areas classified as "suitable" upland over-summering habitat include grazed grassland areas, ruderal areas, and horse pastures. Areas considered to be "unsuitable" over-summering habitat include irrigated pastures, and other areas that are highly manipulated such as permanent crops (strawberry fields), rotational crops (corn and hay crops subject to frequent discing), and urban areas (existing roads, front yards and houses/buildings).

In addition, permanent and temporary impacts to CTS "suitable" upland estivation/over-summering habitats were calculated. Permanently impacted areas included the footprint of the actual roadway and the grading required for the shoulders along the roadway. Areas regarded as "temporarily impacted areas" included a 50-foot set-back area along either side of each alignment. Based on discussions with the project engineers it was determined that a 50-foot area along either side of the road would be sufficient to accommodate construction equipment, storage and staging areas necessary to construct the new expressway. It is assumed that these areas would be restored to pre-existing conditions following the completion of the expressway project.

Alignment 1A would result in permanent impacts to 10.4 acres of grazed grassland, ruderal, or horse pasture that would be considered to provide "suitable" upland estivation/over-summering CTS habitat. The remaining upland areas that would be permanently impacted by Alternative 1A include irrigated pastures, orchards, permanent crops, or rotational crops areas that are not considered to provide suitable upland estivation/over-summering CTS habitat. In addition, Alternative 1A would result in temporary impacts to 9.2 acres of "suitable" upland estivation/over-summering CTS habitat.

Construction of Modified Alternative 1B would result in impacts to 35.5 acres of habitats that are considered to provide "suitable" CTS upland estivation/over-summering habitat. The remaining upland areas would not be considered to provide suitable upland estivation/over-summering habitat. In addition, Modified Alternative 1B would result in temporary impacts to 11.9 acres of "suitable" upland estivation/over-summering CTS habitat. Impacts to potential upland estivation/over-summering California tiger salamander habitat along either alignment would be regarded as potentially significant pursuant to CEQA.

Mitigation Measure BIO-1d: Mitigation for California Tiger Salamander

In order to offset the project's impact to potential California tiger salamander breeding habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation banks that may be available for use at the time of project construction). It is likely that the USFWS will require the applicant to purchase at least three preservation credits for every acre (or portion thereof) of **potential** breeding habitat impacted by the project (3:1 mitigation ratio). The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project ~~and will be included in the Final EIR~~. ~~Once the mitigation ratio is determined~~, **Prior to project implementation,** the project sponsor shall purchase mitigation credits for any impacts. ~~This mitigation is not in addition to mitigation requirements for vernal pool fairy shrimp, vernal pool tadpole shrimp and spadefoot toad, rather can be combined with any requirement for these species, the greater acreage requirement for any single species being the dominant requirement.~~

In addition, the USFWS has approved use of the Great Valley Conservation Bank at Flynn Ranch in Merced to jointly mitigate for impacts to California tiger salamander upland estivation/over-summering habitat and San Joaquin kit fox habitat. It is likely that the USFWS will require a 3:1 mitigation ratio for permanent impacts to "suitable" CTS upland estivation/over-summering habitats, and a 1.1: 1 mitigation ratio for temporary impacts to "suitable" CTS upland estivation/over-summering habitats. ~~the applicant to purchase at least~~

~~three mitigation credits for every acre (or portion thereof) of upland estivation/ over-summering habitat impacted by the project (3:1 mitigation ratio).~~ **Once the final alignment is determined, the project sponsor shall purchase the appropriate number of mitigation credits for any impacts.**

The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project ~~and will be included in the Final EIR~~. This mitigation is not in addition to mitigation requirements for San Joaquin kit fox, rather can be combined with any requirement for these species, the greater acreage requirement for any single species being the dominant requirement.

Prior to impacting potential California tiger salamander habitats, an "incidental take" permit (Section 7 consultation) would be required from USFWS. The US Army Corps of Engineers would be the Section 7 federal nexus agency for this project.

Significance after Mitigation: **Less than significant.**

Impact BIO-1e: Western Spadefoot Toad

The western spadefoot toad is a California species of special concern that was identified in the project area. The current alignment(s) of the proposed expressway project along Bellevue Road will result in impacts ~~0.68-~~ **0.69-**acre of potential breeding habitat for western spadefoot toad. Impacts to western spadefoot toad **potential breeding habitat** from the proposed project would be a **potentially** significant impact pursuant to CEQA.

Mitigation Measure BIO-1e: Mitigation for Western Spadefoot Toad

Western spadefoot toads are known to occur at both the Vieira-Sandy Mush Conservation Bank located in Merced and the Great Valley Conservation Bank at Flynn Ranch in Merced. Consequently, it is likely that mitigation credits purchased at either of these mitigation banks to compensate for impacts to ~~vernal pool fairy shrimp, vernal pool tadpole shrimp and~~ potential California tiger salamander breeding habitat would also mitigate the proposed project's impact on potential breeding habitat for the western spadefoot toad. Mitigation credits that are purchased shall be based upon a minimum of a 1:1 compensation to impacts ratio for impacts to 0.69-acre of potential breeding habitat for western spadefoot toad. As this mitigation is not in addition to mitigation requirements for California tiger salamander ~~and vernal pool fairy shrimp~~, provided that a minimum of 0.69 acre of compensation credits are purchased in total for the proposed project, impacts to western spadefoot toad would be regarded as less than significant. Impacts to potential breeding habitat for the western spadefoot toad will be conducted in consultation and as approved by CDFG.

Significance after Mitigation: **Less than significant.**

Impact BIO-1f: Pacific Pond Turtle

The Pacific pond turtle is a California species of special concern that is known to occur in the project area. Pacific pond turtles were observed in several of the large irrigation canals and ditches within the project area. Alternative 1A of the expressway project would impact 2.19 acres of aquatic habitat occupied by this species, and Alternative 1B would impacts ~~5.43~~ **6.9** acres of aquatic habitat occupied by this species. The proposed

project may also impact potentially occupied upland burrowing habitat. Impacts to individual Pacific pond turtles would be regarded as a significant impact pursuant to CEQA.

Mitigation Measure BIO-1f: Mitigation for Pacific Pond Turtle

Turbidity barriers that will be installed around the construction areas in Black Rascal Creek or Canal Creek will reduce impacts to pond turtles that may occur downstream. All Pacific pond turtles encountered during dewatering or other activities in the creeks would be salvaged, per CDFG approval, and relocated to preserved off-site habitats.

The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the Pacific pond turtle. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied aquatic habitat and upland nesting habitat within the final project alignment could be impacted by the proposed project. Since avoidance of all potentially occupied habitat is not possible, mitigation would include conducting preconstruction surveys for Pacific pond turtle and avoidance of nest sites. Preconstruction surveys for turtles and their nests shall be conducted 30 days prior to any construction in or surrounding any large primary irrigation canals, creeks, Black Rascal Creek or Canal Creek. If nest sites are located adjacent to a proposed work area, the nest site plus a 50-foot buffer around the nest site shall be fenced to avoid impacts to the eggs or hatchlings which over-winter at the nest site. In addition, if nest(s) are located during surveys, moth balls (naphthalene) should be sprinkled around the vicinity of the nest (no closer than 10 feet) to mask human scent and discourage predators.

Construction at the nest site and within the 50-foot buffer area shall be delayed until the young leave the nest (this could be a period of many months) or as otherwise advised and directed by CDFG, the agency responsible for overseeing the protection of the pond turtle. If CDFG allows translocation of any nestling pond turtles this shall be completed by a qualified biologist under the direction of CDFG. While the measures prescribed above would reduce the impacts to Pacific pond turtles to a level regarded as less than significant pursuant to the CEQA, CDFG may also require mitigation for any impacts to the turtle's habitat following completion of nesting. Any CDFG requirements would become conditions of the project that shall be implemented by the project sponsor. This mitigation is typically at a 1:1 mitigation ratio, or as otherwise determined by CDFG. Mitigation credits shall be purchased from a qualified mitigation bank if required by CDFG. This mitigation measure would reduce impacts to a level regarded as less than significant.

Significance after Mitigation: **Less than significant.**

Impact BIO-1g: Nesting Raptors

Suitable nesting habitats for white-tailed kite, northern harrier, Cooper's hawk, red-tailed hawk, red shouldered hawk, Swainson's hawk, western burrowing owl, barn owl, and great horned owl all have been observed within the proposed project area **and it is likely that many of these species** nest within the project area. Nesting surveys conducted for these species in 2007 identified that red-tailed hawks and red shouldered hawks nest within the project area. Since all of these species are mobile and often change nest sites from year to year, these raptors could nest within the project area or within a zone of influence of the project in the

future. All raptors (that is, birds of prey) are also protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their nests, eggs, and young are protected under California Fish and Game Codes Sections 3503, 3503.5. The white-tailed kite is fully protected under the California Fish and Game Code (3511).

Impacts to nesting raptors are regarded as potentially significant pursuant to CEQA. Potential impacts to these species from the proposed project could include ~~loss of nesting habitat,~~ disturbance to nesting birds, and possibly death of adults and/or young. Impacts to unoccupied nesting habitats for these species would not be considered significant as there are other local and regional nesting habitats available for use by these species that could be used in subsequent nesting seasons.

Since the Swainson's hawk is a state listed species it is discussed in separate impact and mitigation sections below. Similarly, since the western burrowing owl is a California species of special concern that has formal CDFG mitigation requirements, it too is discussed in sections below.

Mitigation Measure BIO-1g: Mitigation for Nesting Raptors

Nesting surveys shall be conducted in the spring of the year prior to construction of the project and, if construction would commence between March 1 and September 1, again 30 days prior to construction of the project. The raptor nesting surveys shall include examination of all trees **and shrubs within the project area and trees and shrubs** within sphere of influence of the proposed project.

If nesting raptors are identified during the surveys, the dripline of the nest tree or shrub must be fenced with orange construction fencing. ~~Similarly~~, **In addition,** a 300-foot radius buffer must be fenced with orange construction fencing where this buffer intersects the expressway alignment work areas. This 300-foot buffer may be reduced if a qualified raptor biologist determines that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. At a minimum, however, the non-disturbance buffer shall be a radius of 100 feet around the nest tree or shrub. If the nest site is on an adjacent property, the portion of the buffer that occurs on the project site shall be fenced with orange construction fencing.

When construction buffers are reduced from the 300 foot radius, a qualified raptor biologist shall monitor distress levels of the nesting birds for one week after project disturbance occurs. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the raptor biologist shall have the right to re-implement the full 300-foot buffer. Instances when the buffer could be reduced in size would be if the raptors were well acclimated to disturbance and/or if there were physical barriers between the nest site and the construction project that would reduce disturbance to the nesting raptors. No construction or earth-moving activity should occur within the non-disturbance buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1. Regardless, the resource agencies consider September 1 the end of the nesting period unless otherwise determined by a qualified raptor biologist. Once the raptors have completed the nesting cycle, that is the young have reached independence of the nest, no further regard for the nest site shall be required. No other compensatory mitigation is required.

Significance after Mitigation: **Less than significant.**

Impact BIO-1h: Swainson's Hawk

Based on the California Department of Fish and Game's (CDFG) Natural Diversity Database, RareFind 3.1 application (CNDDB), there is a new (July 2007) record for nesting Swainson's hawk that is located within the project area (CNDDB Occurrence No. 1690). In addition, CDFG staff states that it is highly probable that this species nests within the project area (pers. comm. Ms. Annee Ferranti (CDFG) and Ms. Hope Kingma (Monk & Associates) on August 21, 2006). The trees within the project area provide suitable nesting habitat for this species. The fallow fields and hay fields provide suitable foraging habitat for this species. Swainson's hawks were observed in the project area during the wildlife surveys conducted in 2006 and 2007.

Since Swainson's hawks are known to nest within the proposed project area, implementation of the expressway project would be viewed by CDFG as a direct impact to the Swainson's hawk. Nest site disturbance which results in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates), may ultimately result in the take (killing) of nestling or fledgling Swainson's hawks incidental to otherwise lawful activities. The taking of Swainson's hawks in this manner can be viewed by the CDFG as a violation of the Section 2080 of the Fish and Game Code. This interpretation of take has been judicially affirmed by the landmark appellate court decision pertaining to CESA (CDFG v. ACID, 8 CA App.4, 41554) (CDFG 1994).

Any disturbance around a Swainson's hawk nest that is not characteristic of the normal activities around the nest site that caused disruption of the nesting attempt would likely be regarded by CDFG as a violation of CESA. Typically, CDFG requires that any impact to a Swainson's hawk nest be permitted through a Fish and Game Section 2081 management authorization. If an active nest is found on or immediately adjacent to the project area (which is generally considered to be within 300 feet of the project area) "to avoid potential violation of Fish and Game Code 2080 (i.e., killing of listed species), project-related disturbance at active Swainson's hawk nesting sites should be reduced or eliminated during critical phases of the nesting cycle (March 1- September 15 annually)" (CDFG 1994). If disturbance would occur to an actual active nest site (disturbance to the nest site or within 300 feet of the nest site), a Fish and Game Section 2081 management authorization shall be obtained as required by CDFG. Impacts to nesting Swainson's hawks would be considered a significant impact pursuant to CEQA.

The project area is within 10 miles of a known Swainson's hawk nest (CNDDB records) and is therefore considered by CDFG to be within the "defined foraging area" for this species (CDFG 1994). Only a small portion of the suitable foraging habitat would be permanently impacted by the project. This impact would be considered a significant impact pursuant to CEQA.

Mitigation Measure BIO-1h: Mitigation for Swainson's Hawk.

CDFG has prepared guidelines for conducting surveys for Swainson's hawk entitled: *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (CDFG 2000). These survey recommendations were developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reduce the potential for nest failures as a result of project activities and/or disturbances. To meet the

CDFG's recommendations for mitigation and protection of Swainson's hawks in this guideline, surveys should be conducted for a half-mile radius around all project activities and should be completed for at least the two survey periods immediately prior to a project's initiation. The guidelines provide specific recommendations regarding the number of surveys based on when the project is scheduled to begin and the time of year the surveys are conducted.

If Swainson's hawks are found to be nesting on or in the immediate vicinity of the project area in the future when the proposed project is implemented, consultation with CDFG and mitigation compensation shall be required. At that time, the necessity of acquiring a Fish and Game Section 2081 management authorization should be determined. CDFG has prepared a *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (CDFG 1994) (hereinafter the Mitigation Guidelines) that prescribes avoidance and mitigation guidelines for impacts to Swainson's hawk nesting and foraging habitats. The Mitigation Guidelines require project sponsors to replace any impacted Swainson's hawk nesting and/or foraging habitat with other suitable Swainson's hawk nesting/foraging habitat. If Swainson's hawks are found to be nesting on or within the area of influence of the project (within 1,000 feet of the project alignment), impacts to nesting Swainson's hawks would be regarded as significant and adverse, and mitigation compensation would be required.

The CDFG Mitigation Guidelines states that acceptable mitigation to offset impacts to Swainson's hawk foraging habitat can be met by Fee Title acquisition of Swainson's hawk habitat, or by acquisition of the right to record a conservation easement over lands that can be managed for this hawk species (hereinafter Habitat Management Lands). Any land acquired through Fee Title would have to be donated to a suitable conservation organization for management. In addition to providing Habitat Management Lands, the project sponsor would be assessed a management fee for the long-term management of the Habitat Management Lands by a suitable conservation organization. In lieu of these mitigation measures, as approved by CDFG, the project sponsor may purchase mitigation credits commensurate with the acreage of impacts to foraging and/or nesting habitat at a CDFG approved Swainson's hawk mitigation bank.

Significance after Mitigation: **Less than significant.**

Impact BIO-1i: Western Burrowing Owl

The western burrowing owl is a California species of special concern. This owl is also protected under California Fish and Game Code §3503, §3503.5, §3513, and §3800, and the Federal Migratory Bird Treaty Act. Burrowing owls were observed in several locations within the project area in 2006 and 2007 (CNDDB Occurrence No. 876 and 877). Suitable nesting habitat for western burrowing owl occurs within the project area.. Since this owl and ground squirrels are known from the area, and thus could nest or reside in the project area in the future when the proposed project is implemented, impacts to western burrowing owl would be regarded as potentially significant pursuant to CEQA.

Mitigation Measure BIO-1i-1: Mitigation for Western Burrowing Owl

A nesting survey shall be conducted for ground nesting raptors, such as western burrowing owl and northern harrier. The burrowing owl survey should be conducted in accordance with the survey

requirements detailed in the CDFG's October 17, 1995 *Staff Report on Burrowing Owl Mitigation*. Surveys shall be conducted in both the breeding season (April 15-July 15) and non-breeding season (December-January) to assess use of the project area by this species. If burrowing owls are present on the project area during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 75 meter (276-foot) buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance within the project area. This 276-foot buffer could be removed once it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest). Typically, the young fledge by August 31. This date may be earlier than August 31, or later, and would have to be determined by a qualified raptor biologist. If northern harriers are identified nesting within the project area, mitigation measures detailed above for nesting raptors should be implemented.

Additionally, if burrowing owls are identified nesting onsite and would be affected by the proposed project, an upland mitigation area for burrowing owls shall be established either on- or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls that would be affected by the proposed project, with a minimum of 6.5 acres preserved per pair of owls or single owl that would be affected by the proposed project. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are found to be within the project area, the mitigation requirement shall be 2 x 6.5 = 13 acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be 3 x 6.5 = 19.5 acres). A detailed mitigation and monitoring plan shall be developed for the burrowing owl mitigation area. This plan must be prepared in coordination with CDFG, and approved by this agency. In lieu of this mitigation measure, as approved by CDFG, credit commensurate with the mitigation acreage requirements set forth above shall be purchased from a qualified burrowing owl mitigation bank.

Mitigation Measure BIO-1i-2:

Preconstruction surveys of the project area shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted to non-habitat (e.g., graded and developed).

Mitigation Measure BIO-1i-3:

If western burrowing owls must be passively relocated from the project area to remove them from harms way, these activities shall be approved by CDFG in advance. Passive relocation shall not commence before September 30th and shall be completed prior to February 1st.

Mitigation Measure BIO-1i-4:

If an upland mitigation site is designated for burrowing owls, it shall be approved as a suitable burrowing owl mitigation property by CDFG. The preserved area shall be preserved in perpetuity as

wildlife habitat via recordation of a conservation easement that designates the California Department of Fish and Game (CDFG), or any other qualified conservation organization as approved by CDFG as the Grantee of the easement.

Mitigation Measure 1i-5:

If a conservation easement is established over burrowing owl habitat, an endowment to cover the management of the mitigation area and implementation of the mitigation and monitoring plan shall be provided by the project sponsor to the Grantee of the Conservation Easement prior to issuance of the grading permit.

Significance after Mitigation: **Less than significant.**

Impact BIO-1j: Common and Special-Status Nesting Passerine Birds

Nesting passerine birds (that is, perching birds), and special-status birds such as loggerhead shrike or tricolored blackbirds could be impacted. Birds and their **active** nests are protected under California Fish and Game Code (Sections 3503, 3503.5), and the Migratory Bird Treaty Act. Impacts to nesting birds, their eggs, and/or young resulting from the proposed project would be potentially significant pursuant to CEQA. Impacts to unoccupied nesting habitats for these species would not be considered significant as there are other local and regional nesting habitats available for use by these species that could be used in subsequent nesting seasons. Consequently no mitigation is warranted for impacts to unoccupied nesting habitats.

Mitigation Measure BIO-1j: Mitigation for Common and Special-Status Nesting Passerine Birds

A nesting survey shall be conducted 15 days prior to commencing construction work if this work would commence between March 1 and September 1. If special-status birds, such as loggerhead shrike or tricolored blackbirds, are identified nesting within or near the project area, a 200-foot radius around the nest must be staked with bright orange construction fencing. No construction or earth-moving activity shall occur within this 200-foot staked buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by August 1. This date may be earlier than August 1, or later, and would have to be determined by a qualified ornithologist.

If common (that is, not special-status) passerine birds (that is, perching birds such as American robins, scrub jays, and northern mockingbird) are identified nesting within the project area, grading activities in the immediate area shall be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the area. Typically, most passerine birds can be expected to complete nesting by July 1, with young attaining sufficient flight skills by early July.

Significance after Mitigation: **Less than significant.**

Impact BIO-1k: San Joaquin Kit Fox

San Joaquin kit fox, a federally listed threatened species, was not identified during protocol surveys conducted in 2007. Based on the results of the protocol surveys conducted for this project, it is thought that there is a very low likelihood of kit fox occurring within the project area. The extent of land manipulation and high degree of disturbance due to agricultural practices such as tilling and crop planting (corn and strawberry) reduces the value of the project area for kit fox, and thus their use of the project area is less likely. However, the various large irrigation canals and creeks that bisect portions of the project area could provide marginal habitat, particularly as a migration corridor for the kit fox between ruderal and grassland habitats in the area.

In order to better determine potential impacts to San Joaquin kit fox by the proposed project, the project area was broken down into high, medium, and low quality San Joaquin kit fox habitat (with agreement from USFWS on this methodology). High quality habitats include canals, ruderal areas, grasslands, and forested areas. Medium quality habitats include irrigated pasture, horse pasture, and rotational crops. Low or unlikely habitats include permanent crops, orchards, and urban areas. Impacts to high and medium quality habitats are regarded as potentially significant. Impacts to low quality habitats are regarded as less than significant. Therefore, the potential San Joaquin kit fox habitats affected by the proposed expressway that would require mitigation only includes the "high" and "medium" quality habitats, and no mitigation would be required for impacts to the "low" quality habitats. Impacts to potential San Joaquin kit fox habitats would be a significant impact pursuant to CEQA.

Construction of Alternative 1A would result in impacts to 7.26 acres of potential high quality habitat, 187.6 acres of potential medium quality habitat, and 178.3 acres of potential low quality or unlikely San Joaquin kit fox habitat. Thus, Alternative 1A would result in permanent impacts to approximately 194.9 acres of potential San Joaquin kit fox habitat (excluding the low quality areas). In addition, Alternative 1A would result in temporary impacts to 102.1 acres of potential San Joaquin kit fox habitat (i.e., a 50-foot area along both sides of the alignment).

Construction of Modified Alternative 1B would result in impacts to 17.5 acres of potential high quality habitat, 171.9 acres of potential medium quality habitat, and 155.7 acres of potential low quality or unlikely San Joaquin kit fox habitat. Thus, Alternative 1B would result in permanent impacts to approximately 189.4 acres of potential San Joaquin kit fox habitat (excluding the low quality areas). In addition, Modified Alternative 1B would temporarily impact 94.3 acres of potential San Joaquin kit fox habitat.

~~Finally, the USFWS believes that the project will diminish the ability of kit foxes to move between the Sandy Mush Road preserve and the "east side" of Merced County. Impacts to potential San Joaquin kit fox migration corridor habitat would be a significant impact pursuant to CEQA.~~

Mitigation Measure BIO-1k:

In order to offset the project's impact to high and medium quality potential San Joaquin kit fox habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation bank available for use at the time the project is constructed). The USFWS has approved use of this bank to jointly mitigate for impacts to California tiger salamander upland estivation/over-summering habitat and San Joaquin kit fox habitat. Mitigation credits that are purchased to compensate for permanent impacts and for temporary impacts to high and medium quality suitable kit fox habitats. The total credits purchased

by the project sponsor shall ultimately be consistent with USFWS requirements for this project ~~and will be included in the Final EIR.~~ **It is likely that the USFWS will require a 2:1 mitigation ratio for permanent impacts to potential SJKF habitat (for medium and high quality habitat areas only), and a 0.5:1 mitigation ratio for temporary impacts to potential SJKF habitat. Once the final alignment is determined, the project sponsor shall purchase the appropriate number of mitigation credits for any impacts.**

~~In addition to purchasing mitigation credits commensurate with USFWS requirements, the project sponsor is proposing to provide wildlife corridor access (see Figure 4.11-2) under the constructed road alignment to address the USFWS' concerns that the project will diminish the ability of foxes to move between the Sandy Mush Road preserve and the "east side" of Merced County. In order to maintain this potential movement corridor after construction of the new road alignment, the proposed project would incorporate a passageway under the constructed expressway. As previously discussed with USFWS, the selected location for this crossing structure is where the main canal which currently bisects Bellevue Road.~~

~~The proposed passageway would include a "bubble" of preserved land, approximately 10 acres in size, on both sides of the constructed expressway to enhance the value of the movement corridor for the kit fox. It is our understanding that any land set aside in association with this movement corridor would be counted towards the mitigation requirements for this species. In addition, the passageway would include constructing dens to provide escape habitat that could be used by the kit fox to avoid predators. One escape den would be installed within the passageway and one escape den would be constructed in the "bubble" of preserved land on each side of the expressway.~~

Finally, avoidance and minimization measures will be implemented by the proposed project to further reduce potential impacts to the San Joaquin kit fox. An employee training program will be conducted before groundbreaking to explain the Federal Endangered Species Act and any endangered species concerns to contractors working in the area. Qualified biologists would then conduct preconstruction den surveys no more than 14 days prior to groundbreaking to ensure that potential kit fox dens are not disrupted **during construction of** the expressway project. If "potential dens" are located, infrared camera stations will be set up and maintained for 3 consecutive nights at den openings prior to initiation of groundbreaking activities to determine the status of the potential dens. If no kit fox is found to be using the den, groundbreaking activities would proceed unhindered. However, if a kit fox is found using a den site within an area of influence of the expressway project (i.e., within 300 feet of the proposed road alignment), the USFWS will be notified at once. Because timing is an issue, notification would be via a telephone call (and as necessary voice-mail message) to the Chief of Endangered Species in Sacramento, and the Supervisor of Environmental Services at the appropriate CDFG Regional office. If the den is a refuge site only, the project sponsor will seek permission from the USFWS (and CDFG) to passively relocate the fox(es) from the den site prior to the initiation of the groundbreaking activities. As approved, passive relocation will occur over a three day period. Should a den be found that is a natal or pupping den, and it is within an area of influence near the expressway project, the groundbreaking activities would be delayed until such time that biologists can confirm that all kit foxes have left the den site. Once the den has been vacated, an infra red triggered camera would be set at the den opening. The camera would then be checked over a 2-

day period to confirm that kit foxes no longer use the den. Once this is verified, grading equipment could be moved into the area and the groundbreaking activities completed.

Prior to initiating groundbreaking activities, the vehicle and equipment access routes and work area will be delineated using construction fencing. This will minimize the project-related disturbance to **potential** San Joaquin kit fox habitat to the maximum extent possible. During the groundbreaking activities, all project-related vehicle traffic will be restricted to established roads or access routes, and will observe a 20-mile an hour speed limit within the work areas, except on County roads and highways. A biological monitor will be present during all activities that could result in injury to San Joaquin kit fox. The biologist will have the authority to halt work, if necessary, to protect the kit fox.

To prevent harm to San Joaquin kit fox, any steep-walled holes and/or trenches excavated for the project will be completely covered at the end of each workday, or escape ramps will be provided to allow any entrapped animals to escape unharmed. All pipe sections stored at the project site overnight that are four inches in diameter or greater will be inspected for San Joaquin kit fox before the pipes are moved or buried. If San Joaquin kit fox are identified in the work area at any time, the USFWS and/or CDFG will be notified and consulted before work activities resume. All trash items will be removed from the project site to reduce the potential for attracting predators of San Joaquin kit fox. Contractors will be prohibited from bringing firearms and pets to the job site.

Prior to impacting San Joaquin kit fox habitat, an "incidental take" permit (Section 7 consultation) would be required from USFWS, and an "incidental take" permit (Section 2081 permit) would be required from CDFG. In lieu of such a permit, CDFG may process a "consistency determination" pursuant to Fish and Game Code §2080.1. Such a determination would indicate that the State's interests in protecting State listed species are met by the federal biological opinion (i.e., the incidental take permit) issued by USFWS and thus no Section 2081 permit is required.

Significance after Mitigation: **Less than significant**

Impact BIO-1l: California Horned Lizard

The friable/sandy soils common throughout the project area provide suitable habitat for California horned lizard. In the absence of surveys that demonstrate that this species is does not occur in the project area, the proposed project may result in impacts to potentially occupied burrowing habitat. Impacts to California horned lizard would be regarding as a **potentially** significant ~~adverse~~ impact.

Mitigation Measure BIO-1l: Mitigation for California Horned Lizard

The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the California horned lizards. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied California horned lizard habitat within the project area could be impacted by the proposed project. Avoidance of potentially occupied upland burrow sites is not possible. The project sponsor will be purchasing mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation bank) to mitigate for impacts to San Joaquin kit fox habitat. Since both the San Joaquin kit

fox and the California horned lizard require friable soils, it shall be assumed that mitigation land set aside for San Joaquin kit fox could also serve to provide mitigation lands for the California horned lizard.

Additional mitigation measures shall include conducting preconstruction surveys for the California horned lizard prior to any site grading. All California horned lizards encountered during site grading would be salvaged, per CDFG approval, and relocated to preserved off-site habitats. Impacts to potential California horned lizard habitat would be conducted in consultation and as approved by CDFG. This mitigation measure would reduce impacts to a level regarded as less than significant.

Significance after Mitigation: Less than significant

Impact BIO-2: Impacts to Jurisdictional Wetlands, Including Waters of the United States and the State of California

The proposed project would impact areas that are within the Corps' and RWQCB jurisdiction pursuant to Sections 404 and 401 of the Clean Water Act, respectively. Alternative 1A would impact 1.22 acres of potential seasonal wetlands, 0.92 acres of open water pond/detention **basins**, and 0.06-acre of other waters pools. In addition, Alternative 1A would impact 3.35 acres (18,828 linear feet) of the "other waters of the United States/State." These impacts to "other waters" include 2.19 acres (5,130 linear feet) of creeks and canals, 0.37 acre (3,042 linear feet) of primary irrigation ditches, 0.52 acre (8,333 linear feet) of secondary irrigation ditches and 0.27 acre (2,323 linear feet) of concrete-lined ditches.

Modified Alternative 1B would impact ~~2.67~~ **2.97** acres of potential seasonal wetlands, 0.92 acre of open water pond/detention **basins,** and 0.0~~6~~ **0.07 acre** of other waters pools. In addition, **Modified** Alternative 1B would impact ~~7.0~~ **5.6** acres (~~26,292~~ **24,390** linear feet) of "other waters of the United States/State." These impacts to "other waters" include ~~5.43~~ **4.55** acres (~~9,935~~ **13,804** linear feet) of creeks, canals, **and** primary irrigation ditches, 0.~~49~~ **0.51** acre (~~8,048~~ **8,538** linear feet) of secondary irrigation ditches and 0.~~32~~ **0.50** acre (~~2,623~~ **2,048** linear feet) of concrete-lined ditches.

These impacts to waters of the United States and State would be regarded as a significant impact pursuant to CEQA.

Mitigation Measure BIO-2:

Impacts to waters of the United States and/or State will be reduced to a *less-than-significant level* through various means, including avoidance, minimization of impacts, and mitigation compensation. Impacts will be minimized by the use of Best Management Practices to protect avoided wetland and "other waters" in the project area, and ensure water quality in the avoided wetlands and other waters within the watershed. These practices can include installing orange construction fencing, hay waddles, and other protective measures around wetlands and other waters. During project-related grading, a biological monitor will be on-site to monitor the integrity of avoided wetlands and other waters.

For those wetland areas and other waters that cannot be avoided, a *Mitigation and Monitoring Plan* will be prepared that will provide a mitigation program to fully compensate for impacts to waters of the United States/State. To compensate for impacts to wetlands and other waters, wetlands and other waters shall be created in areas that are now upland at a 2:1 (mitigation to impacts) ratio and be

consistent with requirements set forth by the Corps and the RWQCB. The new wetlands and other waters will resemble those wetlands and other waters affected by the project (known as in-kind replacement).

In pool environments that will be impacted by the project, wetland plant/animal populations will be relocated by transferring topsoil from the impacted pools to the re-created pools. These topsoils would contain a seed bank of the impacted pool plant species which would germinate with fall/winter hydration in the re-created pools.

The proposed wetland mitigation plan would have to meet normal requirements for mitigating impacts to wetlands and other waters, which include:

- **Replacement of impacted wetlands and other waters at a 2:1 ratio.** For permanent wetland and other waters impacts, wetlands and other waters shall be replaced at a minimum ratio of two acres created for each acre, or fraction thereof that is permanently impacted.
- **Dedication of the permanently protected areas.** The Corps and other regulatory agencies generally require that any new wetlands and other waters created to mitigate project impacts be set aside in a preserve in perpetuity, either through deed restrictions or conservation easements.
- **Establishment of a five-year monitoring program to monitor the progress of the wetland and other waters mitigation toward an established goal.** Success criteria, maintenance and monitoring requirements, contingency measures and a schedule for implementation shall be specified. At the end of each monitoring year, an annual report will be submitted to the Corps, RWQCB and other resource agencies that permitted the project. This report will document the hydrological and vegetative condition of the mitigation wetlands and other waters, and will recommend remedial measures as necessary to correct deficiencies.

In lieu of creating compensation wetlands and other waters, as approved by the Corps and RWQCB, the project sponsor may purchase mitigation credits from an approved mitigation bank at a 2:1 ratio or as otherwise specified by the Corps and RWQCB.

Aside from the minimum replacement ratio and in perpetuity protection, various regulatory agencies may provide additional conditions and stipulations for permits. No water of the U.S. and/or State would be impacted until such time that appropriate permits are acquired for the project from the CDFG, RWQCB, and/or Corps. As proposed, impacts to wetlands and other waters within the project area will require a Section 404 permit from the Corps, authorization from the RWQCB pursuant to Section 401 of the Clean Water Act, an NOI with the SWRCB, and an SBAA from the CDFG. Conditions in permits authorized for the project by these agencies shall become conditions of the project.

Implementation of the measures described above would reduce significant impacts to waters of the United States/State to a level considered less than significant pursuant to the CEQA. Any other conditions that are stipulated for wetland impacts by the CDFG, Corps and/or RWQCB shall also become conditions of project approval.

Significance after Mitigation: Less than significant.

4.12 PALEONTOLOGICAL AND CULTURAL RESOURCES

This section discusses the paleontological, archaeological, and historical resources in and proximal to the project study area. Included is an evaluation of whether the AME project would result in the adverse impacts to cultural resources. Information in this section is based primarily on the following sources:

- *Archaeological Survey Report for the Atwater-Merced Expressway Project, Merced County, California.* Far Western Anthropological Research Group, Inc. April 2007.
- *Historical Resources Inventory and Evaluation Report. Atwater-Merced Expressway Project. Merced, California.* JRP Historical Consulting, LLC. April 2007.
- *Paleontological Resource Impact Assessment for the Atwater-Merced Expressway Project, Merced County, California.* PaleoResource Consultants; F & F GeoResource Associates, Inc. March 2007.

These documents are available at the Merced County Association of Governments Planning Department at 369 West 18th Street, Merced, CA 95340.

This section also provides a discussion of the consistency of the AME project with the plans and policies related to cultural resources found in the Merced County General Plan, the City of Atwater General Plan and the Castle Air Force Base Reuse Plan.

4.12.1 EXISTING CONDITIONS

Paleontological Context

Paleontological resources are the remains or traces of prehistoric plants and animals. The AME project study area is located in an area that contains three geological formations that may contain fossils that would be considered sensitive paleontological resources. These formations are all made up of materials carried into the area over time in river deposits. These deposits, consisting of rock debris deposited by the Merced River, Bear Creek, and adjacent smaller streams, including Canal Creek and Black Rascal Creek, can be divided into three stratigraphic units, from oldest to youngest:

- Turlock Lake Formation (consisting of brown to tan sandstone and siltstone from the Early to Middle Pleistocene period)
- Riverbank Formation (consisting of reddish brown sandstone, siltstone, and claystone from the Middle Pleistocene period)
- Modesto Formation (slightly younger and less consolidated Late Pleistocene sediment)

Fossil resources are likely to occur in the alluvial deposits of the Turlock Lake, Riverbank, and Modesto Formations that underlie the project study area. Because these formations lie below surface level, it is not possible to accurately map the extent of these different formations.

Fossil remains previously found in the Turlock Lake Formation include petrified wood and the bones and teeth of a diversity of extinct land mammals, including mammoths, horses, and a camel. Since fossil vertebrates have been previously reported from the Turlock Lake Formation and since depositional conditions observed in exposures in the vicinity of the project study area appear to be favorable for the preservation of fossils, the Turlock Lake Formation is judged to have high sensitivity for producing additional paleontological resources.

Fossils previously reported from the Riverbank Formation include clams, fish, turtles, frogs, snakes, birds, bison, mammoths, mastodons, ground sloths, camels, horses, pronghorns, deer, dire wolves, coyotes, rabbits, rodents, and land plant remains (including wood, leaves, and seeds). The fossil remains previously recovered from the Riverbank Formation are scientifically significant because the species they represent were generally previously unreported in the fossil record of California. Moreover, continental vertebrate remains are comparatively rare in the fossil record. As with the Turlock Lake Formation, the Riverbank Formation is judged to also have high sensitivity since fossil vertebrates have been previously reported from this formation and since depositional conditions observed in exposures in the vicinity of the project study area appear to be favorable for the preservation of fossils.

The Modesto Formation has previously yielded fossils of mammoths, bison, horses, camels, ground sloths, and various rodents. As it is possible that additional significant paleontological resources could be found in sediments of the Modesto Formation, this geologic unit also has high sensitivity for paleontological resources.

The other formation found in the area, an unnamed Holocene Alluvium, has not been known to produce fossils in the past. Therefore this geologic unit is considered to have low sensitivity.

Archaeological Context

The archaeological period of the Central Valley, as it is currently understood, extends from the end of the Pleistocene Era, in approximately 11,500 BCE (Before the Common Era) until the European colonization of North America. This era begins with the Paleo-Indian period (11,500-8,500 BCE), during which time humans in the area were groups of mobile hunters and gatherers. This period is not well understood, as archaeological evidence from the Central Valley is limited due to water and airborne sedimentation that has covered most resources.

The Archaic period ranges from approximately 8,500 BCE to 1200. The beginning of the period is represented by artifacts that include large-stemmed dart points, flaked-stone crescents, and steep-edged formed flake tools. The only known archaeological site in the region from the earliest years of this period is located in the Tulare Lake area, approximately 23 miles from the project area. It is believed that such sites were seasonally occupied and included ground stone assemblage. Towards the middle of the Archaic period, the human population in the Central Valley appears to have adopted a complex socio-economic strategy, as seen by the use of mortars and pestles; reliance on acorns and pine nuts; new fishing technologies; basketry and cordage; ceramic items; diverse personal adornment of stone, bone, and shell; and by large communal burial sites. Over time, the documentation of tools fashioned of bone, distinctive beads and ornaments, stone artifacts and residential features demonstrate the transition towards regional variation in economic and cultural diversity.

The latest prehistoric period, extending from 1157 to the time of European explorations in 1772, is characterized by artifact assemblages. Developments of this period include inter-regional trade networks, the bow and arrow, small corner-notched arrow points, new shell beads, mortuary rituals, and resource exploitation.

During this period humans created settlements along rivers in the area and hunted and fished widely for sustenance. A total of 25 cultural resources are listed in the region, eight of which are located within the project study area. All of these resources were determined to be of the Historical Era and include residences, canals, and other historic structures. These Historic Era resources were evaluated in the historical resources survey performed for this project (discussed below).

There are no recorded prehistoric archaeological resources sites in the project study area, though the prehistoric human settlement of the area would indicate that encountering these resources is possible.

Historic-Era Context

The Historical Era begins with colonization of the area by European descendents in the Eighteenth Century. The project area was developed for agricultural purposes in the later half of the nineteenth century and the area remains largely agricultural in nature. Residential, roadside commercial and industrial development began occurring in the area largely during the second half of the twentieth century.

An Architectural Resources Study Area was defined for the project and an evaluation of all parcels and properties within this area was performed to determine the presence of historical resources. No resources within the Architectural Resources Study Area had been previously listed or found eligible for listing in the California Register of Historic Resources (CRHR) or the National Register of Historical Places (NRHP).

Cultural Resources Investigations

RECORDS SEARCHES

Paleontological

In developing a paleontological resource inventory, published and unpublished geological and paleontological literature was reviewed consistent with the methods of Society of Vertebrate Paleontology (SVP) guidelines (1995). Geologic maps and reports and aerial photographs were also examined. An archival records search conducted at the University of California Museum of Paleontology (UCMP) in Berkeley, California was also performed.

Archaeological

Archaeological survey data was obtained from the Central California Information Center (CCIC), located at California State University, Stanislaus in Turlock. The records search included the following sources:

- National Register of Historic Places listings
- California Register of Historical Resources listings

- *California Inventory of Historic Resources* (1976)
- *California Historical Landmarks* (1996)
- *California Points of Historical Interest* (May 1992 and updates)
- Historic Property Data Files
- Archaeological Determinations of Eligibility, State Office of Historic Preservation current computer lists
- Caltrans State and Local Bridge Survey (1987 and 2000)
- *Survey of Surveys* (1989)
- General Land Office (GLO) plats
- Other pertinent historical data on file at the Information Center

The records search identified 42 previous surveys, eleven of which encompass a portion of the study area. These previous surveys were performed for proposed roadway realignments, bridge replacements, or fiber-optics cable or pipeline installations. One such survey includes the Caltrans Inventory of Rural Conventional Highways, which discusses SR 59 and 140.

A background and resource-specific archival search for historical resources which included researching local and state government records. Sources include:

- National Register of Historic Places
- California Inventory of Historic Resources
- California Historical Landmarks
- California Points of Historical Interest
- Merced County Historical Society
- Merced County Public Library-Merced Branch
- Merced County Assessor's Office
- Merced College Library
- California State Library
- California State Archives
- Bancroft Library at University of California, Berkeley

- Shields Library at University of California, Davis
- Merced Irrigation District
- Merced College, Archeology Department; University of California Agriculture and Natural Resources Cooperative Extension
- Castle Air Force Base Museum

NATIVE AMERICAN CONSULTATION

In accordance with state law, a letter was submitted requesting consultation with the Native American Heritage Commission in Sacramento on July 25, 2005. The submission described the proposed expressway project, provided a map of the project, and requested a check of the Commission's Sacred Lands file, in addition to a list of local Native people who might have concerns regarding the project. A response was sent on August 2, 2007 claiming that the Commission's files identified no Native American cultural resources; however, the absence of such information did not mean that no resources were necessarily present. The response also included a list of individuals and groups from the local Native American community. Consultation letters were sent to the provided contacts, which included eight members of American Indian Council of Mariposa County and the Arnah Mutsun Tribal Band. There have been no responses.

FIELD SURVEYS

Paleontological

Paleontological field surveys were conducted to document the presence of sediments suitable for containing fossil remains and the presence of previously unrecorded fossil sites. The field survey looked at existing road cuts, irrigation ditch banks, excavations at construction sites, and the banks of storm-water retention basins to determine the presence of different geologic formations. Excavations up to 15 feet (4.6 meters) deep were found within one mile of the project area. These surveys were conducted on August 17 and October 4,2006, and on February 10-11, 2007.

Archaeological

An archaeological field survey was conducted in November 2006 and January 2007. As most of the study area is located on private land, it was necessary to obtain permission from the individual landowners before entering their properties. The majority of the landowners permitted entry to their property which allowed survey of 1,689 acres which represents 74 percent of the total study area. The field survey was done in two sessions to accommodate the schedules and requests of landowners, and to take advantage of better surface visibility after harvesting in the agricultural parcels.

Historic Era

Field surveys of historic resources were conducted in July 2005 and between December 2006 and February 2007 to account for the Historic Era buildings, structures and objects that could be considered historical resources. Properties or components more recent than 1962 were excluded from the intensive survey, as they do not qualify for the California Register or National Register listing. Buildings and structures confirmed to

date 1963 or after also required no further examination. In total, 56 properties required further study and were recorded on California Department of Parks and Recreation (DPR) 523 forms.

SURVEY FINDINGS

Paleontological

~~Although the paleontological survey did not uncover any fossils, the survey was primarily a surface exploration and did not include subsurface testing. As previously discussed, the~~ **The** AME project study area is located in an area that contains diverse paleontological resources. Although no vertebrate fossils are known to directly underlie the project study area, the presence of numerous fossil sites in the project vicinity suggests that there is a high potential for additional similar fossil remains to occur in the area and to be found during project development. **During a field survey of prospective fossil containing sediments in the project vicinity, sediments at six (6) separate localities were found to contain ichnofossils (burrow casts and root casts and molds) in paleosols1. The presence of these paleosols indicates that scientifically important fossil specimens could be discovered from these paleosol horizons during project construction.**

Archaeological

A single archaeological resource was identified in the project study area, a historic-era artifact scatter of twentieth century origin. The scatter was found in the northern portion of the study area and includes bottle and ceramic fragments and a single granitic hand-stone. It is possible that at least a portion of a shallowly buried archaeological site lies nearby but due to extensive surface modification and ongoing agricultural activities, it is not known if any such site would be intact, or would be considered a sensitive resource.

In addition, four individual prehistoric artifacts were observed and recorded as isolates during the survey. They included a shaped granitic pestle, a battered cobble, and two bowl mortar fragments. These artifacts were scattered across an agricultural field within the study area. No additional artifacts were observed during the survey despite excellent surface visibility. It is likely that the artifacts have been brought to the surface by plowing. It is also possible that at least a portion of an intact, shallowly buried site is located nearby.

Currently, 74 percent of the study area has been surveyed while 26 percent of the study area could not be inventoried because of access restrictions to private property. A review of recent geo-archaeological modeling reveals that most of the potential for buried archaeological sites reveals that most of the study area has either very low or low sensitivity for buried archaeological sites. Only a very small portion of the southwest end of the study area is considered moderately sensitive for buried sites.

Historic-Era

Fifty-six distinct resources within the project area were evaluated to determine whether they would be considered historical resources under CEQA. Fifty-five of the 56 resources evaluated herein do not appear to meet the criteria for listing in the CRHR and thus are not historical resources for the purposes of CEQA.

[1] Paleosols are soils formed long ago that have no relationship in their chemical and physical characteristics to the present-day climate or vegetation

One resource, the Buhach Catholic Church, was identified as a historically significant architectural resource. The Church is located at 2889 Buhach Road, approximately 700 feet south of SR 99, as seen in **Figure 4.12-1**. The Church has direct associations with the trend of Azorean Portuguese settlement in the Central Valley of California, is the only Portuguese Catholic Church in the area, and played a significant roll in the community life of the Azorean immigrants. The Church also has an important direct connection with original Azorean immigrant parishioners as a central meeting place for religious ceremonies and as a symbolic center of the community.

Architecturally, the Buhach Catholic Church embodies the distinctive characteristics of European and Portuguese masonry church forms expressed in wood frame construction with Spanish Mission Revival details. Overall, the Buhach Church has undergone some structural change, but it nevertheless retains many character-defining features of its original design: domed bell towers, shaped parapets, wood-frame construction with buttresses along the nave, and arched windows.

It was determined that the Buhach Church is eligible for listing in the National Register of Historical Places and the California Register of Historical Resources. The Church is considered historically-significant under Criteria A and 1, at the local level, with a period of significance of 1902-1922. Additionally, the Buhach Church is eligible for listing under Criteria C and 3 because it embodies the distinctive characteristic of European and Portuguese church forms expressed in wood frame construction with Spanish Mission Revival details.

4.12.2 REGULATORY SETTING

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The project is being evaluated under the California Environmental Quality Act (CEQA). CEQA Guidelines require that the project consider the significance of an undertaking's impacts to historic remains and archaeological sites determined to be historical resources under CEQA criteria (Section 15064.5). To properly evaluate the significance of impacts to such resources it is necessary to evaluate each resource in terms of the site significance criteria contained in the CEQA Guidelines.

CEQA recognizes four categories of potential "historical resources." These categories include listing in state and national registers, local registers, survey identification and local agency determination.

The first category includes resources that are "listed in, or determined to be eligible for listing in, the California Register of Historical Resources" (Pub. Resources Code, 21084.1; CEQA Guidelines, § 15064.5 (a)(1)). The criteria by which the State Historic Resources Commission determines whether to include resources in the California Register of Historical Resources are set forth in Public Resources Code § 5024.1. Any property within California that has formally been determined to be "eligible for, or listed in, the National Register of Historic Places" must be included in the California Register of Historical Resources (Pub. Resources Code, § 5024.1 (d)(1)).

NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places (NRHP) is the nation's master inventory of known historic resources. The NRHP is administered by the National Park Service and includes listings of buildings,

structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state or local level.

Generally, a historic site, object, building, structure, or district is eligible for listing on the NRHP if it is 50 years old or older, possesses integrity of location, design, setting, materials, workmanship, feeling, and association, and meets at least one of the following criteria (National Park Service 1991):

A) Is associated with events that have made significant contributions to the broad patterns of United States history;

B) Is associated with the lives of people important in United States history;

C) Embodies the distinctive characteristics of a type, period, or method of construction; or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components may lack individual distinction; or

D) Has yielded or is likely to yield information important in prehistory or history.

For purposes of a National Historic Preservation Act, Section 106 consultation, "effect" is defined as "alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register" (36 CFR Part 800.16(i)).

CALIFORNIA REGISTER OF HISTORIC RESOURCES

In 1992, the Public Resources Code was amended as it affects historical resources. The amendments included creation of the California Register of Historic Resources (CRHR). While the amendments became effective in 1993, it was not until January 1, 1998, that the implementing regulations for the CRHR were officially adopted. The CRHR is an authoritative listing and guide for state and local agencies and private groups and citizens in identifying historical resources. This listing and guide indicates which resources should be protected from substantial adverse change. The CRHR includes historical resources that are listed automatically by virtue of their appearance on or eligibility for certain other lists of important resources. The CRHR includes historical resources that have been nominated by application and listed after public hearing.

Also included are historical resources listed as a result of an evaluation by specific criteria and procedures adopted by the State Historical Resource Commission.

A lead agency generally shall consider a resource to be historically significant, even absent a formal eligibility determination by the Commission, if the resource meets the criteria for listing on the California Register of Historical Resources

Any building, site, structure, object, or historic district meeting one or more of the following criteria may be eligible for listing in the CRHR if:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2. It is associated with the lives of persons important to local, California, or national history;

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

As previously mentioned, eligibility for the CRHR also depends on the integrity or the survival of characteristics of the resource that existed during its period of significance. Eligible historical resources must not only meet one of the above criteria, but also they must retain enough of their historic character or appearance to convey the reasons for their importance, or retain the potential to yield significant scientific or historical information or specific data.

Most often, historical resources eligible for the CRHR would be 50 years old or older. However, the new implementing regulations stipulate "a resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance."

SENATE BILL 18

Senate Bill 18 (SB 18) was signed into law in September 2004 as Government Code §65352.3. SB 18 requires local (city and county) governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places through local land use planning. SB 18 states that local governments must submit any proposals for revisions or amendments to general plans and specific plans to those California Native American Tribes that are on the Native American Heritage Commission's (NAHC) contact list and have traditional lands located within the city or county's jurisdiction. Local governments must also conduct consultations with these tribes prior to adopting or amending their general plans or specific plans.

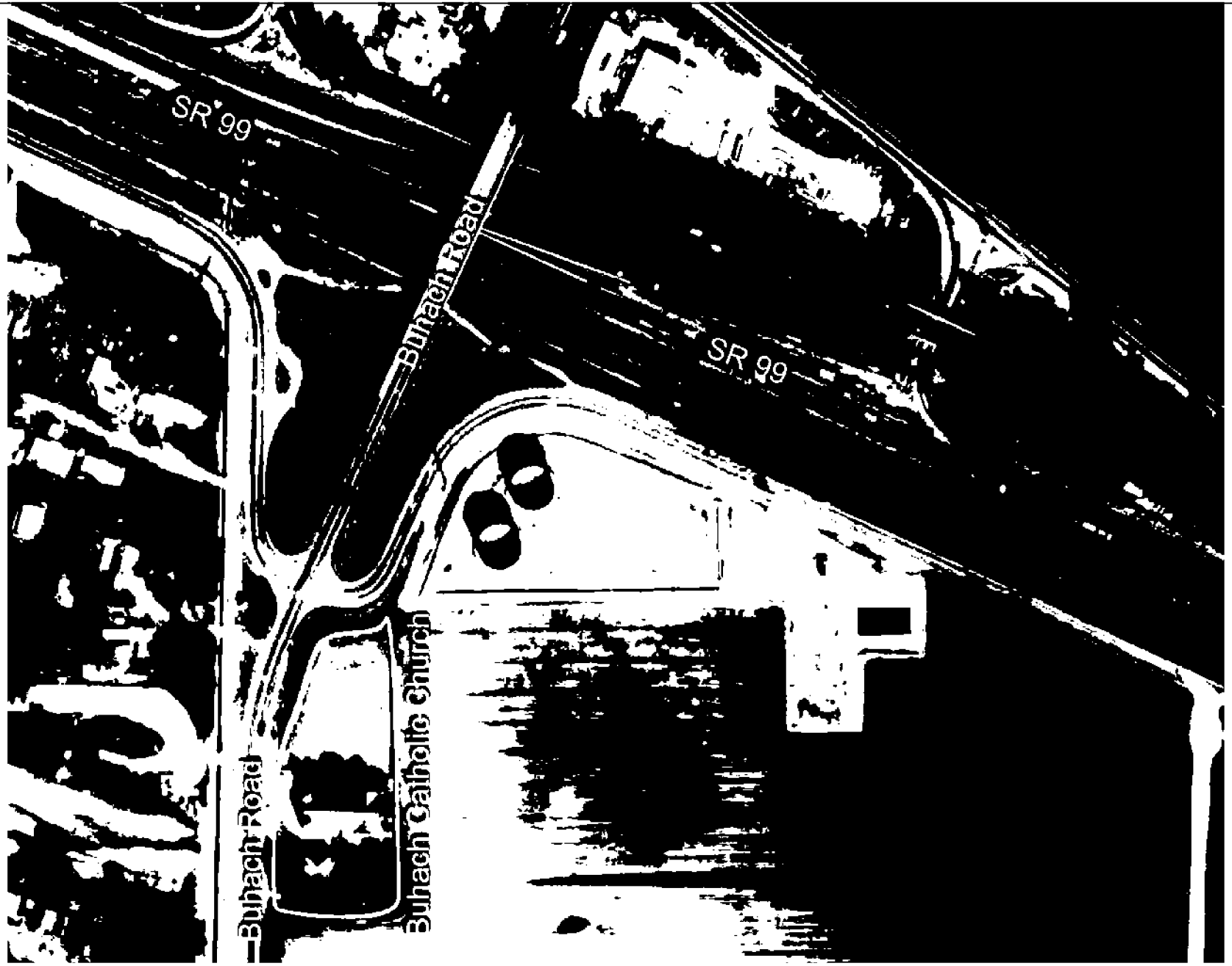
CITY OF ATWATER GENERAL PLAN

The following goals and policies related to cultural resources are taken from the City of Atwater General Plan (adopted 2004):

GOAL CO-9: Protect and enhance historical and culturally significant resources within the Planning Area.

Policy CO-9.1 Ensure consideration and proper handling of prehistoric, cultural, and archaeological resources during the development process.

Policy CO-9.2 Preserve and maintain structures and features identified as historically significant by the City, including but not limited to, the Bloss Mansion and Bloss Library.



ATWATER-MERCED EXPRESSWAY

Buhach Catholic Church

FIGURE 4.12-1

MERCED COUNTY GENERAL PLAN

The following goals, objectives and policies related to cultural resources are taken from the Merced County Year 2000 General Plan (adopted 1990):

GOAL 2: Soil, water, mineral, energy, historical and air resources are properly managed.

Objective 2.E Significant archaeological and cultural resources are recognized and managed.

Policy 21 Projects which affect archaeological sites and artifacts should be carefully managed to avoid damage.

Policy 22 The original architectural character of significant historic structures should be maintained whenever possible.

CASTLE AIR FORCE BASE REUSE PLAN

The Castle Air Force Base Reuse Plan (adopted 1996) discusses the economic reuse of the base following its closure. Castle Airport is situated immediately northwest of the existing Bellevue Road/Franklin Road intersection, adjacent to the project site and just outside the city limits of Atwater. The following goals and objectives related to cultural resources are relevant to the project:

GOAL 4: Environmental resources and public health and safety are protected.

Objective 4C Identify and consider important natural and/or cultural/archaeological resources in the redevelopment of the site.

Policy 7 Consider cultural and archaeological resources during the project review process.

Policy Consistency Analysis

As part of CEQA review for the AME project, extensive cultural resources investigations have been performed, including evaluations of archaeological and historical era resources in the project area. Native American consultation has taken place and no responses were received. Potential paleontological resource evaluations have also been performed. The mitigation measures presented below would reduce impacts to recorded or presently unknown (buried) cultural resources to a less-than-significant level. Therefore, the project would be consistent with the policies in the general plans and the base reuse Plans that pertain to protecting cultural resources.

4.12.3 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Appendix G of the CEQA Guidelines identifies environmental issues to be considering when determining whether a project could have significant effects on the environment. The project would have a significant cultural resources impact if it would:

a) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature during project related ground disturbance?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the 2007 CEQA Guidelines?

c) Disturb any human remains, including those interred outside of formal cemeteries?

d) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the 2007 CEQA Guidelines?

Significant Impacts

Impact PALEO-1: Project-related ground disturbance could have adverse impacts on unknown or unrecorded significant paleontological resources, including animal and plant fossil remains.

Although no paleontological resources have been recorded, such resources may be present due to the high sensitivity of the project area. As a result, potential impacts to paleontological resources could occur during terrain modification activities as a result of project construction. Unknown fossil remains, unrecorded fossil sites and geologic site data could be disturbed and adversely impacted with the project construction. Direct impacts to paleontological resources could result from earthmoving activity, widening of road cuts, grading and vegetation removal, as previously undisturbed fossil sediments may become buried and unavailable for scientific investigations in the future. Significant adverse impacts to paleontological resources could also arise from the construction of supporting facilities associated with project implementation.

Conversely, if fossil remains recovered during project construction are documented and protected, it could provide a more complete documentation of the diversity of animal and plant life that once existed in Merced County and could result in a more accurate reconstruction of the geologic and paleobiologic history of the Central Valley.

An appropriate mitigation program would work to reduce potential impacts to less than significant and would provide the benefits identified above. The mitigation measures proposed below are consistent with standard guidelines of the Society of Vertebrate Paleontology for mitigating adverse construction-related impacts on paleontological resources.

Mitigation Measure PALEO-1a:

Prior to the start of ground clearing operations, a qualified paleontologist shall establish a monitoring and mitigation program, including preconstruction coordination; construction monitoring; emergency discovery procedures; sampling and data recovery, if needed; preparation, identification, and analysis of the significance of fossil specimens salvaged, if any; museum storage of any specimens and data recovered; and reporting.

Mitigation Measure PALEO-1b:

Prior to construction, construction personnel involved with earth-moving activity shall be informed of the possibility of excavating paleontological resources and that such resources are protected under certain laws and regulations regarding proper notification procedures. This training should be performed by a qualified paleontologist.

Significance After Mitigation: Less than Significant

Impact CULT-1: Project construction would involve subsurface excavation and grading which could result in damage to or destruction of unrecorded archaeological resources, including Native American artifacts and/or human remains.

Although recent studies and surveys do not demonstrate evidence of intact archaeological deposits, there were some potential archaeological resources encountered in the northeastern portion of the project study area. It is possible that previously undiscovered prehistoric features and human burials in the subsurface soils could be revealed in this area, or anywhere within the project area. Such resources could potentially be exposed during excavation and earthmoving activities during project construction. Damage or destruction of these cultural resources would represent a significant impact.

Mitigation Measure CULT-1a:

If cultural resources are discovered during earthmoving or soil-disturbing activities, a monitoring program will be implemented to observe, assess, record and recover any important prehistoric features or human remains uncovered.

Mitigation Measure CULT-1b:

Provide a qualified, professional archaeological monitor and a qualified Native American observer in accordance with CEQA Guidelines, § 15064.5 (d) in the event that cultural resources are found during removal of the existing built environment during all initial exposure of native soil and during deep utility trenching.

Mitigation Measure CULT-1c:

In accordance with CEQA Guidelines, § 15064.5 (e)(1)(A)(B), in the event of the discovery or recognition of any human remains on the project site during development, there shall be no further excavation or disturbance of the site or any area reasonably suspected to overlie adjacent human remains until the coroner of the county in which the remains are discovered is to be contacted to determine that no investigation of the cause of death is required.

Mitigation Measure CULT-1d:

If the coroner determines the remains to be Native American:

- the coroner shall contact the Native American Heritage Commission within 24 hours;
- the Native American Heritage Commission shall identify the person or persons it believes to be most likely descended from the deceased Native American; and
- the most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code § 5097.98.

Significance After Mitigation: Less than Significant

Impact CULT-2: Construction of the Buhach Road overpass over SR 99 would occur in close proximity to the Buhach Catholic Church, an identified historic resource, potentially resulting in damage to, or destabilization of, the structure.

Project construction has the potential to adversely impact one historical architectural resource, the Buhach Catholic Church. This historical resource is the only known resource eligible for listing in the CRHP and the NRHP, as it has direct associations with the trend of Azorean Portuguese settlement in the Central Valley. The Church may be susceptible to material damages, as construction of the Buhach Road overpass over SR 99 would take place immediately adjacent to the building. **Figure 4.12-2** shows the proximity of the project to the church property.

Mitigation Measure CULT-2:

Construction work, including construction staging near the Buhach Church shall not take place within the legal parcel boundary (Assessor Parcel 025-170-001) of the church. Widening of the Buhach Road overpass would necessitate re-grading of the Church driveway but would not impair access to the main entrance of the building. Furthermore, the Church structure itself, which is the historic resource in question, would be unaffected by widening of the Buhach Road overcrossing.

Significance after Mitigation: Less than Significant. This mitigation would avoid both direct and indirect adverse impacts to the church structure and would fulfill the project proponent's responsibilities under CEQA, as it pertains to historical resources.

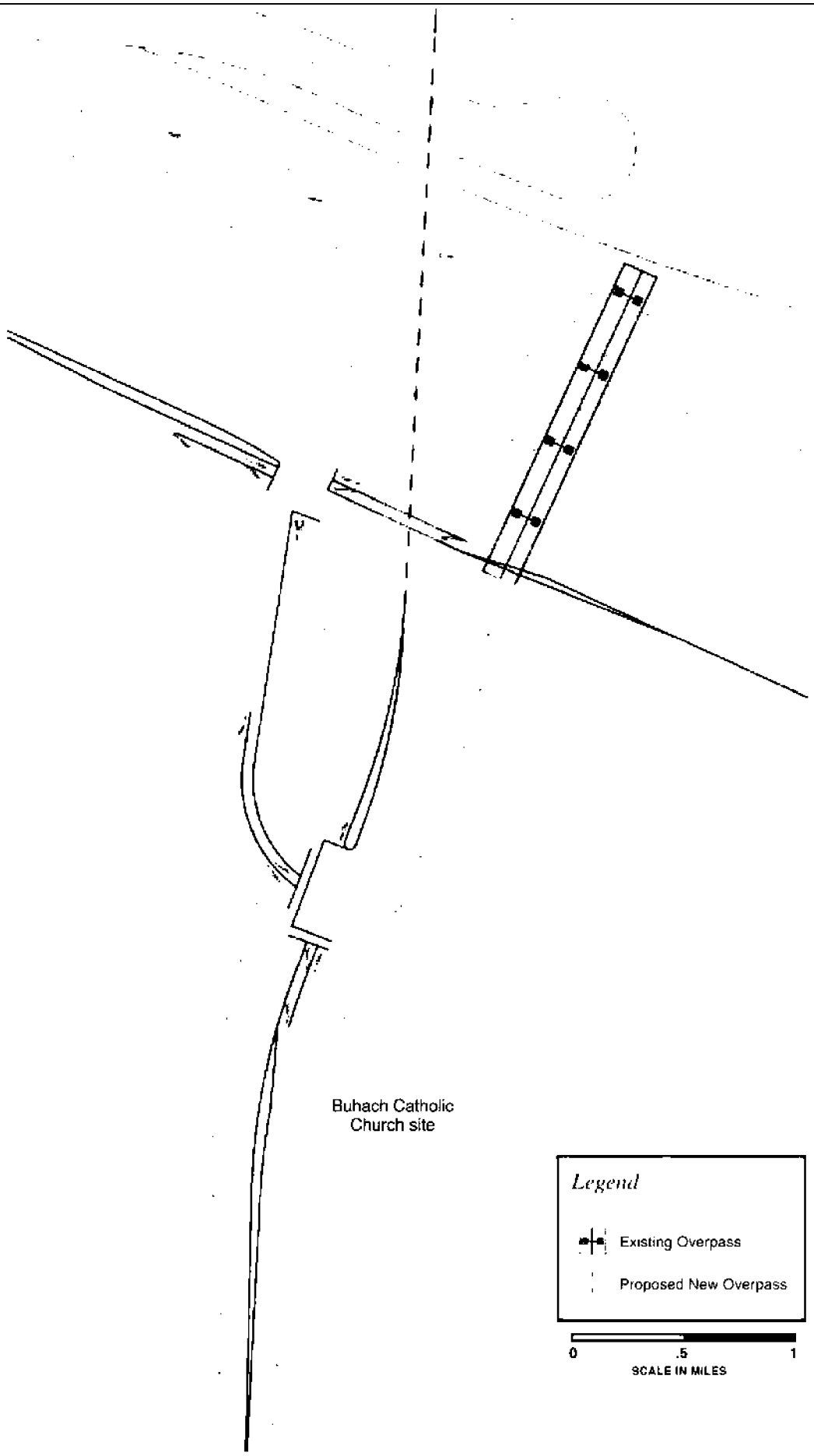
Impact CULT-3: If construction of the Buhach Road overpass would require construction activities to occur on the Buhach Catholic Church property, damage to, or destabilization of the Buhach Catholic Church, an identified historic resource, could occur.

Current project designs indicate that the Buhach Road overpass will be constructed outside of the property boundary of the Buhach Catholic Church. However, the driveways of the church may have to be modified to maintain safe access to local roads. If construction activities must occur on the Buhach Catholic Church property the following mitigation measures would apply and would adequately protect the historic building and property from significant impacts.

Mitigation Measure CULT-3:

- The project proponent would develop and implement measures to protect the character-defining features of the Buhach Catholic Church from damage. Such measures would be prepared in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the California Historical Building Code.
- Inadvertent damages to the character-defining features of the Buhach Catholic Church would be repaired in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the California Historical Building Code. The building and grounds would be photographed prior to construction establishing a baseline condition for assessing inadvertent damage, as described below.

Significance After Mitigation: Less than Significant.



ATWATER-MERCED EXPRESSWAY

AME Proximity To Buhach Catholic Church

FIGURE 4.12-2

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4.13 UTILITIES AND SERVICE SYSTEMS

This section describes the utilities serving the Atwater-Merced Expressway's project area, including wastewater, water supply, stormwater, and solid waste services. Regulations and policies affecting utilities are described. Service areas and local utility providers are identified, as well as current capacity levels. Impacts to utilities that could occur from implementing the project are evaluated, focusing on utility line relocations.

The description of the utility systems is based on correspondence with the service providers that serve and are in the vicinity of the project study area, supplemented by utility information contained in the Merced County and City of Atwater General Plans.

4.13.1 EXISTING CONDITIONS

Physical Setting

WATER

Domestic and agricultural water is provided to Merced County by local irrigation and urban water districts. The districts receive water from multiple sources, including the Central Valley Project, the State Water Project (SWP), the Merced River, the pumping of groundwater, the recirculation of drainage water, and from purchases from larger water districts. Domestic water within the project area is provided by approximately 25 groundwater wells.[1] Agricultural water is provided by Merced Irrigation District (MID) canals and through the pumping of groundwater.

The City of Atwater obtains its water supply for domestic uses from 10 groundwater wells and a one-million gallon water tank that is used for peak period storage and fire flows. The wells have an approximate total production capacity of 17,600 gallons per minute (gpm). An average of 5,097 gpm of water are pumped per day.[2]

WASTEWATER

Wastewater service within Merced County is generally handled on-site, with individual septic systems for a single building (such as a residence or business), or for a small cluster of buildings. Local sanitation districts are set up for County communities with a population greater than 500, where wastewater for all users in the area is collected and processed by the district.[3] The Franklin/Beachwood Community within Merced County,

[1] Jacobs, Kellie. Public Works Engineering Administrator. Merced County Public Works Department. Telephone interview. 4 October 2007.

[2] City of Atwater. 2000. General Plan- Land Use, Prepared by Pacific Municipal Consultants. July 24, 2000.

[3] Merced County. 1990. General Plan- Land Use. December 1990.

for example, has a local wastewater district, as its population was 4,410 in 2005.[4] However, the majority of residences and businesses within the project study area have private septic systems for wastewater treatment.

The City of Atwater provides municipal wastewater service to the majority of residents and businesses within City limits. The City's system is comprised of a pipeline system, a pumping plant and a treatment facility. The treatment plant is located to the south of SR 99 and handles an average flow of 4.8 million gallons per day (MGD), with a capacity of 6 MGD.[5] The City of Atwater is examining the feasibility of expanding the capacity to 12 MGD beginning in 2009.

STORMWATER

Stormwater containment and treatment in Merced County is generally handled either on-site or by local service districts that provide maintenance and operational services to stormwater systems. The County manages approximately 20 stormwater drainage basins located in close proximity to the project area. The basins are interspersed in the residential developments to the west of Buhach Road, between SR 140 and Bellevue Road.[6]

There are several canals and creeks that receive stormwater in Merced County, including Canal, Black Rascal, and Bear Creeks. The project study area crosses Canal Creek near SR 99. From this crossing, Canal Creek flows about 1.5 miles south and connects with Black Rascal Creek. Black Rascal and Bear Creeks also directly receive stormwater flows that originate in the southern portion of the project area. For a more detailed discussion of the receiving bodies of water, refer to **Section 4.9, Hydrology and Water Quality**.

The City of Atwater uses a storm drainage system to channel and contain stormwater that falls within City limits during major rain events. The City's storm drainage system consists primarily of retention basins and detention basins that discharge to a natural drain (back into groundwater) or into the Merced Irrigation District (MID) canal. There are 13 detention basins and 16 stormwater lift stations in the City, with pumping capacities ranging from 75 gallons per minute (gpm) to 8,000 gpm. The City of Atwater and the Merced Irrigation District (MID) set a maximum rate of discharge of stormwater into the canal system through a system of metering. [7]

SOLID WASTE SERVICES

There are two active solid waste landfill facilities servicing Merced County. The North Highway 59 disposal site is located northeast of the intersection of SR 59 and Old Lake Road; the second facility, the Billy Wright disposal site, is located in the western portion of Merced County. The North Highway 59 disposal site was expanded in 2001 to extend its capacity through 2020. The Billy Wright site, however, has a remaining capacity of approximately 30 percent and is slated for closure in January 2010. Merced County coordinates the operations and maintenance of the landfill servicing the project location. Solid waste generated within the

[4] Merced County Association of Governments. Data Summary Book. January 2004..

5 City of Atwater. 2000. General Plan- Land Use, Prepared by Pacific Municipal Consultants. July 24, 2000.

[6] Jacobs, Kellie. Public Works Engineering Administrator. Merced County Public Works Department. Telephone interview. 4 October 2007.

[7] City of Atwater. 2000. General Plan- Land Use, Prepared by Pacific Municipal Consultants. July 24, 2000.

County is collected and transported to the landfills by Modesto Disposal, a division of Waste Management Inc.

The North Highway 59 disposal site provides landfill services for the City of Atwater as well. The solid waste generated within the City is collected and transported by a private contractor, Browning Ferris Industries (BFI) to the landfill.

4.13.2 REGULATORY SETTING

COUNTY OF MERCED GENERAL PLAN

The following goals, objectives and policies related to cultural resources are taken from the Merced County Year 2000 General Plan (adopted 1990):

Policy 4-2	Effects on the capacity and distribution system of water, sewer and storm drainage facilities shall be considered in reviews of discretionary and non-discretionary permits.
Objective 10.B	County services and facilities are not reduced below minimum acceptable levels as a result of new development.
Policy 10-2	Ensure the new development does not erode current levels of County service.

CITY OF ATWATER GENERAL PLAN

There are no relevant objectives and policies related to utilities and services systems in the City of Atwater General Plan (adopted 2000).

SOLID WASTE

Assembly Bill 939

The California Integrated Waste Management Assembly Bill 939 (AB939) requires all cities and counties in California to divert 50 percent of their waste stream from conventional landfills to alternative means of disposal by 2000. Programs to reach these goals include the promotion of source reduction, recycling, and composting activities. Cities and counties are also required to prepare Source Reduction and Recycling Elements (SRRE), which demonstrate how they would achieve the mandated goals through the implementation of diversion programs.

4.13.3 POLICY CONSISTENCY ANALYSIS

The project would be consistent with the Merced County General Plan policies and objectives related to public utilities and service systems. As part of the analysis, water, sewer and storm drainage facilities within and adjacent to the project area have been examined to ensure that their ability to provide services is not degraded, consistent with Policy 4-2. The project does propose the realignment of a stormwater facility

(Canal Creek). This realignment would not affect the current capacity or existing services of this facility, thus remaining consistent with Objective 10.B and Policy 10-2.

Consistency with AB 939 is addressed in the impacts and mitigation measures section below.

4.13.4 IMPACTS AND MITIGATIONS MEASURES

Thresholds of Significance

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. The project would have a significant utilities and service system impact if it would:

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 or expansion of existing facilities, the construction of which could 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 could 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 capacity to accommodate the project's solid waste disposal needs.

g) Comply with federal, State, and local statutes and regulations related to solid waste.

Less Than Significant Impacts

The AME project would not require a water supply and would not require the services of a water treatment facility.

The project consists of a new roadway and would not require the ongoing use of water once constructed. The roadway would not establish an increased demand for water within the area. During construction a water supply could be used to control dust within the area; however, the amount of water used during the constructional phase would be minimal. As there would be no need for a continuous water supply, and the project would not place additional demands on any water treatment facility. Therefore, no impacts related to water demand are anticipated.

The AME project would not generate wastewater and would not require the use of wastewater treatment facilities.

As the project involves the construction of a roadway, project operation would not generate wastewater or necessitate wastewater treatment. The project does not propose construction of commercial or residential development and would therefore not increase the demand for wastewater services within the area. The project would not generate wastewater requiring treatment during either construction or operational phases. Therefore, no impact to wastewater treatment requirements or the existing capacity is anticipated.

The AME project would be designed such that it would not substantially increase the peak volume of stormwater entering stormwater conveyance facilities, and new facilities would not be required to prevent flooding.

Depending on the Alternative selected, construction of the AME project would require the realignment of one or two sections of Canal Creek, a County stormwater conveyance facility. These realignments would occur at the intersection of Bellevue Road and Fox Road and the intersection of the AME and SR 99. The alterations to the stormwater drainage facility would not alter the existing capacity of Canal Creek to contain stormwater during major rain events. Realignment of Canal Creek would not constitute a significant change in the facility's ability to provide the existing service, nor would it alter the hydrology of the waterway. Additionally, alterations to Canal Creek would not impact flooding within the area, as the capacity of the waterway would remain consistent with existing conditions.

As the realignments of Canal Creek are located within the project study area, potential impacts to the existing environment would not produce any further impacts than what has already been identified during the survey of the project area. Construction of the AME would, however, create new impervious surfaces which could result in a slight increase in stormwater runoff. For more information on changes to hydrology in the project study area, see **Section 4.9, Hydrology and Water Quality**. Therefore, impacts to the stormwater drainage facility's ability to provide its existing services and impacts to the environment would be considered less than significant.

Construction of the AME project would require the relocation of local overhead power lines and overhead electric transmission lines within the project area but would not create additional impacts outside the project area.

The project would require relocation of overhead electric ~~utility~~ **transmission** lines owned by both PG&E and MID at the intersections with Santa Fe Drive and SR 99 **and local overhead power lines at other locations within the project limits.** Alternative 1A would require the PG&E **transmission** line **to** be raised and relocated and the MID **transmission** line relocated at the intersection with Santa Fe Drive. **Figure 4.13-1** shows alterations to existing ~~utility~~ **transmission** lines at the intersection with Santa Fe Drive caused by Alternative 1A. At the intersection with SR 99, Alternative 1A would require the MID line be raised in two different locations **Figure 4.13-3** shows how Alternative 1A would alter the MID line. **Modified** Alternative 1B would require the existing PG&E **transmission** line **to** be raised and the existing MID **transmission** line be relocated at the intersection with Santa Fe Drive. **Figure 4.13-2** shows alterations to existing ~~utility~~ **transmission** lines at the intersection with Santa Fe Drive caused by **Modified** Alternative 1B.

These alterations to existing ~~utility~~ **transmission** lines would not alter PG&E or MID's ability to provide power to the region. And because they are located within the project area, they would not produce any additional impacts than what has already been identified during survey of the project area. **Local overhead power lines would be relocated outside the AME construction limits as necessary. Any utility relocations would occur within the environmental study area for which impacts have already been calculated.** Therefore, impacts caused by utility line alterations would be considered less than significant.

Significant Impacts

Impact UTIL-1: Project construction would require the demolition of several structures, including the Buhach Road overcrossing and several residential units, as well as the removal of vegetation and soil. This debris and other construction material could affect the capacity and lifespan of local landfills, and affect the ability of Merced County and the City of Atwater to meet its AB 939 reduction targets.

The project would require the demolition of the Buhach Road overcrossing, the demolition of residential units and businesses, as well as the removal of vegetation and soils the project right of way area. Demolition of structures would generate solid wastes, including concrete, metals, glass, wood and plastic, and substantial quantities of green wastes and soils would be generated from vegetation removal and grading activities. These materials could have a significant impact on local landfills, particularly because the landfills that serve the project area have limited capacity.

The project-generated materials, if sent to a landfill, would also affect the ability of the City of Atwater and Merced County to meet the source reduction goals required under AB 939. As previously stated, AB 939 requires cities and counties to divert 50 percent of their solid waste away from conventional landfills. The mitigation measure below would reduce the burden on local landfills and contribute to the City of Atwater and Merced County's attainment of their AB 939 targets.

Mitigation Measure UTIL-1:

Prior to construction, MCAG shall prepare a Solid Waste Management Plan for the project that demonstrates that at least 50 percent of project-generated solid waste is being recycled, reused or diverted from landfills. Elements of the Solid Waste Management Plan could include, but are not limited to, the following:

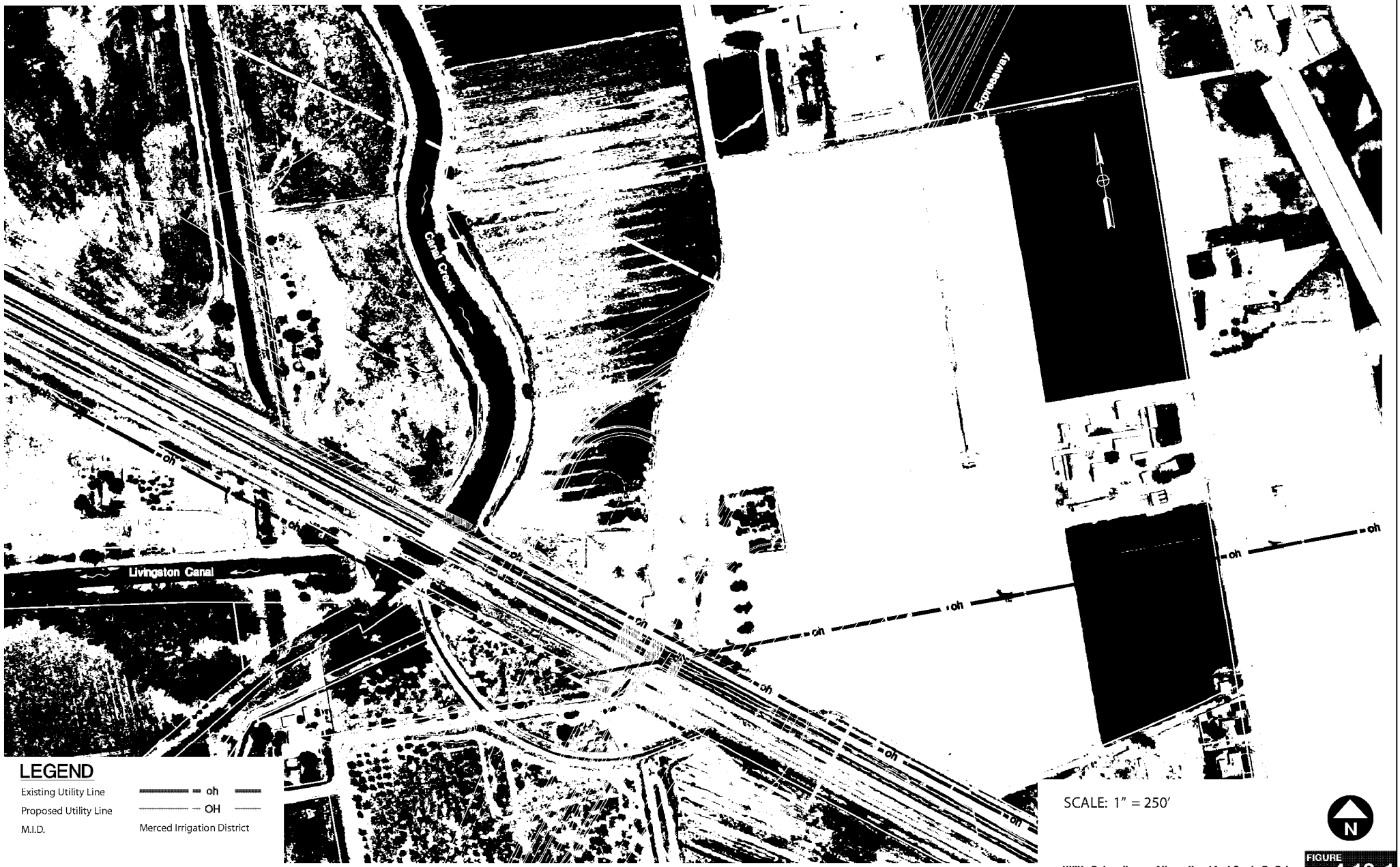
- Recycling of metals and other recyclable materials generated during construction.
- Regrinding and reuse of the concrete debris generated by demolition of the existing Buhach Road overpass.
- Balancing excavated soils by reusing them in other areas, such as for fill around the foundations of elevated project features.
- Removed vegetation reused, such as through mulching, or composted at a composting facility.

The City of Atwater and Merced County Public Works departments shall approve the Solid Waste Management Plan prior to the issuance of any building permits. Given that the types of solid waste

that would be generated are highly recyclable or green waste, such as soil and vegetation, **it is anticipated a source reduction rate of 50 percent or higher is easily attainable.**

Significance After Mitigation: Less than Significant.

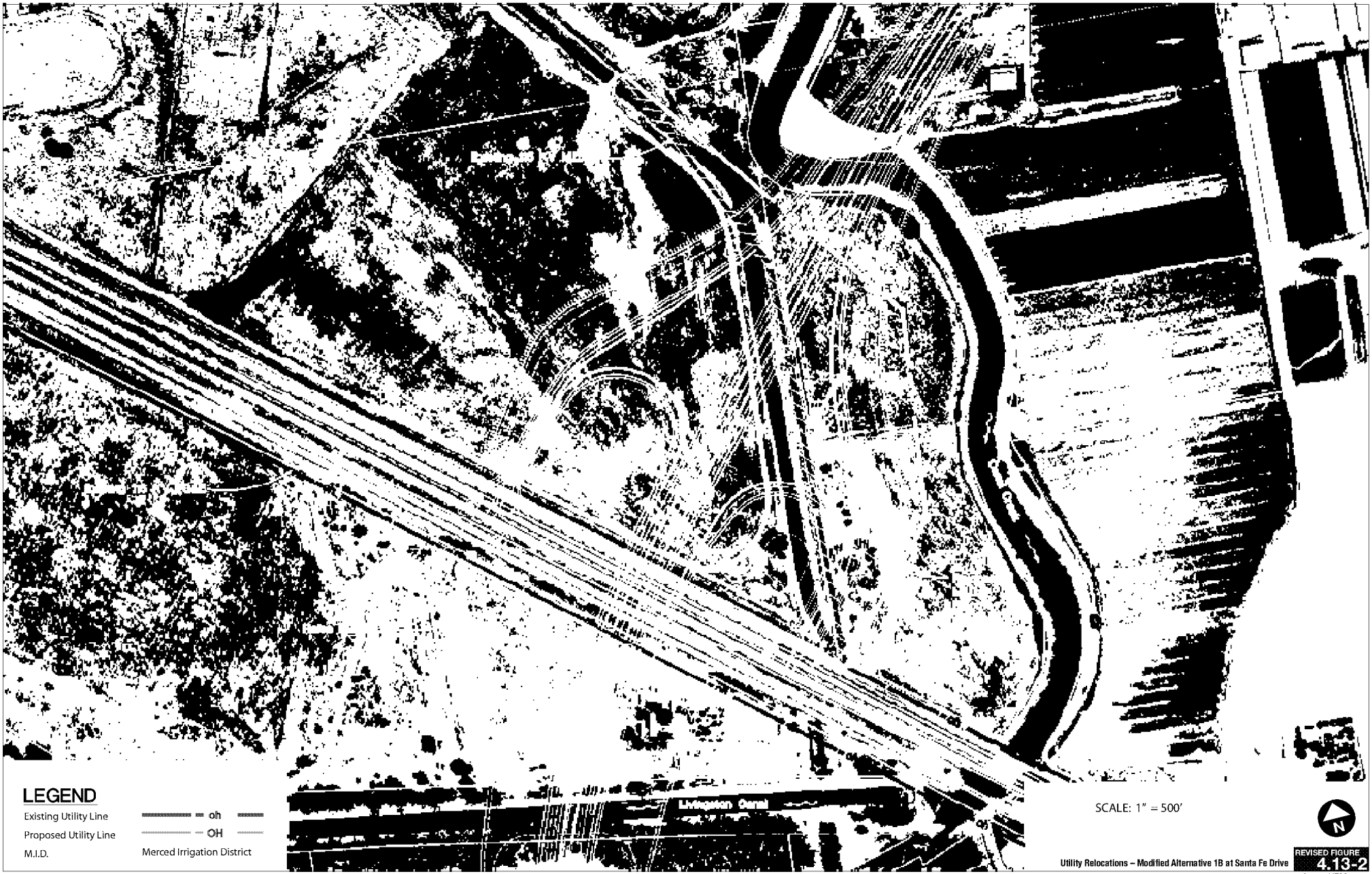
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Utility Relocations – Alternative 1A at Santa Fe Drive

FIGURE 4.13-1

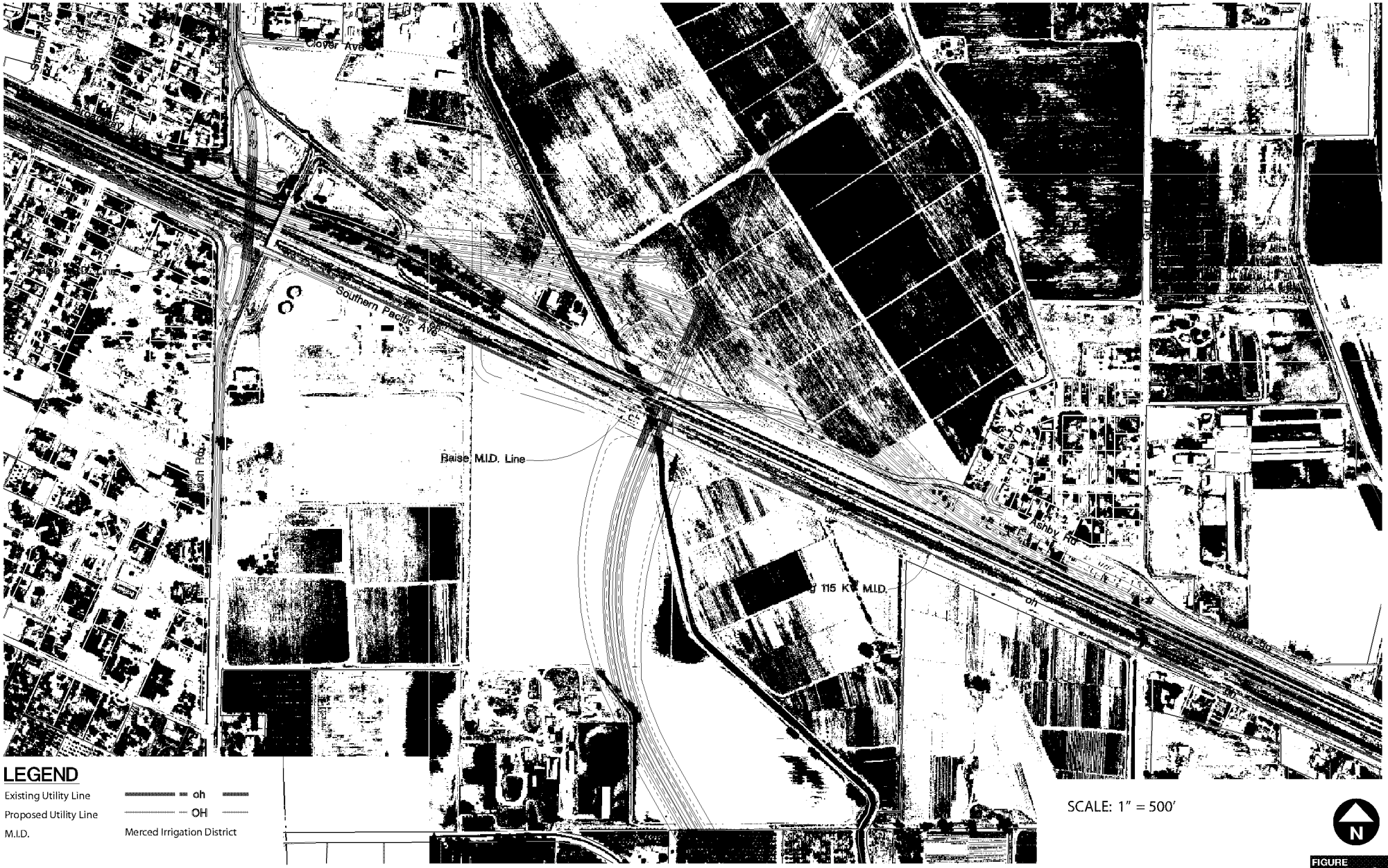
Source: MCAG, 2007.



Utility Relocations – Modified Alternative 1B at Santa Fe Drive

REVISED FIGURE 4.13-2

Source: MTCO, 2008.



Utility Relocations – Alternative 1A and Modified Alternative 1B at SR99

FIGURE 4.13-3

Source: MCAG, 2007.

4.14 PUBLIC SERVICES

This section describes and evaluates the project's affects to the public services (**schools, parks,** police, fire and emergency medical services (EMS)) that serve the project study area. The existing condition information in this analysis was derived by contacting individual public service providers and reviewing information provided in jurisdictional plans. The regulatory setting discussion is comprised of goals and policies. Potential adverse effects of the AME project on public services are evaluated, and mitigations are provided for any identified significant impacts.

4.14.1 EXISTING CONDITIONS

Physical Setting

Figure 4.14-1 shows the locations of the existing public services within and near the project study area.

POLICE PROTECTION

Merced County Sheriff Department

The Merced County Sheriff Department service area includes approximately 26,000 square miles of unincorporated Merced County. The Department has approximately 250 full-time employees including approximately 140 sworn officers.[1] In addition, the Department has part-time staff, including volunteers. The Department is separated into operational and corrections divisions with approximately 80 employees as part of the operational staff.[2] Operational staff include patrol officers, detectives who work on cases involving burglary, homicides, and violent crimes; special assignment officers who work on cases involving fugitive apprehension, narcotics, and gang enforcement; and school resource officers. The operational staff also includes law enforcement officers and coroner staff that respond to highway accidents and vehicular fatalities.

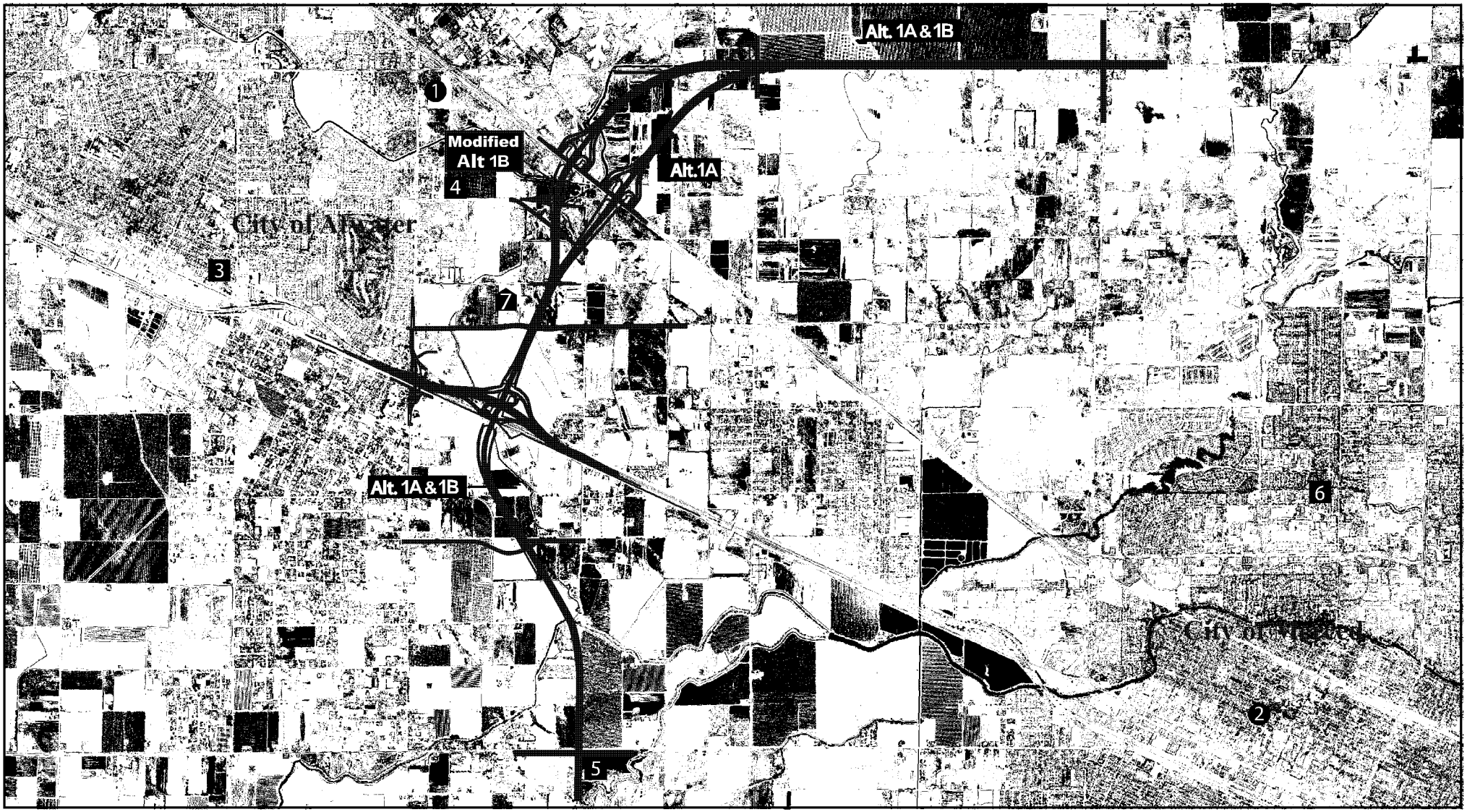
There are approximately 125 correctional officers including approximately 25 court deputies that make up the correctional division of the Sheriff Department.[3]

The Sheriff Department divides the large county area into different service areas. The AME project study area is within the Department's "north service area", which is served by staff assigned to this area and by the Department's main office, located in the City of Merced at 700 West 22nd Street. There are three stations that would serve the project study area, two in the north service area and one at the Merced main office.

[1] Phone conversation with Deputy Barile, Public Affairs Officer, Merced County Sheriff's Department, July 7, 2007.

[2] Phone conversation with Deputy Barile, Public Affairs Officer, Merced County Sheriff's Department, July 7, 2007.

[3] Phone conversation with Deputy Barile, Public Affairs Officer, Merced County Sheriff's Department, July 7, 2007.



Legend:

1. Atwater Police Department (750 Bellevue Road)
2. Merced County Sheriff Department (700 W. 22nd St.)
3. Atwater Fire Department Station 21 (699 Broadway)
4. Atwater Fire Department Station 22 (2006 Avenue Two)
5. Merced County Fire Departmentt Station 82 (961 N. Gurr Rd)
6. Merced County Fire Departmentt Station 85 (3360 N. McKee Rd)
7. Proposed Atwater Elementary School Site

Not to Scale

N

ATWATER-MERCED EXPRESSWAY

Location of Public Service Providers

REVISED FIGURE 4.14-1

Source: MCAG, September 2007. Departments, 2007.

The two north service area stations are located 9481 Shank Road in Delhi and 455 E. 13th Street in Merced (which includes the Coroner's Facility). Due to concerns over the ability to house staff and inmates, there has been some preliminary planning to investigate the potential to relocate the main office to a new location.[4] Current equipment is considered adequate to meet department needs.

The Department does not have an established level of service such as an officer to person ratio or response time.[5] Current response times vary greatly due to the large service area. Response times vary based on call volume, location of the call to the nearest patrol officer, and the nature of the call. The average county-wide response time is approximately 20 minutes. There are currently six open unfilled positions at the department and therefore the Department is not considered to be fully staffed.

The Department has mutual aid agreements with the City of Atwater and City of Merced Police Departments. Should one department be in need of assistance (due to an emergency or multiple simultaneous service calls) they may request aid from another department, who would be authorized to respond.

Atwater Police Department

The Atwater Police Department (APD) provides police services to areas within the approximately 4.4 square mile area inside City boundaries. The APD currently operates from one main police station located at 750 Bellevue Road.[6] The department has 42 employees including 32 sworn officers, 15 of which are patrol officers. Other sworn officers in the Department include investigative, school resource, narcotics, or administrate officers.[7] The APD also includes 16 Police Service Volunteers and 10 non-sworn employees.[8]

The APD has a Mutual Aid Agreement with the Merced County Sheriff's Department.[9] The average response time for emergency calls in the City of Atwater is less than one minute.

The APD provides approximately 1.5 police officers per 1,000 residents.[10] Since the established level of service in the City of Atwater is 1 police officer per 1,000 residents, current staffing levels are considered adequate. The department does not have any plans to add additional staff or upgrade current facilities and the APD's equipment is considered adequate to meet current needs.

FIRE PROTECTION AND EMERGENCY SERVICES

Merced County Fire Department

The Merced County Fire Department is a full service fire department providing emergency services to all unincorporated areas of the County through a network of fire stations, personnel, and equipment. This

[4] Phone conversation with Deputy Barile, Public Affairs Officer, Merced County Sheriff's Department, July 7, 2007.

[5] Phone conversation with Deputy Barile, Public Affairs Officer, Merced County Sheriff's Department, July 7, 2007.

[6] Letter from Assistant Chief Frank Pietro at the APD, dated September 13, 2007.

[7] Phone conversation with Assistant Chief Frank Pietro at the APD. July 25, 2007.

[8] Letter from Assistant Chief Frank Pietro at the APD, dated September 13, 2007.

[9] Phone conversation with Assistant Chief Frank Pietro at the APD. July 25, 2007.

[10] Phone conversation with Assistant Chief Frank Pietro at the APD. July 25, 2007.

network is comprised of twenty stations and a fleet of approximately eighty vehicles. The department is administered through a contract with the California Department of Forestry and Fire Protection (CDF). Fire suppression employees are CDF employees and support personnel are Merced County employees.

The fire stations in Merced County that serve the project study area are Station 82 located at 961 North Gurr Road, Station 89 located at 3405 Hardstand Ave (at the former Castle Air Force Base), Station 81 located at 735 Martin Luther King Jr. Way, and Station 85 located at 3360 N. McKee Road (see **Figure 4.14-1**). Firefighters at these stations are First Aid and CPR certified. All stations have one engine each. In addition, Station 81 has one water tender and Station 89 has one hazardous materials response unit. Each of these stations has one paid employee.

The response goal of the Merced County Fire Department is to provide the highest level of protection of life and property by:

- Applying an extinguishing agent to all fires within seven minutes of dispatch;
- Having a full alarm assignment in operation within ten minutes of dispatch;
- Containing 95 percent of all fires with the first alarm assignment; and
- Rendering Medical Aid within six minutes of dispatch.

The current average response time is seven minutes from the time of dispatch. However, response times have been increasing and the department generally has only one paid Fire Department staff member in each station. Therefore, the current staffing levels are considered inadequate by the Merced County Fire Department.[11]

Merced County Ambulance Services

Riggs Ambulance Service is contracted to provide ambulance services including basic and advanced life support services to the unincorporated project study area.

Atwater Fire Department

The Atwater Fire Department (AFD) provides fire protection services for the City of Atwater. The station most likely to serve the project study area is Station 22, located at 2006 Avenue Two (see **Figure 4.14-1**).[12] Equipment at this station includes 2 fire engines.

AFD is staffed with 14 full-time safety employees consisting of one Fire Chief, one Fire Battalion Chief, five Fire Shift Captains, and seven Fire Engineers.[13] The AFD also has 15 part-time safety members including 15 Reserve Firefighters. The target response time goal for the AFD is five minutes or less. The current response time is five to six minutes. The AFD provides EMS services as well as fire protection for the City.

[11] Phone conversation with Assistant Chief Frank Pietro at the APD. July 25, 2007.

[12] Letter from Ed Banks, Fire Chief, received September 27, 2007.

[13] Letter from Ed Banks, Fire Chief, received September 27, 2007.

The AFD currently employs 2 personnel per engine company (there is one company from each station). The Department does not consider current staffing levels adequate because it does not meet National Fire Protection Association (NFPA) 1700 or NFPA 1710 criteria, which identify the need for a four personnel engine company.[14] AFD staffing is considered an acceptable level of risk by the City and current staffing levels reflect a policy decision made by the City Council. The Council has awarded a consultant to complete a Fire Master Plan Study for the City, which may suggest future policy changes in staffing levels.

SCHOOLS

Atwater Elementary School District

The Atwater Elementary School District **(AESD)** has purchased property for a future school site**, referred to as the Avenue One school site for the purposes of this analysis,** located in the project study area.[15] This school site is located on the north side of Avenue One, just east of Canal Creek (shown in **Figure 4.14-1**). There are plans to build a school on this property that will house 800 preschool through grade eight students ~~by the 2009-2010~~ **beginning around the 2012** school year. **The AESD has already begun Avenue One school site planning activities, and received preliminary approvals from the California Department of Education (CDE).**

PARK AND RECREATION FACILITIES

There are no parks or recreational facilities located in the project study area.

4.14.2 REGULATORY SETTING

MERCED COUNTY GENERAL PLAN

Fire and Emergency Services

The Merced County General Plan states that the County is to provide life and property fire protection to County Responsibility Areas under contracts with the CFD, various municipal fire departments that may share County/City facilities, and one independent fire district serving the City of Atwater.

CITY OF ATWATER GENERAL PLAN

Fire Services

The City of Atwater General Plan establishes a goal of ensuring adequate fire protection for its residents and businesses. The Atwater General Plan recommends the following two policies to support this goal: 1) maintenance of the existing target response time of five minutes or less for emergency fire calls through adequate staffing, proper distribution of fire stations and equipment, and the use of automatic aid agreements; 2) requirements for all new development to contribute funding toward necessary fire facilities and equipment.

[14] Email from Ed Banks, Fire Chief, received October 5, 2007.

[15] Letter from Melinda Hennes, Superintendent of the Atwater Elementary School District, July 11, 2007.

Police Services

The Atwater General Plan has defined the goal of ensuring adequate law enforcement services for residents and businesses in the community. The Atwater General Plan recommends the requirement all new development to contribute funding toward necessary law enforcement facilities and equipment.

SCHOOL SITE REQUIREMENTS

The State of California maintains very strict standards for the approval of school site placement. Title 5, Section 4010(e) of the California Code of Regulations states that "school sites should not be located adjacent to a major traffic thoroughfare when studies indicate that students may be exposed to high levels of noise or safety concerns from exposure to hazardous materials transported over the roadway." The California Code of Regulations, Title 5, Section 14010(e), states: "The site shall not be adjacent to a road or freeway that any site-related traffic and sound level studies have determined will have safety problems or sound levels which adversely affect the educational program." ~~The California Code of regulations also establishes requirements for air pollution sources near school sites.~~ In addition to State law, the Federal Highway Administration's (FHWA) document, *Safe Route to Schools*, provides guidelines to allow safe walking and biking routes for school attendees.

California Senate Bill (SB) 352, Chapter 668, Statutes of 2003, provides new requirements for new school construction projects and the acquisition of a new school site within 500 feet of a busy freeway or traffic corridor. SB 352 defines a busy freeway or traffic corridor as averaging more than 50,000 vehicles per day in rural areas and 100,000 vehicles per day in urban areas. If a proposed school boundary is within 500 feet of such a roadway, the school district must determine if air quality at the site poses a significant health risk to the students at the school site.

4.14.3 POLICY CONSISTENCY ANALYSIS

As discussed below in the discussion of impacts and mitigation measures, the project would not, with mitigation, interfere with the provision of adequate emergency services. Therefore, the project would remain consistent with the City of Atwater and Merced County General Plans.

Since **Alternative 1A and Modified** Alternative 1B would be constructed ~~through a future~~ **within 500 feet of a** school site **(Avenue One school site)** ~~and Alternative 1A would be within 1,580 feet or three-tenths of a mile from the same school site,~~ the AME project would be required by law to ensure consistency with regulatory requirements for the location of and safe transportation associated with schools. **For more information on the requirements for safe transportation, see Section 4.14.4, Impacts and Mitigation Measures, below.**

A noise evaluation was conducted to assess possible noise impacts of the AME project alternatives on the Avenue One school site. Details of the analysis are included in Section 4.6, Noise, of this Recirculated Draft EIR. The noise levels generated by the project at the Avenue One school site would be below the applicable Merced County General Plan noise thresholds for a school use. Even though the project would not result in a significant noise impact at the school site, the noise evaluation analyzed the effectiveness of a sound wall along the southern edge of the Avenue One school site to determine if it would substantially reduce the noise generated by the project. The

noise evaluation determined that a sound wall in this location would not result in a noticeable reduction in traffic noise levels. Additionally, under Modified Alternative 1B, noise generated by the project would already be greatly reduced at the southeastern corner of the Avenue One schools site because of the depressed roadway proposed between Green Sands Avenue and Avenue Two. The depressed roadway in this area would further act to shield the school site from substantial traffic noise.

As either alternative would be located within 500 feet of an approved school site, the Avenue One school site would also be subject to the requirements set forth in SB 352. Under SB 352, school sites located within 500 feet of a busy freeway or transportation corridor must be evaluated to determine if air quality at the site poses a significant health risk to the students at the school site. As part of the air quality analysis for the AME project, potential air quality impacts were addressed by modeling the diesel particulate matter concentrations that would be generated by the project at the school site and computing the associated cancer risk. As discussed in Section 4.7, Air Quality, the analysis determined that the increase in cancer risk due to project-generated air pollutants would not be considered significant under the Air District's guidelines. Therefore, construction of either of the AME alternatives would be consistent with SB 352 in respect to roadway air emissions and proximity to a school site.

4.14.4 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Appendix G of the CEQA Guidelines identifies the following environmental issues to be considered when determining whether a project could have significant effects on the environment. The project would have a significant public services and recreation impact if it would:

a) Result in a substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered 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:

- Fire Protection
- Police Protection
- Schools
- Parks
- Other Public Facilities

b) 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.

c) Include recreational facilities or require the construction or expansion of recreation facilities which might have an adverse physical effect on the environment.

Less Than Significant Impacts

Given the nature of the AME project as an expressway, it would not result in the need for increased school or recreation facilities since it would not directly increase the population in the project study area. Potential impacts to schools and recreation facilities would occur only if the expressway would physically conflict with existing school and recreation sites. Given the above, the impact discussion focuses on police, fire, and EMS services and the location of schools and recreation facilities within the project study area.

The project would not significantly change service demands ~~or response times~~ for police, fire and EMS Service.

The AME project would construct a new expressway that would assist in providing an alternative connection between SR 59, Santa Fe Drive, SR 99 and SR 140, as well as improving local access to these major roadways. In general, the project would assist in accommodating regional traffic growth and would reduce future anticipated traffic congestion on the area's existing roadways. It is anticipated that the improvements to the regional transportation network associated with development of the AME would serve to reduce the number of traffic accidents in the area and would not significantly increase service demands on emergency service providers. Further, the AME project would provide an expressway that emergency service providers could use to more quickly respond to emergency service calls in the area. Therefore, the project's ~~effects on response times and~~ service demands for emergency service providers are seen as less than significant, or potentially beneficial if accidents are reduced and/or can be responded to more quickly.

Furthermore, the Merced County Fire Department has confirmed that it has the necessary emergency procedures and protocols in place that could address any potential accidental releases related to the transport of hazardous materials along the AME. Refer to Section 4.10, Hazards and Hazardous Materials, for further discussion of potential impacts related to the transport of hazardous materials[16], and of the procedures and protocols in place that would address an emergency of this nature.

The project would not alter existing recreational facilities or create new recreational facilities.

The proposed project would not directly impact a recreational facility, as there are no recreational facilities located within the study area. As an expressway, the project would not create a greater need for recreational facilities (including parks) because it would not directly result in the construction of new residential housing.

Significant Impacts

Impact PS-1: Emergency responders from the Merced County Fire Department Station 82 on Gurr Road could be delayed or at risk from the signalized intersections proposed for the project, particularly the intersection of North Gurr Road with SR 140 and the AME.

[16] Martin, Mikel, Fire Chief, Merced County Fire Department. Letter to the Atwater Elementary School District regarding the risks of a release of hazardous materials near the Avenue One school site, September 16, 2008.

During the course of preparing this EIR, the Merced County Fire Department Fire expressed concern that their fire apparatus from Station 82 on North Gurr Road would frequently use the AME to respond to emergency calls, and could be delayed or at risk of collisions, at the signalized intersections proposed for the project, particularly at the intersection of North Gurr Road with SR 140 and the AME. Station 82 is less than 0.1 miles from the intersection and fire department apparatus leaving from the station would need to cross this intersection quickly and suddenly in order to respond to calls for service. The Merced County Fire Department would also frequently use the AME to respond to service calls and would need to quickly traverse other major project intersections. The following mitigation measure is recommended by the Fire Department to reduce these potential impacts.

Mitigation Measure PS-1:

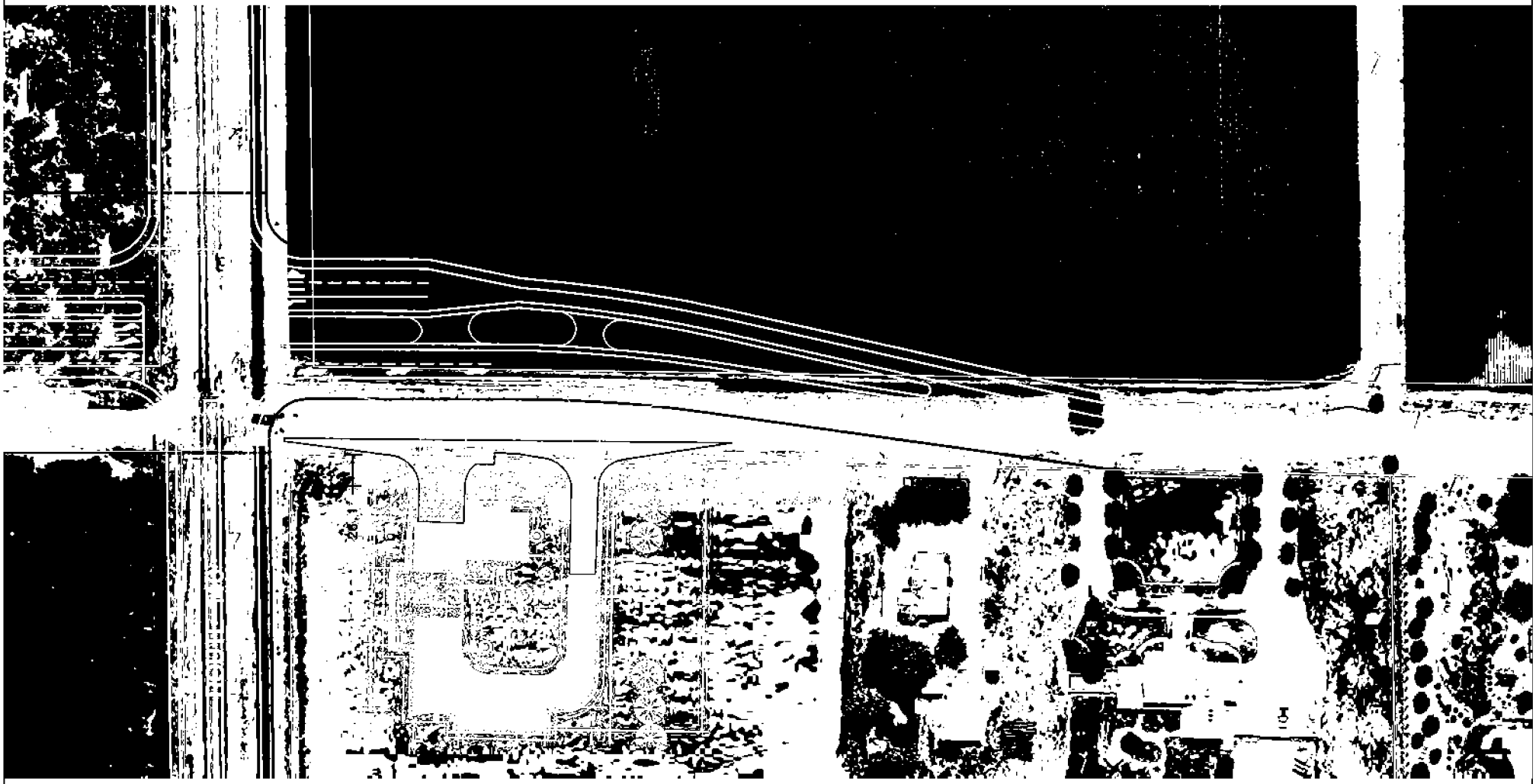
The project sponsor shall be responsible for installation of specialized traffic signal lights at all signalized intersections along the project alignment. These traffic signals shall be controllable by the Fire Department to ensure that fire apparatus may safely cross signalized intersections on a green light and that other traffic at the intersection is stopped by red lights. **In addition to the specialized traffic signals, the roadway alignment shall be moved to a further distance from the existing fire station, as shown in Figure 4.14-2. A paved break in the roadway median shall also be provided to ensure adequate fire station access and response times.**

Significance After Mitigation: Less than Significant

Impact PS-2: The project would result in changes in access to local roadways that could affect emergency service providers by altering the routes that are currently used to respond to service calls. This could adversely affect emergency response times.

As discussed previously, the AME project would generally improve local access to many areas around the project and decrease traffic congestion such that response times could potentially be shortened. However, as described in **Chapter 3, Project Description,** under either Alignment 1A or Alignment 1B, the project would include changes to a number of local roadway access points including terminating some local roads in the form of cul-de-sacs, constructing new interchanges, and extending roads or realigning portions of existing roads. These changes in access would affect how emergency service providers would travel to certain portions of the project area, and could increase response times if these changes in access are not well documented and are not incorporated into emergency response plans.

The most substantial change in access changes would be on the north side of SR 99, where the AME project would connect with a realigned segment of SR 99. Under both alternatives, construction of the project would result in the abandonment of Ashby Road between Valley Drive and Buhach Road. Additionally, the Buhach Road overpass would no longer connect with SR 99. Broadway Avenue would also be extended under the overpass, but would no longer connect directly with Buhach Road. At present, the Buhach Road interchange and Ashby Road provide access to and from SR 99 to a number of developed areas of Merced County, including: the residential development at the intersections of Ashby Road and Valley Drive (within Merced County); commercial areas east of Valley and north of SR 99; and residential areas west of the current SR 99/Buhach Road interchange. The SR 99/Buhach Road interchange also provides access via Broadway Avenue to residential areas of the City of Atwater further west and north of SR 99. Emergency Service



Legend:
- Proposed Roadway Modifications
- Proposed Right of Way
- Existing Parcel Boundaries
- Existing Fire Department Driveways

N

ATWATER-MERCED EXPRESSWAY

Fire Station Access

FIGURE 4.14-2

Source: Mark Thomas Co., 2008

providers currently use these and other roadways to respond to emergency service calls but would no longer be able to use these roadways and would have to find alternate routes. None of the areas discussed would be left without access, and many would connect to the AME via the nearby intersections of the AME with the Belcher Avenue Extension or the widened portion of Elliot Avenue. However, as a result of the changes in access, response times may be adversely affected.[17]

Mitigation Measure PS-2:

The project sponsor shall provide all emergency service providers in Merced County, and the Cities of Atwater and Merced with detailed information about changes in local roadways. This information can be used by the emergency service providers to update their response plans and to chart new routes to respond to service calls.

- Prior to any demolition or construction, this information shall be submitted prior to any changes in access.
- During construction, this information shall be updated every time a new access connection is completed to inform the service providers that an alternate connection is available. It is assumed that, once constructed, the AME would provide new routes for many of these calls.

Significance After Mitigation: Less than Significant

Impact PS-3: Project construction may require detours and lane closures on existing roadways in the project area which may adversely affect EMS, as well as Sheriff, Police, and Fire Department response times.

In order to construct the project where it intersects or reconstructs existing roadways, lane closures and detours may be temporarily needed. This would temporarily alter the route that public service providers would take to respond to an emergency call. This could increase emergency response times.

Mitigation Measure PS-3:

The project sponsor shall prepare a Traffic Management Plan that ensures coordination between construction contractor(s) and public safety providers to minimize or eliminate interference with provision of police, fire and emergency medical services. Prior to construction, the plan shall be provided to all emergency service providers within the area. Additionally, emergency service providers shall receive advance notice of all necessary lane closures and detours as a result of project construction. This plan shall be approved by the Merced County and City of Atwater Department of Public Works prior to the issuance of permits to construct the project.

Significance After Mitigation: Less than Significant

~~**Impact PS-4: Alternative 1B would traverse a portion of a planned/approved school site.**~~

[17] Email from Scott McBride, City of Atwater Director of Economic Development and Special Projects, received September 28, 2007.

~~The Atwater Elementary School District identified a future school site to be located on the north side of Avenue 1, just east of Canal Creek. The Atwater Elementary School District has plans to build a school on this property that will house 800 preschool through grade eight students. The schools is anticipated to open during the 2009-2010 school year. If Alternative 1B were constructed, it would traverse the approved site and make it unavailable for a school. An alternative site would have to be identified.~~

~~Mitigation Measure PS-4:~~

~~If Alternative 1B is selected, the project sponsor shall purchase an alternative site for use as a future elementary school site. This site location shall be acceptable to the Atwater Elementary School District and title to the new school site shall be transferred prior to issuance of a permit to construct the AME project. The new school site purchased by the project sponsor shall be of equal or greater acreage as the impacted site and in a different location approved by the State Department of Education.~~

~~Since the location of a new school site as required under Mitigation Measure PS-3 is unknown at this time, it is not possible to analyze the environmental affects of its construction. If Alternative 1B is chosen, the new school site required shall undergo separate environmental review.~~

~~Significance After Mitigation:~~ ~~Less than Significant~~

Impact PS-~~45~~: ~~Alternative 1A would be built within three tenths of a mile from the southeast corner of a~~ The AME would be built in close proximity to the proposed Avenue One ~~future~~ school site~~,~~ which could result in unsafe conditions for students traveling by foot or bicycle who would have to get across the AME. ~~cross the project.~~

~~If Alternative 1A is selected, it would be in close proximity to the proposed Atwater Elementary School site~~ **Either Alternative 1A or Modified Alternative 1B would be within 500 feet from the southeast corner of the Avenue One school site**. Pedestrian and bicycle traffic traveling to and from the school **from the easternmost portion of the AESD service area boundary** would have to **safely get across** ~~cross~~ the expressway.

Mitigation PS-4a:

Under either alternative, the section of the AME project between SR 99 and Santa Fe Drive, including the proposed intersection of Avenue Two with the AME, shall be constructed in accordance with the FHWA's *Safe Route to School* guidelines

It is anticipated that these guidelines may include requirements for:

- Designated crosswalks crossing the AME
- Traffic-signals equipped with walk/don't walk signals
- Bicycle lanes on Avenue One and Avenue Two
- School Crossing signage

Modified Alternative 1B would cross under Avenue One which would allow vehicles, pedestrians, and bicyclists on Avenue One to safely travel over the AME to access the Avenue One school site.

Under Alternative 1A, Avenue One would terminate on either side of the AME, ending in cul de sac on the east and west sides of the AME. Individuals traveling to and from the Avenue One school site would be required to travel south to Green Sands Avenue or north to Avenue Two to cross the AME. This would restrict the ability for some students or other individuals to travel to school using alternative transportation, such as walking or bicycling. This would create a conflict with the FHWA's *Safe Routes to School* guidelines, which are designed to enable and encourage children, including those with disabilities, to walk and bicycle to school and to make bicycling and walking to school a safer and more appealing transportation alternative. ~~Design consistency with the Safe Route to School guidelines would reduce this impact to a less-than-significant level.~~ **The following mitigation measure would reduce this impact of Alternative 1A to a less-than-significant level.**

> **Mitigation PS-5b:**
>
> **To provide safe pedestrian and bicycle crossing of Alternative 1A, a pedestrian overpass shall be constructed between the two cul de sacs on Avenue One on the east and west sides of Alternative 1A. Built in accordance with the *Safe Route to Schools* guidelines, the pedestrian overpass would allow for students to safely cross above the expressway and access the Avenue One school site.**

The design and configuration of these intersections **and the overpass** shall be **developed in consultation with the AESD and** approved by the Merced County Department of Public Works ~~and the Atwater Elementary School District~~ prior to the issuance of permits to construct this portion of ~~the AME~~ **Alternative 1A.**

Significance After Mitigation: Less than Significant

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CHAPTER 5 CUMULATIVE IMPACTS

CEQA requires an evaluation of a project's contribution to cumulative environmental impacts. According to Section 15355 of the CEQA Guidelines, cumulative impacts are defined as "two or more individual effects which, when taken together, are considerable, or which can compound or increase other environmental impacts." As stated in the Guidelines, an individual project may not have significant impacts; however, in combination with other related projects, these cumulative effects may be considerable. When evaluating cumulative impacts, CEQA recommends one of two methods:

1. Projects to consider in the cumulative analysis include any past, present, and probable future projects that have been identified by local and regional planning departments and agencies, including projects outside the control of the lead agency, or

2. The cumulative analysis would consider buildout of an adopted general plan or related planning document, or would use a prior environmental document which has been adopted or certified that described or evaluated regional or area-wide conditions contributing to the cumulative impact.

For the Atwater-Merced Expressway project, a combined method was used that utilized growth forecasts for the region and evaluated whether these projections assumed growth from other anticipated projects in the area. The starting point for this was the MCAG Growth Projections (2005-2030)[1], which provides forecasts for regional and localized growth in different areas of the County. These projections are considered to represent development at a reasonable rate of growth. These projections are consistent with MCAG member-agency General Plans projections for 2030 and, in some fast-growing areas, the growth anticipated may nearly equal the build-out allowed in the local General Plans. Approved projects in the County were also evaluated to ensure that they were consistent with the MCAG growth forecast. For example, the development of the University of California – Merced Campus was evaluated, and it was determined that growth projections were reasonable and assumed enrollment at 70 percent of capacity at project (AME) completion. In all cases, approved projects in the area were found to be consistent with the MCAG Growth Projections. **Consistent with CEQA, the list of approved projects does not include projects under consideration for which no application has been submitted to the County or City planning departments, or other projects that were speculative during the preparation of the EIR.**

For the cumulative traffic analysis (which influences the air quality and noise analyses), these growth projections were integrated in the MCAG Regional Travel Model. To adequately assess future cumulative traffic operations, the model was modified to include ongoing, present, and probable future transportation projects – in general, this includes transportation projects with identified funding through federal, state, regional, and/or local sources. This list of projects was generated from projects listed in the **most recently**

[1] **Population Growth Projections can be found online at <http://www.mcagov.org/grants/population.html>.**

adopted Federal Transportation Improvement Program (FTIP) and Regional Transportation Plan (RTP) **for Merced County**[2]~~, to which projects were added through discussions with Caltrans and local city and county planning and traffic and public works department.~~ **In accordance with Caltrans Guide for the Preparation of Traffic Impact Studies (Caltrans December 2002), only improvements with identified funding sources were assumed to be present in the 2030 baseline transportation network. These projects were reviewed and concurred with by Caltrans and local city and county planning and traffic and public works department staff (Project Development Team).** ~~Consistent with CEQA, the list of development projects analysis does not include projects under consideration for which no application has been submitted to the County or City planning departments, or other projects that were speculative during the preparation of the EIR.~~ **Table 5-1** provides a summary of the past, present, and probable future projects considered in the cumulative analysis.

Table 5-1 Other Projects Considered in Cumulative Analysis

Facility	Description
Merced County Local Roadway Projects	
~~Santa Fe Ave.~~	~~Widen Roadway from 2 to 4 lanes~~
~~Santa Fe Ave.~~	~~Widen Roadway from 2 to 4 lanes from SR 59 to Bellevue/Buhach~~
~~Bellevue Rd.~~	~~Upgrade to Arterial Standards From Franklin to SR 59~~
City of Atwater Local Roadway Projects	
~~Bellevue Rd.~~	~~New Roadway - gap closure from Santa Fe to Franklin~~
City of Merced Local Roadway Projects	
Mission Ave.	Upgrade to Arterial Standards from SR-59 to SR-99
~~Childs Ave.~~	~~Interchange Improvement~~
Yosemite	Upgrade to Arterial Standards from SR-59 to R Street
~~Yosemite~~	~~Upgrade to Arterial Standards from G to Campus~~
Cardella	New Roadway - gap closure from SR-59 to G Street
~~Bellevue Rd.~~	~~Widening from SR-59 to G Street~~
~~Bellevue Rd.~~	~~Other Widening of Bellevue~~
~~Bellevue Rd.~~	~~Widening from G to Campus Drive~~
~~Old Lake~~	~~New Roadway – gap closure from SR-50 to G Street~~
R St.	New Roadway – Extension from Yosemite to Bellevue
M St.	New Roadway – Extension from Lehigh to Bellevue
G St.	Upgrade to 4-lane Arterial Standards from Yosemite to Old Lake
Parsons St.	Upgrade to 4-lane Arterial Standards from Childs to Yosemite
Gardner	New 4-lane Arterial Extension from Yosemite to Old Lake
City of Livingston Local Projects	
~~Winton PW~~	~~Roadway North Extension~~
~~Hammatt Ave.~~	~~New Roadway North Extension~~
City of Los Banos Local Projects	
Pioneer Rd.	New Roadway Extension

[2] **Transportation planning documents can be found online at <http://www.mcagov.org/programs/trans/trans.html>.**

Facility	Description
Place Rd.	New Roadway Extension
State Facility Projects	
SR 59	Widen SR-59 from 4 to 5 lanes from Mission to Childs
SR 59	Widen SR-59 from 2 to 4 lanes from 16th to Olive/Santa Fe
~~SR 59~~	~~Widen SR-59 from 2 to 4 lanes from Olive to Yosemite~~
~~SR 59~~	~~Widen SR-59 from 2 to 4 lanes from Yosemite to Bellevue~~
~~SR 59~~	~~Realign SR-59 south from Mission to Thornton/SR 140~~
SR 59	Realign SR-59 (Castle Highway) - multiple alternatives considered
~~SR-99~~	~~Improvement of Sandy Mush Interchange~~
SR-99	Improvement of Arboleda Interchange
SR-99	Improvement of Mission Interchange
~~SR-99~~	~~Increase Capacity Flow Rate at Gerard~~
~~SR-99~~	~~Childs Interchange Overcrossing Improvement~~
~~SR-99~~	~~Widen from 4 6 to 8 lanes at Merced Freeway~~
~~SR-99~~	~~Widen from 4 - 6 to 8 lanes~~
~~SR-99~~	~~Widen from 4 to 6 to 8 lanes at Merced-Atwater Freeway~~
~~SR-99~~	~~Interchange Improvement at Franklin Rd.~~
~~SR-99~~	~~Interchange Improvement Buhach Rd.~~
~~SR-99~~	~~Widen from 4 to 6 to 8 lanes Atwater Fwy.~~
~~SR-99~~	~~Interchange Improvement at Applegate Rd.~~
SR-99	Interchange & Frontage Road Improvements at Westside Rd.
SR-99	Interchange Improvement Sultana Ave.
SR-99	O/C Hammatt
SR-99	Interchange Improvement Winton Parkway
SR-99	Interchange Improvement Collier
SR-99	Interchange & Circulation Improvements South Ave
SR-99	Interchange & Circulation Improvements Shanks
SR-99	Interchange & Circulation Improvements Bradbury
SR-140	New Arterial Roadway - Gustine Bypass
SR-140	New Roadway - Bradley Overhead (Parsons to SF Ave)
SR-140	New Roadway - SF Ave to Campus Parkway
SR-152	Improvement of 152/33 Interchange
SR-152	New Bypass Roadway (152 Los Banos Bypass 3 Alternatives)
SR-165	Widen from 2 to 4 lanes from Pioneer to 152
SR-165	Widen from 2 to 4 lanes from 152 to Overland
SR-165	Widen from 2 to 4 lanes from Overland to Henry Miller
SR-165	New Arterial Roadways for Hilmar Bypass
SR-165	New Ramps at Hilmar Bypass
SR-165	Widen from 2 to 4 lanes from Hilmar to 99
Other Merced County Projects	
UC Merced	Development of new University of California – Merced Campus
Campus Park	Development of new Campus Park

Source: MCAG, Dowling Transportation, 2007.

The AME project is identified as a separate, stand alone, regionally significant project in the most current Regional Transportation Improvement Program for Merced County (adopted January 18, 2007). While the AME project and other related projects are part of a planned regional transportation network as set forth in the Merced Regional Transportation Improvement Plan, it is appropriate to separately study the individual environmental effects of projects that make up this regional transportation network, as long as each project has independent utility. The AME project can be constructed as a separate stand-alone project and would function independent of any other planned roadway projects. That is, the AME project would provide needed transportation and congestion relief even if the other planned roadway improvements were not built. Therefore the AME project would have independent utility.

For each section evaluated in Chapter 4 of this EIR, a discussion of cumulative impacts is provided below that considers the impacts of the AME project in combination with the impacts of these other identified projects. Where cumulative impacts are identified, the discussions evaluate whether the AME project contribution to these impacts is considerable.

5.1 CONSISTENCY WITH EXISTING PLANS AND POLICIES

As a matter of law, each separate project is required to be consistent with laws, regulations, plans, and policies either by design or through appropriate mitigation measures. As a result, impacts from inconsistencies with plans and policies are project specific in nature and do not result from the cumulative effects of a number of projects.

5.2 LAND USE AND AGRICULTURE

Section 4.2, Land Use and Agriculture, provides a discussion of farmland in the County. The county has good soils for agriculture and grazing and land uses in the county are dominated by farming and ranching. The area between the Cities of Atwater and Merced, in which the project is located, is gradually undergoing a conversion agricultural to more urban uses. The project, in conjunction with other projects in the area, will

continue this regional trend, which would be considered a cumulative impact, to which the project would make a considerable contribution.

As discussed in **Section 4.2**, specific mitigation measures have been established to reduce the project's impact from conversion of Important and Prime Farmland. The project would result in a conversion of agricultural land in the local area; however it would place an equal amount of land into an agricultural conservation easement that would protect the agricultural use of the land in perpetuity, providing greater assurance for its continued use. While this mitigation would not reduce project-related impacts to a less-than-significant level, it would assist in preserving agricultural land use and practice in the region.

5.3 POPULATION, HOUSING, AND EMPLOYMENT

As described in **Section 4.3**, population and housing data from the 1990 and 2000 Census and estimates provided by the California Department of Finance (CDOF) indicate that the County is experiencing substantial amounts of growth and has been for at least the last 17 years. The County area is expected to

continue to grow and MCAG estimates that during the 20-year period between 2010 and 2030, the population of Merced County is anticipated to grow by 58 percent, adding an additional 175,700 people.

The AME was included in of the MCAG 2007 Regional Transportation Plan and is a component of the regional transportation planning for this anticipated growth in population and housing Other roadway projects proposed in the area are also intended to provide roadway capacity improvements that would work together to ensure that population and housing growth did not result in substantial congestion-related impacts in the region. The Atwater-Merced Expressway project and other roadway projects considered as part of this cumulative analysis are therefore intended to provide for this growth, but do not themselves propose development of housing. Therefore, for the purposes of this analysis, the AME project in combination with the other projects listed in Table 5-1 would not directly result in cumulative population or housing impacts. Because the AME project and these other roadway projects are being planned as part of a regional response to this anticipated growth, particularly residential growth, there is an indirect cumulative impact to population and housing growth in the project area to which the AME project would contribute.

The projects could result in an increase in available construction jobs and there could be a beneficial cumulative impact in that there may be more employment opportunities in the region. These effects are further discussed in **Section 6.3, Growth Inducement**.

5.4 VISUAL RESOURCES

As discussed in **Section 4.4, Visual Resources**, the AME project would result in a less-than-significant change in the visual character of the area through the construction of a roadway in an area largely comprised of agricultural fields. Other projects listed in Table 5-1 are generally intersections or interchange improvement projects, or else road widening projects. The majority of these other projects would take place where there are existing roadways and there would be no substantial changes to the visual character. The AME project is part of a county-wide planning effort that will improve regional access, but is also designed to serve growth anticipated in the area, particularly residential growth. This residential growth, particularly around the agricultural areas that surround the AME, would change the visual character of the area from largely rural to suburban. While this impact would not be a direct result of the AME project and the projects in Table 5-1, it would be an indirect cumulative impact to which the AME project would contribute.

The AME project would introduce new sources of light and glare in the project area from overhead lighting, vehicle headlights, and reflective surfaces on vehicles and road features such as signage. As discussed previously, because the majority of other cumulative projects would take place on existing roadways, it is not anticipated that there would be a substantial increase in lighting or glare that would result in cumulative impacts.

5.5 TRAFFIC AND TRANSPORTATION

Traffic forecasts under year 2030 conditions were completed using the Merced County Association of Governments (MCAG) regional transportation model, modified to incorporate anticipated future improvements to area intersections and roads included in the 2007 Regional Transportation Plan (RTP) for Merced County prepared by MCAG. Using this data, traffic volumes and turning movements were determined and analyzed to identify Level of Service (LOS) for both intersections and roadways within the AME project study area under both year 2030 No Project and 2030 with Project conditions. The analysis of

traffic and transportation associated impacts, as discussed in **Section 4.5, Traffic and Transportation**, accounts for cumulative impacts from projects that are under construction or planned in the reasonably foreseeable future. The analysis in **Section 4.5** indicates that the AME Project would not result in temporary or permanent operational or construction-related impacts to area traffic.

5.6 NOISE

The noise analysis provided in **Section 4.6** uses the 2030 traffic volumes prepared as part of the traffic analysis. Because this traffic analysis takes into consideration other related projects, the noise analysis provided in Section 4.6 is an analysis of cumulative noise impacts from vehicular traffic. Under 2030 with Project conditions, excluding one noise sensitive receiver, cumulative noise levels are anticipated to be less than significant with implementation of mitigation measures including the construction of sound walls and/or the use of open grade asphalt concrete (OGAC) as pavement material on the AME roadway surface. Noise receiver R-44 would continue to experience cumulative noise levels in excess of Merced County noise standards. Therefore the AME project would considerably contribute to an identified cumulative noise impact.

5.7 AIR QUALITY

The air quality analysis included in **Section 4.7, Air Quality,** is based on projected year 2030 traffic volumes and conditions as described in **Section 4.5, Traffic and Transportation**. The data used to complete this analysis includes information on traffic generated by past, present, and future development in the AME project area as anticipated by the Merced County General Plan, the City of Atwater General Plan, and planned roadway improvements and projects included in the 2007 RTP for Merced County prepared by MCAG.

As discussed in **Section 4.7, Air Quality**, Merced County is in non-attainment for the pollutants ozone and particulate matter ten micrometers in size or less (PM10). Areas in non-attainment must be found to conform with the State Implementation Plan (SIP) governing emissions of criteria pollutants. Transportation planning, as represented by the 2007 RTP, is coordinated with the conformity process. The AME Project is included in the 2007 RTP and meets the regional tests for conformity governing ozone and PM10 as governed by the SIP.

Construction of the AME project would lead to temporary impacts to air quality. However, as discussed in **Section 4.7, Air Quality**, implementation of mitigation measures would reduce construction related air quality impacts to less-than-significant levels. It is possible that these impacts, combined with impacts arising from implementation of other projects in the AME project area, could result in cumulative impacts to air quality were construction activities to occur at the same time. However, mitigation measures included as part of other projects that may occur in the AME project area would minimize construction related air quality impacts associated with those projects to less-than-significant levels. Therefore, there would be no cumulative impacts to air quality in the area to which the AME project would contribute.

5.8 GEOLOGY, SEISMICITY, AND SOILS

Geological impacts are generally site specific in nature and do not result from the cumulative effects of a number of projects.

5.9 HYDROLOGY, DRAINAGE, AND FLOODPLAINS

The area considered for cumulative impacts to hydrology and water quality includes the project area and the local and regional watershed to which the site drains. The project and other past, present, and future projects, would contribute to an increase in impervious surfaces in the area, which would result in an increase in stormwater runoff. Existing drainage culverts may not be able to accommodate this additional cumulative runoff in the County. Since several creeks in the area (such as Bear Creek, Black Rascal Creek, and Canal Creek) overflow and contribute to flooding, the cumulative increase in impervious surface over time could increase the frequency of flooding. Future projects will be required under CEQA to evaluate their individual impacts related to local hydrology and flooding on a case by case basis. Mitigation would be incorporated into each project where feasible which will decrease cumulative impacts related to flooding.

The project includes site specific mitigation measures such as compliance with NPDES permit requirements including the use of Best Management Practices (BMPs), the use of detention basins, roadside ditches, and pumps. Implementation of these measures would help to accommodate the increase in stormwater runoff that would be generated by the new impervious surfaces created by the project.

As discussed in **Section 4.9**, the project would convert approximately 90 acres of pervious surface area to impervious surface area which would prevent stormwater from percolating into the groundwater basin. While most of this stormwater would run off the road into drainage areas and percolate into groundwater, a portion of this run off water would enter the channelized drainage channels in the area and would not recharge local aquifers but would instead drain to the San Francisco Bay. However, the percentage of this run off is considered minor when taken as a portion of the entire Merced Basin drainage area. The other cumulative projects identified in this section are generally roadway capacity and operations improvements project and would not result in large scale changes to land that would result in a decrease in groundwater recharge in the area. It is not anticipated that there will be a direct cumulative impact from the AME and from the projects listed in Table 5-1 with relation to groundwater recharge. However, as with the discussion of cumulative visual impacts (**Section 5.4),** the AME project and these other roadway projects are being planned to accommodate future residential growth. This growth could result in an indirect cumulative impact to groundwater recharge as open land is converted to impervious buildings and paving surfaces. Therefore, the AME project combined with other cumulative projects would contribute to an indirect cumulative impact to groundwater recharge.

5.10 HAZARDS AND HAZARDOUS MATERIALS

Impacts related to hazardous materials generally occur on a site specific basis, or else are linked to a specific hazardous waste site, such as a designated superfund site. The other cumulative projects listed in Table 5-1 are generally geographically disperse and it is not anticipated that they would use quantities of hazardous materials that would combine in such a way to endanger human or environmental health. Hazardous materials are strictly regulated by state and federal laws specifically to ensure that they do not result in a gradual toxicification of the environment. Furthermore, each individual project is required under CEQA to investigate and report any finds of contaminated soil or groundwater, and to mitigate appropriately. Therefore, it is not anticipated that there would be any cumulative impacts related to hazards.

5.11 BIOLOGICAL RESOURCES, AND WETLANDS

Implementation of the proposed project would contribute to a cumulative regional loss of ruderal and grassland habitats, wetland habitats, and sections of irrigation canals and creeks that bisect portions of the project area. Other cumulative impacts would include some loss of orchard areas, eucalyptus groves, irrigated pastures, horse pastures, rotational crops, and permanent crops, as well as common plant and animal species. Since portions of the project area are known to support vernal pool fairy shrimp, and provide potential California tiger salamander aestivation/over-summering habitat and potential San Joaquin kit fox habitat, every effort will be made to prevent impacts to these species to minimize the cumulative loss of this special-status species in the region.

The loss of vegetation communities such as ruderal and grassland habitats, forested areas, wetland habitats, and aquatic habitats would represent a cumulative loss of wildlife foraging habitat and nesting habitats for both common and special-status species. Multiple development projects are also proposed in this region that would impact similar resources to those that would be impacted by the project. Project-related impacts would be considered cumulative with other projects in the region.

Mitigation for habitat loss resulting from the proposed project would include the purchase of mitigation credits at several mitigation banks for impacts to vernal pool fairy shrimp, California tiger salamander, western spadefoot toad, California horned lizard, and San Joaquin kit fox. In addition, the project sponsor may be required to purchase mitigation credits for potential impacts to Swainson's hawk, burrowing owl and Pacific pond turtle. Finally, the project sponsor will provide mitigation for impacts to "waters of the U.S." including creation of compensation wetlands and other waters in the preserve area that will be permanently protected.

The mitigation measures identified above for each special status species and biological resource that may be affected by the proposed project serve to mitigate for cumulative impacts to those species and resources in the area. Mitigation prescribed would offset project contributions to cumulative impacts to biological resources.

5.12 CULTURAL RESOURCES

Potential impacts to cultural resources include damage or loss of historical structures, archaeological sites, or paleontological resources, such as fossils. No known archeological or paleontological resources were identified in the AME project study area, though some areas are considered to have potential for these resources to exist in subsurface soils. Mitigation measures provided in Section 4.12 are consistent with state law and would be required for any development projects. Because these impacts would be mitigated for any project, there would be no cumulative impact to these types of resources.

Cumulative impacts to historical resources can occur when development of an area results in the removal of a substantial number of historic structures (whether considered important historical features or not) that when taken in combination could degrade the physical historical record of an area. Historic resources in the AME area are generally from the early part of the twentieth century and are linked to the agrarian history of the region (farmhouses, barns, etc.) The anticipated development of the area with new roads, housing, the University of California – Merced campus, and the Castle Air Base Reuse Plan could result in cumulative impacts to historical resources. The AME project is designed to specifically avoid historic resources in the

project area, including the historic Buhach Catholic Church. Therefore the AME project would not contribute to any cumulative impact to historic resources.

5.13 UTILITIES

Cumulative impacts to utilities and service systems for roadway projects are limited to solid waste facilities. Roadway projects do not require a continuous water supply, nor do they create wastewater or necessitate additional wastewater treatment facilities in the area. Although the AME project would have a significant impact on the capacity of the landfills servicing Merced County, the mitigation measures in Section 4.13 would reduce the impacts to less than significant and allow Merced County to achieve its 50 percent solid waste reduction target, consistent with California law *AB 939*. Other roadway projects would be required to meet the same solid waste reduction goals as part of their environmental review. Therefore, there are no cumulative impacts to utilities.

5.14 PUBLIC SERVICES

As discussed previously, the AME project and other cumulative roadway projects area part of a regional transportation plan designed to accommodate anticipated increases in population in the Merced County area.

As discussed in **Section 4.14** the project would not increase the need for public services and would not result in significant impacts related to the provision of services. The project could result in a beneficial cumulative impact to the response times for emergency services by providing alternative and more direct response routes. Other cumulative capacity and circulation improvement projects could have similar beneficial effects if they serve to reduce traffic congestion. Therefore, the AME project and other cumulative projects would not have an adverse cumulative impact to public services.

5.15 OTHER CUMULATIVE EFFECTS

Global Climate Change

[NOTE TO THE READER – This section has been substantially revised to reflect the most recent legislation related to global climate change and to provide a quantitative analysis of emissions. Changes from the prior text are not tracked. Much of the discussion of vehicular contributions to greenhouse gas emissions is based on language used by the California Department of Transportation (Caltrans) in its environmental documents.]

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas[3] (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the Air Resources Board (ARB) to develop and implement regulations to reduce

[3] Greenhouse gases related to human activity, as identified in AB 32, include: Carbon dioxide, Methane, Nitrous oxide, Tetrafluoromethane, Hexafluoroethane, Sulfur hexafluoride, HFC-23, HFC-134a, and HFC-152a.

automobile and light truck GHG emissions; these regulations will apply to automobiles and light trucks beginning with the 2009 model year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80% below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that ARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and GHG reduction is also a concern at the federal level; though at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the U.S. Environmental Protection Agency (EPA) to regulate GHG as a pollutant under the Clean Air Act (Massachusetts vs. Environmental Protection Agency et al., U.S. Supreme Court No. 05–1120. 549 U.S. _____. Argued November 29, 2006—Decided April 2, 2007). The court ruled that GHG do fit within the Clean Air Act's definition of a pollutant, and that EPA does have the authority to regulate GHG. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting GHG emissions.

Emissions are generated worldwide and by definition, global climate change is a cumulative impact related to these global emissions. A project may contribute to this impact, but an individual project does not generate enough GHG emissions to significantly influence global climate change[4].

Caltrans has taken an active role in addressing GHG emission reduction and climate change. Approximately 40 percent of all human made GHG emissions in California are from transportation, and are dependent on 3 factors: the types of vehicles on the road, the type of fuel the vehicles use, and the time/distance the vehicles travel. The main strategies Caltrans is pursuing to reduce GHG emissions is to make California's transportation system more efficient, through reducing congestion[5], increasing vehicle efficiency[6], and reducing vehicle miles traveled (VMT).

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[4] Hendrix, Micheal and Wilson, Cori. *Recommendations by the Association of Environmental Professionals (AEP) on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), p. 2.

[5] The most severe emissions of carbon dioxide from vehicles occur at stop-and-go speeds (0-25 miles per hour). Relieving congestion by enhancing operations and improving travel times in high congestion travel corridors results overall reduction in GHG emissions, given a fixed number of vehicles.

[6] Caltrans is supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks. However it is important to note that the control of the fuel economy standards is held by the United States Environmental Protection Agency and the California Air Resources Board. The use of alternative fuels is also being considered; the Caltrans is participating in funding for alternative fuel research at the University of California Davis.

VMT reductions can occur through implementing smart land use strategies: providing public transit, encouraging ride-sharing, reducing the distance between jobs and housing, developing transit-oriented communities, and providing high density housing along transit corridors.

GHG Emissions Impact:

For the purpose of this impact analysis, the AME project was evaluated in the context of current and future local roadway congestion and anticipated vehicle miles traveled in the region. Under existing conditions, approximately five percent of traffic on Merced County roadways experiences congestion. According to the MCAG 2007 RTP, were Merced County roads to remain unimproved, the percentage of vehicles experiencing congestion would increase to 26 percent by 2030. The majority of this congestion would be experienced on major roadways, including SR 99, SR 59, and SR 140. The AME project is included in the RTP as part of the overall plan for improving transportation in the region. Full implementation of these projects would reduce the percentage of traffic that experiences congestion to 16 percent in 2030. This represents a ten percent decrease in the number of vehicles that would experience congestion in 2030 under conditions where no roadway improvements have occurred. Therefore, implementation of the AME project, in conjunction with other planned roadway improvements, would result in less congestion and fewer GHG emissions.

Table 5-2 summarizes the estimated CO_2 emissions related to VMT under different development scenarios. Dowling and Associates used the Merced County Association of Governments (MCAG) Regional Travel Demand Model to calculate the VMT and the speed distribution in the region, which was used in this analysis. The CT-EMFAC model was used to estimate the CO_2 emissions based on this data.

Table 5-2 Carbon Dioxide (CO2) Emissions (US Tons/Year)

Scenario	Daily VMT[1]	Annual CO_2 Emissions[(2)]	Emissions Change from Existing (%)	Emissions Change from 2030 No-Build Scenario (%)
Existing Conditions	7,464,438	1,797,260	N/A	N/A
2030 No-Build	13,893,585	3,268,940	81.9% increase	N/A
2303 Alternate 1A	13,815,316	3,243,755	80.5% increase	0.8% decrease
2030 Modified Alternate 1B	13,841,547	3,252,880	81.0% increase	0.5% decrease

[1] Regional DVMT estimates include portions of Stanislaus County.
[2] In metric tons

As shown in Table 5-2 regional daily VMT and annual CO_2 emissions are anticipated to increase substantially by 2030, with or without the AME project. By the year 2030, CO_2 emissions are expected to increase by approximately 1.4 million metric tons per year. Therefore, other emission reduction strategies will be required to meet state emissions reductions goals, as set in Executive Order S-3-05 and AB 32. As these reduction strategies have not yet been identified, there would be a cumulative impact related to GHG emissions.

With construction of the AME project, regional VMT and CO_2 emissions would decrease slightly when compared to the 2030 No-Build scenario. Emissions would be reduced by 16,060 - 25,185 tons per year, or approximately 0.5 to 0.8 percent. This reduction and improvements in traffic congestion would make only

minor contribution to the region meeting goals mandated under AB 32. Therefore, while the project would not contribute to a cumulative GHG impact, it would not noticeably reduce GHG emissions.

Senate Bill 375 (SB 375) was signed into law on September 29, 2008. The bill requires metropolitan planning organizations (such as MCAG) to incorporate a "Sustainable Communities Strategy" (SCS) into their next RTP (beginning in 2011). The SCS would require an evaluation of land use practices and appropriate rezoning to encourage smart growth planning and to demonstrate how the emissions reduction goals related to vehicle emissions and VMT would be achieved. This may have substantial effects in changing land development patterns in the region and may serve to further concentrate development around major transportation corridors. MCAG will develop its SCS in coordination with the California Air Resources Board and will consider the AME project's role in meeting SB375 requirements.

CHAPTER 6 CEQA REQUIRED CONCLUSIONS

6.1 INTRODUCTION

This chapter presents discussions of the following CEQA-mandated discussions pursuant to CEQA Guidelines §15126: effects found not to be significant; significant and unavoidable impacts; significant irreversible changes, including changes in land use committing future generations and consumption of non-renewable resources; and growth inducement.

6.2 EFFECTS NOT FOUND TO BE SIGNIFICANT

CEQA requires a brief statement of the reasons that potential significant effects of a project have been determined not to be significant and, therefore, not evaluated in the Draft EIR. This section covers the impact areas listed in Appendix G of the CEQA Guidelines that were determined to have no impact related to implementation of the project and are, therefore, not discussed in the other impact sections in Chapter 4 of this EIR.

6.2.1 MINERAL RESOURCES

According to the 2000 Merced County General Plan, Merced County's mineral wealth includes deposits of sand and gravel in the east and west foothill areas. According to Figure Map 21 of the Chapter 6 Open Space/Conservation Easement Element (refer to page VI-21), there are no known active, inactive, or potential sand and gravel resource sites in the vicinity of the project site.

Therefore, it is unlikely that valuable mineral resources exist at this location. Implementation of the Project would not 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. Nor would implementing the project result in the loss of availability of a locally important mineral resource recovery site delineated in a local land use plan. No further discussion of impacts related to mineral resources is necessary.

6.3 SIGNIFICANT UNAVOIDABLE IMPACTS

As required by CEQA Guidelines § 15126.2(b), an EIR must describe any significant impacts that cannot be avoided, including those that can be mitigated but not reduced to a less-than-significant level. Section 4.0 Environmental Setting, Impacts, and Mitigation, of this Draft EIR provides a description of the potential environmental impacts of implementing the project and recommends mitigation measures to reduce impacts to the extent feasible. After applying the recommended mitigation measures, most of the impacts associated with implementing the project would be reduced to a less-than significant level.

The following significant effects may not be able to be mitigated to a less-than-significant level, and therefore, could be considered unavoidable. These unavoidable significant impacts require the adoption of a Statement of Overriding Considerations.

6.3.1 PROJECT AND CUMULATIVE IMPACTS TO AGRICULTURE

As discussed in **Section 4.2, Land Use and Agriculture**, the direct conversion of Prime and Important Farmland required with construction of the AME would be considered a significant, unavoidable impact. Mitigation has been provided that would reduce this impact by preserving farmland in other areas, but this mitigation does not reduce the net loss of this farmland and would not reduce impacts below a level of significance.

Cumulative impacts to agriculture were identified as a result of the planned residential development in the project area. The AME project is part of a county-wide planning effort that will improve regional access, but is also designed to serve growth anticipated in the area, particularly residential growth. The area between the Cities of Atwater and Merced, in which the project is located, is gradually undergoing a conversion agricultural to more urban uses. The project, in conjunction with other projects in the area, will continue this regional trend, which would be considered a cumulative impact, to which the project would make a considerable contribution.

6.3.2 CUMULATIVE IMPACTS TO VISUAL RESOURCES

The AME project is part of a county-wide planning effort that will improve regional access, but is also designed to serve growth anticipated in the area, particularly residential growth. This residential growth, particularly around the agricultural areas that surround the AME, would change the visual character of the area from largely rural to suburban. While this impact would not be a direct result of the AME project and other regional roadway projects, it would be an indirect cumulative impact to which the AME project would contribute.

6.3.3 CUMULATIVE IMPACTS TO NOISE LEVELS

As discussed in section **4.6 Noise**, under cumulative conditions, one noise receiver (receiver R-44, adjacent to Green Sands Road and Belcher Avenue) would experience noise levels in excess of Merced County noise standards. Mitigation measures would not attenuate the noises levels to within the range of Merced County standards and this impact could not be reduced to a less-than-significant level.

6.3.4 CUMULATIVE IMPACTS TO GROUND WATER RECHARGE

The residential growth that the AME project and other roadway projects are being planned to accommodate, could result in a cumulative impact to groundwater recharge as open land is converted to impervious buildings and paving surfaces. The AME project and other roadway projects in the area would indirectly contribute to this cumulative impact to groundwater recharge by providing access and capacity to this new growth.

6.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

An EIR must identify any significant irreversible changes that could be caused by the Project. These may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. The CEQA Guidelines describe three distinct categories of significant irreversible changes: 1) changes in land use that would commit future generations; 2) irreversible changes from environmental actions; and 3) consumption of non-renewable resources.

6.4.1 CHANGES IN LAND USE WHICH WOULD COMMIT FUTURE GENERATIONS

The AME project would change the existing character of the project area by constructing an expressway through an area that is presently served by smaller county and local roads. This change would be most pronounced in the portion of the project between Franklin Road and SR 59 where there are few roads crossing the project area and where large parcels of contiguous agricultural land presently exist. This change in land use would commit future generations to the presence of an expressway within this area. However, the project would not prohibit any of the existing land uses, including agriculture, from occurring up to the edge of the roadway. Therefore, the changes in land use related to project construction would result in a relatively minor direct change in overall land use in the area. The project may result in indirect changes in land use, which are discussed below in Section 6.4.

6.4.2 IRREVERSIBLE CHANGES FROM ENVIRONMENTAL ACTIONS

Irreversible changes from environmental actions would occur from the conversion of lands currently in agricultural use to a developed roadway. Conversion of agricultural lands to non-agricultural uses is considered an irreversible change.

6.4.3 CONSUMPTION OF NONRENEWABLE RESOURCES

The Project would involve the construction of a roadway and related infrastructure. Non-renewable resources such as fossil fuels would be required for construction and operation of the Project. In addition, large quantities of construction materials would be used that would not be easily recovered, such as concrete, asphalt, metal, and some plastics. The commitment of these resources is necessary for construction and operation of the project is generally considered irreversible.

6.5 GROWTH INDUCEMENT

CEQA requires a discussion of the ways in which the proposed General Plan could be growth-inducing. The CEQA Guidelines § 15126.2(d), identifies a project as "growth-inducing" if it fosters economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. A project could also indirectly induce growth by removing physical barriers to growth or by creating a condition that attracts additional population or new economic activity to an area. CEQA states that growth inducement must be discussed, but that mitigation is not required, and that "It must not be

assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment."

The project would remove physical obstacles to population growth around the project area by providing access to previously inaccessible areas of Merced County. This would not directly induce substantial growth, as the underlying zoning, which generally restricts concentrated development, would not change. **As the development of new housing or businesses is not proposed as part of the AME project, no direct inducement of population growth in the project area is anticipated.**

The AME project is programmed in the Regional Transportation Plan, and is therefore consistent with long-term planning in the region. The cities of Atwater and Merced have planned for growth in the area and any growth that would result from the new access associated with the AME project has been previously anticipated in the area.

As discussed in Section 4.2, Land Use and Agriculture, Modified Alternative 1B is within an area planned for commercial development as set forth in the Castle Reuse Plan. The Castle Reuse Plan and Redevelopment Plan did not anticipate the potential development of an expressway within the plan area boundaries, however, the acreage that would be required for Modified Alternative 1B is expected to be minimal in comparison to the total area of future planned uses within the plan area boundaries. Furthermore, the AME would greatly improve access to Castle, and to any futures commercial developments in this area. Due to the fact that the impact acreage would be minimal, and access to the future commercial area improved, conflicts with the Castle Reuse Plan are considered less than significant.

As discussed in Section 4.1, Consistency with Existing Plans and Policies, the AME project is consistent with the relevant local land use policies in the Merced County, City of Merced, and City of Atwater General Plans. The project is consistent with relevant policies of the Merced County General Plan wherein the Plan allows for conversion of agricultural land when conversion is justified and when it may occur with minimal impacts to valuable farmland. The majority of the AME project area would remain zoned for agricultural use with implementation of the project. Urbanization of the lands contiguous or adjacent to the AME would require discretionary land use approvals from the City of Atwater, the City of Merced or the Merced County Board of Supervisors. These discretionary land use approvals include, but would not necessarily be limited to, annexations, General Plan amendments, zoning reclassifications, tentative subdivision or parcel maps, and Conditional Use Permits. With very limited exceptions, each agency's applicable General Plan requires the provision of urban services (including expansion and extension of urban sewer, water and storm drainage facilities) to the project site. Such facilities do not exist at the present time. Further, prior to approval of any of these land use entitlements, the applicant would be required to comply with CEQA. The review of such entitlements under CEQA would be more focused and detailed, because more specific information on the underlying project would be available. While the AME project will not discourage growth, the project's growth-inducing effects would not be considered significant because any future growth would also be required to undergo separate CEQA review and discretionary approval.

~~Therefore, the project would not result in unplanned growth and would not be considered growth-inducing. As mentioned previously, this project is programmed in the Regional Transportation Plan and therefore the new access to previously inaccessible areas is part of the regional planning for the area.~~

Construction of the project would occur over a period of years and would involve many construction workers, which could result in more employment opportunities in the area. It is reasonable to assume that some employees would be hired from the local workforce, but that some construction workers might also relocate to the area for these relatively long-term employment opportunities. Additionally, spending by construction workers could influence the economy in the local area, also increasing employment opportunities. This employment effect could be considered to be indirectly growth-inducing if people moved to the area for these jobs. However, these effects are expected to be relatively minor, as it in unknown how many people would move to the area to take advantage of temporary construction jobs and the temporary increases in local spending. **Therefore, the project would not result in unplanned growth and would not be considered directly or indirectly growth-inducing.**

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CHAPTER 7 ALTERNATIVES

Section 15126.6(a) of the California Environmental Quality Act (CEQA) Guidelines requires that an EIR consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. The alternatives considered should achieve most of the basic objectives of the project but avoid or substantially lessen any of the significant effects of the Project.

Section 15126.6(f) further states that 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." Thus, the following discussion focuses on those alternatives capable of eliminating or reducing the level of significance of one or more of the environmental impacts of the project, even if the alternative would impede to some degree the attainment of some of the project objectives, or would be more costly. Alternatives considered may result in new impacts that would not result from the proposed project.

CEQA also requires that all alternatives analyzed in an EIR must be potentially feasible (CEQA Guidelines Section 15126(d)(1)). Among the factors that must be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, and jurisdictional boundaries. CEQA also requires the evaluation of the No Project Alternative (CEQA Section 15126.6(e)). For the purposes of this analysis, the No Project Alternative analysis is an evaluation of the impacts that are thought likely to occur if neither AME alternative is constructed and if the region continues to develop without this new expressway. **It is important to note that the Environmentally Superior Alternative need not be the Lead Agency's Preferred Alternative for project approval.**

7.1 ALTERNATIVES TO THE AME PROJECT

Alternatives Considered But Rejected

As discussed in **Chapter 3, Project Description**, the AME project was initially considered a joint local agency and state highway project. As part of the development process, procedures developed by Caltrans were followed to define project alternatives and to present them to the public and to local and state decision makers. During this process, a number of different alternatives were considered. One early alternative considered the possibility of widening SR 59 to increase the traffic capacity. After initial consideration, it was determined that this alternative would result in substantial adverse effects on the businesses and residences that are located along this corridor. Other early alternatives were considered and rejected because of logistical difficulties or the presence of environmentally-sensitive areas that would have prevented project construction.

At the end of this initial process of identifying and refining alternatives, three alternatives were given preliminary evaluations, Alignments 1, Alignment 2, and Alignment 3. Alignment 1 became the AME project

and two alternative alignments, Alternatives ~~1A~~ and **Modified Alternative** 1B, were developed for further consideration. These are the two alternatives that have been evaluated in **Chapters 1-6** of this EIR.

Alignments 2 and 3 were considered in initial evaluations but rejected from consideration because the environmental impacts associated with these alternatives were determined to be far greater, particularly in the areas of biological resources. Therefore, the alternatives evaluation in this EIR includes the two Alternatives 1A and **Modified** 1B, addressed in prior chapters, and the No Project Alternative, which will be addressed in this chapter.

7.2 NO PROJECT ALTERNATIVE

The following sections provide a brief analysis of the likely impacts associated with the No Project Alternative in comparison with the impacts anticipated with the AME project. **Table 7.2** provides a summary that compares the impacts of the AME Alternatives with the No Project Alternative.

Consistency with Existing Plans and Policies

Significant impacts resulting from inconsistencies between the project and existing plans and policies were not identified. The project would result in the conversion of farmland to nonagricultural uses which would result in less than significant impacts. Under the No Project Alternative, agricultural land would not be converted and impacts related to inconsistencies with existing plans and policies would not occur.

Land Use and Agriculture

There were no significant land use impacts associated with either alternatives of the AME project related to impacts to agriculture. However, less-than-significant impacts included the cancellation of Williamson Act contracts, and the conversion of Prime and Important Farmland to an expressway land use. Under the No Project Alternative, these impacts would not occur, as there would be no conversion of land and no need to cancel any existing Williamson Act contracts. **The No Project Alternative would also eliminate cumulative impacts to agriculture.**

Population, Housing, and Employment

Section 4.3 identified less-than-significant impacts related to the need to relocate housing to build the AME project. Under Alternative 1A, 19 residences **and 9 businesses, including a large dairy operation,** would require relocation. Under **Modified** Alternative 1B, ~~16~~ **21** residences **and 6 businesses** would be relocated. Under the No Project Alternative, no construction of the AME would occur and no homes would require relocation.

Visual Resources

With respect to visual resources, no significant unavoidable impacts were identified with development of either Alternative in **Section 4.4**. Less-than-significant impacts included minor effects on the scenic Bear Creek corridor, changes in the visual character of the project area and effects associated with removal of

trees. Nighttime lighting impacts were also identified but can be mitigated through the use of appropriate lighting fixtures.

The No Project Alternative would not result in any impacts to the Bear Creek corridor or to the visual character of the area and would not remove any trees. As there is also no lighting associated with the No Project Alternative, there would be no impacts to visual resources. **The No Project Alternative would also eliminate cumulative impacts to visual resources.**

Traffic and Transportation

Section 4.5, Traffic and Transportation, provided an analysis of projected roadway and intersections levels of service (LOS) under "2030 No Build" conditions. This scenario is the same as the No Project Alternative analysis because it presents the LOS under future conditions if the AME project was not constructed. As discussed in the impact section, under the 2030 No Build/No Project Alternative, 13 of the 29 study area intersections would operate at LOS E or worse. Four two-lane highway segments would operate at LOS E or worse. Freeway mainline operations for practically the entire length of SR 99 within the study area would exceed peak hour capacity, resulting in heavily congested traffic conditions in both directions during both the AM and PM peak hours, though the LOS for all multi-lane highway segments would still be anticipated to operate at an acceptable LOS. Therefore, the analysis indicated that there would be significant traffic impacts under the No Project Alternative to 13 intersections and 4 two-lane highway segments.

In comparison, under either Alternative 1A or **Modified Alternative** 1B, capacity and LOS would be improved at the majority of intersections studied and there would be no significant unavoidable impacts to intersection or freeway segment LOS.

Noise

Under existing conditions, most receivers in the project area currently experience noise levels below the Merced County noise significance criteria of 65 dBA Ldn and the City of Atwater Noise significance criteria of 60 dBA Ldn. As with the traffic analysis, the noise analysis in Section 4.6**, Noise,** provides an evaluation of future noise conditions under the 2030 No Build scenario, which represents the same noise environment as would be anticipated in 2030 if the AME were not constructed. Therefore, this analysis provides the information for the No Project Alternative under year 2030 conditions. As discussed in the section, under the No Project Alternative, noise levels in the area would increase at noise sensitive receivers within the project area by up to 8 dBA Ldn, with 23 of 80 noise sensitive receivers experiencing noise levels in excess of applicable noise standards.

Because there would be no project, there would not be any soundwalls built as mitigation measures and these noise levels would not be attenuated, resulting in significant noise impacts at 23 of the measured locations. In comparison, under 2030 with Project conditions significance thresholds would be exceeded at 25 of the 80 noise receiver locations modeled for Alternative 1A and 23 of the 80 noise receiver locations modeled for **Modified** Alternative 1B, however, under either project alternative, these impacts would be mitigated and there would only be residual significant noise impact at one location. **The No Project Alternative would also eliminate cumulative noise impacts.**

Air Quality

Air quality impacts would occur in the project area during construction of the AME project due to emissions of particulate matter and nitrous oxide, both criteria pollutants. These impacts could be mitigated to a level of less-than-significant. Under the No Project Alternative, traffic congestion is anticipated to increase, which could have air quality impacts related to stop and go traffic emissions. This could result in the release of additional criteria pollutants in the San Joaquin Valley Air Basin. However, because these emissions are anticipated to only be a marginal increase when considered in the context of the entire air basin, these impacts would likely not be significant.

Geology, Seismicity, and Soils

Since the project study area is located in an area with a low to moderate possibility to experience strong ground shaking the project could result in impacts related to seismicity. Additionally, the proposed bridge structures are located in areas where unstable soils may affect their structural integrity. If the No Project Alternative were chosen, these impacts would not occur since structures would not be built in the project study area.

Hydrology, Drainage, and Floodplains

The project would impact hydrology and water quality by introducing pollution and/or suspended solids into waterways from stormwater runoff during construction and operation of the new roadway. Impacts related to drainage and flooding would also occur with implementation of the project. Under the ~~n~~**N**o ~~p~~**P**roject ~~a~~**A**lternative, construction would not take place and the ground would not be converted to an impervious surface. Therefore, the impacts that would occur with implementation of the project would not occur under the No Project Alternative.

Hazards and Hazardous Materials

Implementation of the project could potentially impact construction workers as hazardous materials may be encountered during construction. In addition, due to their height, project lighting structures could interfere with airport activities at the former Castle Air Force Base. Under the No Project Alternative these impacts would not occur since construction would not be necessary and no lighting structures would be built.

Implementation of the project would result in the identification and removal of underground storage tanks (USTs) associated with farming activities in the project study area. If the No Project Alternative is implemented, the clean up of USTs would not occur and unidentified leaking USTs could remain in the soil, causing contamination.

In conclusion, the No Project Alternative would not result in impacts related to construction, but would also not provide the beneficial impact of UST identification and removal.

Biological Resources and Wetlands

The AME project would result in the construction of a new roadway through areas that potentially provide habitat for sensitive biological species. Through habitat (mitigation bank) purchases, these impacts would be reduced to a level of less than significant. Under the No Project Alternative, no construction would occur and there would be no impacts to the habitat of biological species. However, there would also be no purchases of credits in mitigation banks that would serve to provide permanent protected habitat for sensitive species.

Paleontological and Cultural Resources

Because no demolition or construction would be required, the No Project Alternative would not result in any ground disturbance or relocation or alterations to any structures. Therefore, under the No Project Alternative, there would be no effects to surface or subsurface archaeological or paleontological resources, or to any historic structures.

There are also beneficial paleontological impacts associated with Alternative 1A and **Modified Alternative** 1B that would not be realized under the No Project Alternative. Mitigation measures are described in Section 4.12**, Paleontological and Cultural Resources,** whereby any fossils found in the area during construction would be investigated, protected through curated in a museum. This could improve the scientific body of paleontological research in the project area, a beneficial impact that would not occur under the No Project Alternative.

Utilities

The project proposed the realignment of a one section of Canal Creek., a Merced Irrigation District ~~drainage~~ **irrigation** facility under Alternative 1A, and two realignments under **Modified** Alternative 1B. These realignments are not anticipated to result in any significant impacts to Canal Creek. Under the No Project Alternative no realignments of Canal Creek would occur and there would be no impacts related to utilities.

The AME project would result in demolition of buildings and roadway structures as well as the removal of vegetation and soil materials. Mitigation is provided to ensure that the AME project does not significantly impact solid waste reduction goals or landfill facilities. Under the No Project Alternative no demolition would occur and there would be no solid waste impacts.

Public Services

Implementation of the project would provide better regional access for public service providers which would be a beneficial impact. However, the AME project would also result in changes to local access that would result in changes (but not impacts) to emergency response routes.

Under the No Project Alternative, traffic conditions are anticipated to worsen such that there would be significant impacts at many intersections and highway segments. Therefore, under future traffic conditions, the congestion on existing roadways would create potentially significant delays in the response time of emergency service providers.

7.3 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines (Section 15126.6(a) and (e)(2)) require the identification of an "environmentally superior alternative" among all of those considered. Under CEQA, the goal of identifying the environmentally superior alternative is to assist decisionmakers in considering project approval. CEQA does not, however, require an agency to select the environmentally superior alternative (CEQA Guidelines Sections 15042-15043).

Table 7-1 contains a comparison of the potentially significant impacts related to the proposed Project and its identified alternatives. The potential impacts associated with the alternatives are discussed in Chapter 4 and in Section 7-1. ~~Would require relocation of a school site~~

Table 7-1 Comparison of Potentially Significant Impacts of Alternatives to Project

Environmental Topic	Alternative 1A	Modified Alternative ~~2A~~ 1B	No Project Alternative
Consistency with Existing Plans and Policies	— Minor inconsistency with agricultural preservation goals	— Minor inconsistency with agricultural preservation goals	Ø
Land Use and Agriculture	— Conversion of a portion of the agricultural land in the County.	— Conversion of a portion of the agricultural land in the County.	Ø
Population, Housing, and Employment	— Relocation of 19 homes **and 9 businesses.**	— Relocation of ~~16~~ **21 homes and 6 businesses.**	Ø
Visual Resources	— Changes in visual character; removal of trees; nighttime lighting impacts.	— Changes in visual character; removal of trees; nighttime lighting impacts.	Ø

Environmental Topic	Alternative 1A	Modified Alternative ~~2A~~ 1B	No Project Alternative
Traffic and Transportation	– General LOS improvements. Changes of access for emergency responders.	– General LOS improvements. Changes of access for emergency responders.	+ LOS impacts to 13 intersections and 4 two-lane highway segments.
Noise	+ Noise Impact to 1 Sensitive Noise Receiver.	+ Noise Impact to 1 Sensitive Noise Receiver.	+ Noise Impacts to 23 Sensitive Noise Receivers.
Air Quality	– Criteria pollutant emissions during construction.	– Criteria pollutant emissions during construction.	– Criteria pollutant emissions due to increased traffic congestion.
Geology, Seismicity, and Soils	– Seismic impacts to overhead structure.	– Seismic impacts to overhead structure.	Ø
Hydrology, Drainage, and Floodplains	– Changes in groundwater recharge.	– Changes in groundwater recharge **and supply. Impacts to flooding, groundwater, and drainage in the depressed section.**	Ø
Hazards and Hazardous Materials	– Potential exposure of construction workers to contaminated soils; project lighting hazards.	– Potential exposure of construction workers to contaminated soils; project lighting hazards.	+ Unsafe UST tanks not removed.

Environmental Topic	Alternative 1A	Modified Alternative ~~2A~~ 1B	No Project Alternative
Biological Resources and Wetlands	– Loss of habitat for biological resources.	– Loss of habitat for biological resources.	Ø
Cultural Resources	– Potential impacts to surface and subsurface resources during construction.	– Potential impacts to surface and subsurface resources during construction.	Ø
Utilities	– 1 realigned section of Canal Creek.	– 2 realigned sections of Canal Creek.	Ø
Public Services	– School crossing issues; changes in emergency response routes.	– ~~Relocation of 1 school site;~~ ~~c~~Changes in emergency response routes.	+ Potential impacts to emergency response times.

Key:
+ = Potential Significant Unavoidable Impacts
– = Less than Significant Impacts
Ø = No Impact

Source: CirclePoint 2007.

Based on this comparison, the No Project Alternative is the alternative with the fewest overall impacts, but the most potentially-significant unavoidable impacts. Of the remaining alternatives, it is difficult to determine which alternative is environmentally superior. Alternative 1A would require the relocation of more homes, but would not result in some of the impacts identified for **Modified** Alternative 1B, namely the realignment of a second section of Canal Creek **and potential flooding and drainage impacts associated with the depressed section of Modified Alternative 1B.** ~~and the relocation of a planned school site~~. When taken as a whole, Alternative 1A is identified as the Environmentally Superior Alternative, **as Modified Alternative 1B would require two realignments of Canal Creek and the flooding, groundwater, and drainage impacts associated with the depressed section between Green Sands Avenue and Canal Creek.** ~~because the additional home relocations would be more disruptive the to community than the relocation of a~~

~~planned, but not yet constructed school.~~ **As previously stated, considerations other than environmental effects, such as financial considerations, could be taken into account when selecting the Preferred Alternative, however.**

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ATWATER-MERCED EXPRESSWAY PROJECT

State Clearinghouse Number 2006081138

Final Environmental Impact Report

Prepared by:
Merced County Association of Governments
MCAG

February 2009



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CHAPTER 1 INTRODUCTION

An Environmental Impact Report (EIR) is an informational document prepared by a Lead Agency (in this case, the Merced County Association of Governments) that contains environmental analysis for public review and for agency decision-makers to use in their consideration of development proposals. The Merced County Association of Governments (MCAG) issued the Draft EIR for the Atwater-Merced Expressway (AME) project on March 3, 2008, and circulated the document for a 60-day public review and comment period. A Public Meeting on the Draft EIR was held on April 1, 2008. Responses to the written comments received on the Draft EIR and comments from the April 1, 2008 Public Meeting were addressed and incorporated into the Final EIR, which was published August 8, 2008. A public hearing for the Final EIR was held on August 21, 2008. Because of project changes, MCAG determined that the Draft EIR should be revised and recirculated for a new round of public review and comment. The Recirculated Draft EIR was published on November 17, 2008 and circulated for a 50-day public review and comment period, which ended on January 5, 2008.[1] A public meeting on the Recirculated Draft EIR was held on December 16, 2008.

Project modifications were made to respond to concerns raised by the Atwater Elementary School District (AESD) during the public comment period for the Draft EIR regarding the impacts of Alternative 1B, which would traverse a portion of a planned but not yet constructed school site (referred to as the "Avenue One school site"). While mitigation was identified in the Draft EIR to reduce this impact to a less-than-significant level by locating a new site for District, further consultation with the AESD and the California Department of Education determined that a more feasible solution would be to slightly realign a 1.3-mile segment of Alternative 1B between Green Sands Avenue and Santa Fe Drive to avoid the Avenue One school site. In addition to realigning the roadway to avoid the school site, Alternative 1B would also be depressed to cross under a new overpass to be built at Avenue One. Avenue One would provide access to the school site from the east. The depressed section of the AME would also help reduce noise impacts to the school site. In the Recirculated Draft EIR, the original Alternative 1B alignment is no longer under consideration and has been replaced with "Modified Alternative 1B".

CEQA Guidelines (Section 15132) specify that the Final EIR shall consist of:

- The Draft Environmental Impact Report or a revision of that Draft;
- Comments and recommendations received on the Draft EIR;
- A list of persons, organizations, and public agencies commenting on the Draft EIR;
- The response of the Lead Agency to significant environmental issues raised in the review and consultation process;

1 CEQA requires a review period of not less than 45 days. Additional days to submit comments were added to the review period to acknowledge that a portion of the review period occurred during a time when many people take holidays.

- Changes to the Draft EIR based on public comment and any additional analysis conducted as a result of public comments.

To save resources CEQA does not require reprinting of the Draft EIR, and instead allows lead agencies to prepare a Final EIR volume that references the Draft EIR. This volume and the Recirculated Draft EIR together make up the Final EIR for the Atwater-Merced Expressway Project. The Recirculated Draft EIR is incorporated in this Final EIR by reference and can be viewed at the MCAG Offices at 369 West 18th Street, Merced, CA 95340.

This FEIR volume includes the following chapters and appendices:

Chapter 1 Introduction

Chapter 2 Comments and Responses to comments on the Recirculated Draft EIR

Chapter 3 Errata and Changes

Chapter 4 Mitigation Monitoring and Reporting Program

Appendices (found on the CD-ROM inside the back cover in the printed version)

Appendix A: Materials Provided by Commenters at the August 21, 2008 Public Hearing on the prior Final EIR (published by not certified)

Appendix B: Attachments to Letter 5 from San Joaquin Raptor/Wildlife Rescue Center and Protect Our Water

Appendix C: Attachments to Letter 12 from Ms. Marsha A. Burch

Appendix D: AME Project Affected Parcels

Chapter 2 of this document includes responses to comments on environmental issues or factual data subsequently received on the November 2008 Recirculated Draft EIR. Comments on the Recirculated Draft EIR were received by mail, by email, and at a public meeting held on December 16, 2008. Each comment letter or email is assigned a number and the individual comments within each piece of correspondence are assigned coding numbers (e.g., Comment 1.1, Comment 2.1). Comments provided orally at the public meeting are coded collectively as "Oral Comments Received on the Recirculated Draft EIR" under Comment 17. Immediately following each piece of correspondence is the response to identified comments, which are coded using the same number and letter system (e.g., Response 2.1.) Chapter 2 also provides the comments received on the March 2008 Draft EIR, and on the August 2008 Final EIR (not certified). Responses to these earlier comments are provided as well, generally as references to where this comment was addressed in the Recirculated Draft EIR.

Chapter 3 of this document includes errata/changes to the Recirculated Draft EIR. Chapter 4 of this document includes the Mitigation Monitoring and Reporting Program (MMRP) for the Atwater-Merced Expressway project.

Certification of the Final EIR

Before the MCAG may approve the project, it must certify that the Final EIR adequately discloses the environmental effects of the proposed project, that the Final EIR has been completed in conformance with the California Environmental Quality Act (CEQA), and that the decision-making body of the Lead Agency independently reviewed and considered the information contained in the Final EIR. Certification of the Final

EIR would not mean that the MCAG is approving the proposed project or any of the alternatives described in the EIR. Rather, certification of the Final EIR would indicate the MCAG's determination that the Final EIR adequately evaluates the environmental impacts that could be associated with the proposed project.

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CHAPTER 2 COMMENTS AND RESPONSES

The Merced County Association of Governments (MCAG) made available the Recirculated Draft EIR (Recirculated DEIR) for a 45-day public comment period.

LIST OF PEOPLE AND ORGANIZATIONS COMMENTING ON THE DRAFT EIR

The following state, regional, and local agencies, organizations, and individuals have commented on the Recirculated DEIR during the public comment period. Each piece of correspondence (referred to hereafter as "comment letter") is assigned a number. Comment letters from public agencies are addressed first followed by comment letters from the public. Each individual comment within a correspondence is referred to by a number code (e.g., Comment 1.1, Comment 1.2, etc.) with an accompanying response (e.g., Response 1.1).

Comment Letters Received on the Recirculated Draft EIR Issued November 17, 2008

1. State Clearinghouse and Planning Unit
2. State of California Public Utilities Commission
3. Merced Irrigation District
4. Atwater Elementary School District
5. San Joaquin Raptor/Wildlife Rescue Center and Protect Our Water
6. Long and Seng X. Thao
7. Mr. Harry Strawbridge
8. Mr. Gary Bacom, Owner of Bacom's Used Cars
9. Mr. Ron Wrighton, Owner of Rons Auto Sales
10. Ms. Stephanie M. Goulef, Yosemite Auto Sales
11. Mr. Glen and Ms. Darlene Peters
12. Ms. Marsha A. Burch
13. Ms. Maureen McCorry
14. Mr. Joe and Ms. Camilla Foster

Oral Comments Received at the Recirculated Draft EIR Public Meeting on December 16, 2008

15. Oral Comments Received at Public Meeting

Comments Received at the Final EIR (published but not certified) Public Hearing on August 21, 2008

16. MCAG Governing Board Meeting Minutes

MCAG received materials during the August 21, 2008 public hearing that do not directly relate to the AME project. Notwithstanding this fact, these materials have been included in this Final EIR in Appendix A.

Comment Letters Received on the Draft EIR Issued March 3, 2008

17. State Clearing House and Planning Unit
18. California Department of Water Resources
19. Merced County Farm Bureau
20. State of California Public Utilities Commission
21. Merced County Department of Commerce, Aviation, and Economic Development
22. California Department of Transportation
23. San Joaquin Raptor/Wildlife Rescue Center and Protect Our Water
24. Valley Land Alliance
25. Migliazzo and Sons Dairy
26. Mr. Robert Hagerman
27. Brookfield California Land Holdings, LLC
28. Castle Farms, Inc.
29. Mr. John and Ms. Judy Luthey
30. Mr. Greg Sanders
31. Long Thao, MD Medical Clinic

Comments Received at the Draft EIR Public Hearing on April 1, 2008

32. Reporter's Transcript of Comments Received at Draft EIR Public Hearing

COMMENT LETTERS AND RESPONSES

The following pages provide each of the comment letters and the corresponding comment responses.

Comment Letters Received on the Recirculated Draft EIR Issued November 17, 2008

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Comment 1

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

January 6, 2009

Jesse Brown
Merced County Association of Governments
369 W. 18th Street
Merced, CA 95340

Subject: Atwater-Merced Expressway
SCH#: 2006081138

Dear Jesse Brown:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on January 5, 2009, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. 1.1

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Terry Roberts

Terry Roberts
Director, State Clearinghouse

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JAN 08 2009
MCAG

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2006081138
Project Title Atwater-Merced Expressway
Lead Agency Merced County Association of Governments

Type EIR Draft EIR

Description NOTE: Recirculated

The proposed project will begin at the intersection of existing Route 59 and Bellevue Road north of Rout 99 and end at the intersection of Route 140 and Gurr Road south of Rout 99. The new roadway facility will be constructed as a 4-lane expressway with access control.
Two (2) alignment alternatives are being studied in addition to the No-Build Alternative.

Lead Agency Contact

Name Jesse Brown
Agency Merced County Association of Governments
Phone (209) 723-3153 **Fax**
email
Address 369 W. 18th Street
City Merced **State** CA **Zip** 95340

Project Location

County Merced
City Atwater, Merced
Region
Lat / Long 37° 21' 36" N / 120° 32' 9" W
Cross Streets State Route 59 and Bellevue Road to State Route 140 and Gurr Road
Parcel No. Multiple
Township 6S **Range** 13E **Section** 34 **Base**

Proximity to:

Highways SR 59, SR 99, SR 140
Airports Castle
Railways UPRR and BNSF
Waterways Canal Creek and Black Rascal Creek
Schools Multiple school districts
Land Use Various, primarily Agricultural designations

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Cumulative Effects; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Geologic/Seismic; Growth Inducing; Landuse; Noise; Other Issues; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife

Reviewing Agencies Resources Agency; Department of Conservation; Cal Fire; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 10; Caltrans, Division of Transportation Planning; Air Resources Board, Transportation Projects; Regional Water Quality Control Bd., Region 5 (Fresno); Department of Toxic Substances Control; Native American Heritage Commission

Date Received 11/17/2008 **Start of Review** 11/18/2008 **End of Review** 01/05/2009

Note: Blanks in data fields result from insufficient information provided by lead agency.

Response to Comment 1A – State Clearinghouse and Planning Unit

COMMENT 1.1. This comment reiterates that the State Clearinghouse submitted the AME Recirculated Draft EIR to selected state agencies for review. The review period closed on January 5, 2009, and no state agencies submitted comments by that date. This letter acknowledges compliance with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act (CEQA) commonly used standards.

RESPONSE 1.1. This comment is noted. No further response is required.

STATE OF CALIFORNIA Arnold Schwarzenegger, *Governor*

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

January 5, 2009

Jesse Brown
Merced County Association of Governments
369 West 18th Street
Merced, CA 95340

Re: Notice of Completion, Draft Environmental Impact Report (DEIR)
Atwater-Merced Expressway
SCH# 2006081138

Dear Mr. Brown:

As the state agency responsible for rail safety within California, the California Public Utilities Commission (CPUC) recommends that development projects proposed near rail corridors be planned with the safety of these corridors in mind. New developments and improvements to existing facilities may increase vehicular traffic volumes, not only on streets and at intersections, but also at at-grade highway-rail crossings. In addition, projects may increase pedestrian traffic at crossings, and elsewhere along rail corridor rights-of-way. Working with CPUC staff early in project planning will help project proponents, agency staff, and other reviewers to identify potential project impacts and appropriate mitigation measures, and thereby improve the safety of motorists, pedestrians, railroad personnel, and railroad passengers.

The two (2) alignment alternatives for the proposed 7 mile expressway in the DEIR should evaluate potential project related rail safety impacts, and measures to reduce adverse impacts. 2.1

Thank you for your consideration of these comments. If you have any questions in this matter, please call me at (415) 713-0092 or email ms2@cpuc.ca.gov.

Sincerely,

Moses Stites
Rail Corridor Safety Specialist
Consumer Protection and Safety Division
Rail Transit and Crossings Branch
515 L Street, Suite 1119
Sacramento, CA 95814

Response to Comment 2 – Public Utilities Commission

COMMENT 2.1. This comment recommends that the AME Recirculated Draft EIR evaluate potential project-related rail safety impacts and measures to reduce any potential adverse impacts.

RESPONSE 2.1. The AME project would cross the Burlington Northern Santa Fe (BNSF) and Union Pacific Railroad (UPRR) rail lines that pass through the project area. However, as indicated on page 3-5 of the Recirculated Draft EIR, the AME would construct new grade-separated crossings over the Burlington Northern Santa FE (BNSF) and Union Pacific Rail Road (UPRR) tracks, which would allow vehicles to safely cross over these existing rail lines. As required, the project sponsor will seek California Public Utilities Commission approval for construction of the grade-separated crossing of railroad tracks. In addition, the AME project would not alter any existing at-grade railroad crossings in the project area. As a result, the AME project would not create any rail safety impact or alter any existing rail safety condition and therefore this issue was not addressed in the Recirculated Draft EIR.

Comment 3

MERCED IRRIGATION DISTRICT

December29, 2008

Atwater-Merced Expressway Project EIR
MCAG
Attn: Jesse Brown, Executive Director
369 18th Street
Merced, CA 95340

Subject: Recirculated Draft EIR for Atwater-Merced Expressway

Dear Mr. Brown:

The Merced Irrigation District (MID) has reviewed the above referenced project and offers the following comments:

The subject property is located within the Merced Irrigation District Drainage Improvement District No. 1 (MIDDID No. 1) and also the Merced Irrigation District (MID). There are several irrigation facilities within the study area which also convey storm water. The impacted MID facilities (depending upon final alignment) may include the following major facilities plus smaller laterals and possibly well sites:

- Black Rascal Creek
- Canal Creek
- Livingston Canal

If Expressway storm drainage is discharged to any MID facilities, the Agency Agreement between MIDDID No. 1 and Merced County will have to be amended to reflect the additional drainage benefit provided.

3.1

Expressway construction that impacts MID rights-of-way for canals, irrigation laterals and creeks will require a "Construction Agreement" and a "Joint Use Agreement" between MID and Merced County. Said agreement shall perpetuate MID's senior rights. Electrical transmission lines, canals, laterals, creeks, well sites and other MID facilities that may have to be modified or relocated will be done so at the expense of the lead agency. MID requests a signature block on all "Improvement Plans" relating to MID facilities, including drainage facilities that plan to discharge to MID facilities.

3.2

744 West 20th Street P.O. BOX 2288 Merced, California 95344-0288
Administration / Electric Services (209) 722-5761 / FAX (209) 722-6421 / Water Resources Engineering (209) 722-5761 / FAX (209) 726-4176
Finance \ Billing Dept. (209) 722-3041 / FAX (209) 722-1457 / Irrigation Operations (209) 722-2720 / FAX (209) 722-1457

Where expressway facilities cross MID facilities, access to the MID facilities shall be included in the design along with secured easements if necessary. Construction activity involving MID irrigation facilities shall be confined to the time period between November 1 and March 1 unless MID permission is first obtained. 3.3

Thank you for the opportunity to comment on the above referenced project. If you have any questions, please contact me at 722-5761.

Sincerely,

Rory Randol
Facilities Specialist

cc: Dan Pope, General Manager
Ted Selb, Deputy General Manager
Robert Acker, Director of Facilities and Streams
Hicham ElTal, Assistant General Manager - Water Resources Engineering
Ron Price, Associate Engineer - Water Resources
Robert Lindsey, MIDDID No. 1

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Response to Comment 3 – Merced Irrigation District

COMMENT 3.1. This comment indicates that the AME project is located within the Merced Irrigation District Drainage Improvement District No. 1 (MIDDID No. 1) and the Merced Irrigation District (MID). If the AME storm drainage is discharged into any MID facility, the Agency Agreement between MIDDID No. 1 and Merced County will have to be amended to reflect the additional drainage benefit.

RESPONSE 3.1. As stated on page 4.9-17 of the Recirculated Draft EIR, if the AME stormwater drainage is discharged into any MID facilities, the Agency Agreement between the MIDDID No. 1 and Merced County will have to be amended to reflect the additional drainage benefit provided by the MID facilities.

COMMENT 3.2. This comment indicates that any AME construction activities that would impact MID facilities would require a Construction Agreement and a Joint Use Agreement between MID and Merced County. Any modifications or relocations of MID facilities would be provided at the expense of the lead agency. This comment also requests a MID signature block on all Improvement Plans for MID facilities as a result of the AME.

RESPONSE 3.2. Page 4.9-16 of the Recirculated Draft EIR indicates that construction activities associated with the project that impact MID rights-of-way for canals, irrigation laterals, and creeks will require a construction agreement and a joint use agreement between MID and Merced County. MCAG is the lead agency for the AME project and will ensure that the rights of the MID are preserved. Further coordination between the MID and MCAG would occur during the final design phase and right-of-way acquisition process for the AME project to determine the specific modifications and relocations of MID facilities. MCAG will coordinate with the MID to ensure that MID operations and services are maintained.

COMMENT 3.3. This comment states that where the AME facilities cross MID facilities, access to the MID facilities should be included in the project design with secured easements and that construction activity involving MID irrigation facilities be confined to the time period between November 1 and March 1, unless MID permission is granted.

RESPONSE 3.3. As discussed in response to comment 2.2 above, MCAG will ensure that the rights of MID are preserved. As stated on page 4.9-16 of the Recirculated Draft EIR, construction activities associated with the project that impact MID rights-of-way for canals, irrigation laterals, and creeks will require a "construction agreement" and a "joint use agreement" between MID and Merced County. During the final design phase and rights-of-way acquisition process of the AME, MCAG will ensure that access to the MID facilities is maintained.

Comment 4

ATWATER ELEMENTARY SCHOOL DISTRICT
A Tradition of Excellence

December 30, 2008

Jesse Brown, Executive Director
Merced County Association of Governments (MCAG)
369 West 18th Street
Merced, California 95340

RE: Recirculated Draft EIR for Atwater-Merced Expressway Project (SCH# 2006081138)

Dear Mr. Brown:

The purpose of this letter is to provide the comments of the Atwater Elementary School District on the Recirculated Draft EIR for the Atwater-Merced Expressway Project.

Our review of the Recirculated Draft EIR indicates that the various concerns of the District regarding the previous Draft EIR have been addressed. These concerns included air quality and noise impacts in relation to our Avenue One school site, provision of appropriate school site area circulation/safe routes to school, potential hazardous materials/emergency response issues, and the original unacceptable 1B route alternative that passed through our school site. 4.1

Although we had no choice but to start out in an adversarial position in relation to the project, we would like to commend MCAG staff and your engineering and environmental consultants in working with us to address and resolve our concerns. We greatly appreciate the spirit of cooperation we received from all parties. We are now in a position of full support for the project, which will be of great benefit to the region, as well as appropriately provide for the future of our students with the Avenue One school site. In addition, the California Department of Education has granted their continuing approval of the Avenue One school site property with the AME modifications. 4.2

We wish you the best as you move forward to approve and implement the project. Please let me know if we can be of assistance to you.

Sincerely,

Melinda Hennes

Melinda Hennes,
Superintendent

Cc: AESD Board of Trustees
Jimmy W. Sims, Mark Thomas and Company
Joshua Channel, CirclePoint

Superintendent's Office
1401 Broadway / Atwater, CA 95301
(209) 357-6100 / (209) 357-6514

Response to Comment 4 – Atwater Elementary School District

COMMENT 4.1. This comment states that the Atwater Elementary School District's concerns regarding air quality, noise, traffic, and hazardous materials issues in the Draft EIR (March 2008) have been adequately addressed in the Recirculated Draft EIR (November 2008).

RESPONSE 4.1. The comment is noted. No further response is required.

COMMENT 4.2. This comment commends MCAG staff and the engineering and environmental consultants in working with the Atwater Elementary School District to address and resolve the District's concerns regarding the AME and the proposed Avenue One school site. This comment expresses support for the AME project.

RESPONSE 4.2. The comment is noted. No further response is required.

Recirculated Draft Environmental Impact Report ATWATER-MERCED EXPRESSWAY PROJECT State Clearinghouse Number 2006081138

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Atwater-Merced Expressway Project EIR
Merced County Association of Governments
ATTN: Jesse Brown, Executive Director
369 18th Street
Merced, CA 95340
AMEcomments@mcagov.org

January 5, 2009 Via: e-mail

Re: Recirculated Draft Environmental Impact Report ATWATER-MERCED EXPRESSWAY PROJECT State Clearinghouse Number 2006081138

MCAG's second attempt at a valid DEIR seems to rely for its authority on unseen powers -- they certainly are not evident in the document -- perhaps on a series of interlocking memoranda of understanding engrossing the entire region. Finally, this DEIR it is no more than another attempt to meet a funding deadline for an expressway that will restrict local transportation, change land-use over many square miles among other impacts, and involves two cloverleaves, one underpass and one or two overpasses, all in the space of seven mis-located miles of roadway. 5.1

The argument itself for the need of such a road rests on an economic and social premise that becomes more invalid by the week. Merced County and its two neighboring north San Joaquin Valley counties comprise the epicenter of a national speculative real estate boom based on fraudulent mortgage lending practices that has busted, creating what reliable economists now call the "first global depression." Projections of growth for a decade or 20 years in Merced County are not worth the paper they are written on in a real estate market where existing homes are selling for half the price they were selling for when these projections were made, Merced and Atwater are ringed by half finished subdivisions that bankrupted their developers and a significant portion of their former homeowners, the bottom of this real estate bust has not yet been reached. A more likely economic projection than growth in this area is double-digit unemployment for the entire state in the near future. 5.2

The AME is tiered off the 2007 Regional Transportation Plan for Merced County (May 17, 2007) and its 2008 update. These plans are already outdated due to the extraordinary change in the real estate market and general economic conditions in the Valley and elsewhere. These plans are in fact useless planning documents at this point. There is 5.3

presently an oversupply of homes for sale and a growing glut of rentals. Neither Stanislaus nor Merced were able to pass transportation funds from sales tax increases. Both counties went through huge building booms without collecting appropriate amount of transportation impact fees from developers. For example, Merced missed an UC-estimated $200 million in infrastructure funds from UC Merced. In fact, UC Merced still owes money to taxpayers of City of Merced for the illegal sewer line connecting the campus to Merced's wastewater treatment plant. Now, MCAG claims to be relying on state funds? The state is heading rapidly toward a debt around $30 billion and its bonds trade at junk-bond rates, the governor is slashing social spending everywhere in the budget and there is even serious talk of state tax increases.

5.3 Cont.

However, if the economy were to recover sufficiently, this DEIR does not analyze the growth-inducing impacts if this project. Examples abound in the region of the growth-inducing impacts of such projects. Look at the growth created when Stanislaus County opened (Pelandale, Stoddard, etc. in North Modesto. In Merced, the UC campus stimulated enormous, disastrous growth that was never properly analyzed in the LRDP. If or when the economy recovers, there will be commercial and urban growth impacts to ag lands and their biological resources adjoining the AME. Based on experience of an extensive land-use pattern presently occurring in Merced County, the project will be one more inducement for ag conversion to urban and commercial use because it is cutting through prime ag land and rangeland. This will follow the same dismal pattern: farmers will split their lots, develop ranchettes and later subdivisions. And these are unlikely to be "nice" subdivisions. They are more likely to follow the pattern of Highway Village between SR99 and Carver Road in Modesto – extensions of low-income neighborhoods around Buhach Road and the Beechwood/Franklin area – covering more excellent farmland. In light of a number of pressing statewide issues, from air pollution to preservation of farmland and global warming, this potential growth inducement must be analyzed. It is no longer valid to argue backwards from invalid growth projections to justify new transportation infrastructure. Merced is neither South Placer nor Riverside counties.

5.4

California is in another of our periodic droughts, making studies of vernal pools and wetlands, and the 15 federally listed endangered species associated to them, invalid, as the US Fish and Wildlife Service has informed MCAG. The road will also severely restrict habitat connectivity for the highly endangered San Joaquin Kit Fox. The surveys and protocols of the DEIR are invalid. The work has not been done and cannot be done an acceptable fashion until the drought ends. Therefore, the DEIR for the project is premature and is invalid for this highway funding cycle.

5.5

The issue of ag land mitigation raises the whole prior problem of the authority of MCAG, founded on an MOU and operating in concert with other MOU-based organizations. We are against in lieu fee mitigation for ag lands. Our position is – regardless of the lack of a countywide agland-mitigation ration policy – that MCAG must mitigate its take of agland at a 5:1 ratio. Historically, MCAG was being used by the County to establish a county wide ag mitigation policy under the County Agricultural Preservation Strategy (CAPS), whose purpose was to establish in lieu fee ag mitigation. This follows a general pattern in

5.6

Merced County of using MCAG to develop policies circumvent public participation and do not comply with CEQA or NEPA. CAPS was a great example – there was no environmental review of CAPS. MCAG operates outside legally compliant jurisdictional general plans. The Blueprint and the Partnership, other prominent MOUs in the Valley, have cultivated a public relations illusion of being umbrella for MCAG and other Valley CAGs, COGs. This illusion of regional planning, directed by uncritically pro-growth finance, insurance and real estate special interests, runs over real, legal, publicly responsible jurisdictions' compliance with general plans. Regarding AME, for example, until the County has legally adopted an updated, valid General Plan, this project has no legal jurisdictional validity. Two very simple points are that there is no countywide ag mitigation ratio policy and there is no countywide grading ordinance. 5.7

We find reasons to disagree with every category in the environmental checklist. 5.8

We question whether the expressway status of AME is legal in lieu of a countywide expressway ordinance. 5.9

NEPA review is not dependent on federal highway funds. NEPA is dependent on the presence of federally endangered species. To assume in June 2006 that only CEQA review is required because mainly state funds will be used may is not a valid economic assumption today. The countywide transportation surtax on sales taxes was defeated three times in Merced County. Furthermore, aside from the question of the origins of state transportation funds (typically federal), there is the issue of matching STP federal exchange funds that – if not already present – might appear in the future if, in fact, this project would receive initial, non-federal funding. 5.10

We are resubmitting documents submitted for the previous DEIR, first, because MCAG's response to these documents was inadequate. Secondly, these documents address vital issues concerning funding of the project and future road projects in the county; environmental issues; UC Merced, the destination of all the various expressway and loop road projects in eastern Merced County; the failure of the county to update the over-amended and out-of-date General Plan in a timely manner; lack of coordination with other jurisdictional general plans; failure to present a coordinated plan for the development of the Bellevue Corridor; and piecemealing expressway projects. 5.11

Lydia M. Miller

Steve Burke

Cc. Interested Parties

Response to Comment 5 – San Joaquin Raptor/Wildlife Rescue Center and Protect Our Water

San Joaquin Raptor/Wildlife Rescue Center and Protect Our Water submitted a number of attachments with the comment letter. The attachments can be found in Appendix B.

COMMENT 5.1. This comment appears to reference that MCAG's authority to act as Lead Agency for the preparation of this EIR relies on "unseen powers." The comment also indicates that the Recirculated Draft EIR is an attempt to meet a funding deadline for a "mis-located" expressway that will restrict local transportation and change land uses within the project area.

RESPONSE 5.1. MCAG is a regional association of city and county governments specifically created to consider issues and projects of regional significance, in areas such as transportation and transit, solid waste, and air quality. MCAG maintains a regional transportation model and is responsible for regional transportation planning. As such, MCAG is well suited to consider a project that spans the municipal boundaries and spheres of influence of the cities of Atwater and Merced and Merced County lands. Final adoption of the project into the general plans of these two cities and the county would take place as a separate process.

As discussed in Section 3.3, Project Objectives, of the Recirculated Draft EIR, the purpose and need of the AME project is generally to accommodate the projected regional traffic growth in the Atwater-Merced area and to alleviate existing and projected traffic congestion and safety issues. In general, CEQA documents, such as this Recirculated Draft EIR, do not consider the availability of effects of project funding and are not required to do so under CEQA. The Recirculated Draft EIR is intended to be used by decision-makers to evaluate the merits of the project relative to its environmental impacts and as such does not include an evaluation of project funding. The AME project is a large-scale, long-range project that will require diverse funding sources and may take place in phases, as funding allows. In addition to funding for the project itself, many of the mitigation measures (which will be mandatory and enforced through a Mitigation Monitoring Program) will require the expenditure of substantial funds. The source(s) of this funding also need not be evaluated in this EIR.

Chapter 4.0, Environmental Setting, Impacts and Mitigation Measures, evaluates the environmental impacts of the AME project and provides mitigation measures to reduce potentially significant impacts to a less-than-significant level, where feasible. As discussed in Section 4.5, Traffic and Transportation, the AME project would improve traffic operations at the majority of the local study intersections, when compared to 2030 No Build conditions. This would benefit regional transportation by reducing traffic congestion and decreasing travel times during peak hours. The AME would also result in improved traffic operations at the majority of roadway segments in the project area, when compared to 2030 No Build conditions, particularly for SR 59 and portions of SR 99.

Changes in land uses, including impacts to agricultural land uses, were also found to be less-than-significant in Chapters 4.1, Consistency with Existing Plans and Policies, and 4.2, Land Use and Agriculture. The AME project was found to be consistent with the relevant local land use policies in the Merced County, City of Merced, and City of Atwater General Plans, as documented in Section 4.1. Section 4.2 documents that the loss of approximately 300 acres of farmland that would be converted with the project represents only 0.05 percent of the 589,324 Prime and Important Farmland acres in Merced County. Although this is considered a less-than-significant impact, MCAG proposes to mitigate for the loss of agricultural lands by purchasing conservation easements at a 1:1 ratio for impacted farmland, or contribute to a countywide program adopted by Merced County prior to project construction. Therefore, land use changes and local transportation have been considered in the Recirculated Draft EIR.

COMMENT 5.2. This comment states that the growth projections within the Recirculated Draft EIR do not reflect reality, as Merced County and the two north neighboring San Joaquin Valley counties have experienced substantial reductions in housing prices due to the housing market collapse in 2008.

RESPONSE 5.2. Past and present information regarding population and housing was obtained from the U.S. Census and California Department of Finance. Forecasts of future population in Merced County, City of Atwater and Ciity of Merced were obtained from MCAG 2007 Regional Transportation Plan. MCAG is the regional planning authority for Merced County and their projections of future population within the project area are considered the most accurate and appropriate for use in this Recirculated Draft EIR.

Despite the current economic conditions and the reduction in housing prices throughout the nation, the land use plans and land use patterns for Merced County and the cities of Merced and Atwater have not changed. The County and City General Plans have not been revised and the land use plans remain unchanged. Additionally, the underlying need for the AME project has not changed. While the current economic conditions could have an effect on the anticipated timeline for growth in the project region, the underlying need for the AME project remains – to accommodate future growth in the project region. The local decision-makers who will determine whether to approve the project will consider the merit and need for the AME project, considering both current resources and future need.

COMMENT 5.3. This comment indicates that the 2007 Regional Transportation Plan for Merced County and its 2008 update, on which the AME project is based, are outdated due to the changes in the real estate market and general economic conditions in the Central Valley.

RESPONSE 5.3. See response to comments 5.1 and 5.2.

COMMENT 5.4. This comment states that the Recirculated Draft EIR does not analyze the growth-inducing impacts of the AME project. The comment suggests that there could be commercial and urban growth impacts to agricultural land and biological resources adjoining the AME and that the AME will induce the conversion of agricultural land to urban uses. The comment also indicates that the project, in combination with other projects, would contribute to a cumulative loss of agricultural land through both direct conversion and indirectly through land rezoning.

RESPONSE 5.4. Section 6.5, Growth Inducement, of the Recirculated Draft EIR addresses direct and indirect growth inducement as a result of the project on pages 6-3 through 6-4, in conformity with CEQA Guidelines Section 15126.2(d). The discussion documents that the project is consistent with the Regional Transportation Plan and would be located in areas where the cities of Atwater and Merced have planned for future growth, as documented in Section 4.1 of the Recirculated Draft EIR. Therefore, the project would not result in any direct or indirect unplanned growth. Direct physical impacts to biological resources and agriculture are addressed in Sections 4.11 and 4.2, respectively, of the Recirculated Draft EIR. Section 5.2 of the Recirculated Draft EIR documents that the urbanization of Merced County has resulted in a cumulative loss of agricultural land. Mitigation measures provided in Section 4.2 (discussed above in Response 5.1) would somewhat reduce the project's contribution to this cumulative impact.

COMMENT 5.5. This comment states that the biological surveys and protocols in the Recirculated Draft EIR are invalid. As California is in a period of drought, the surveys for wetlands and vernal pools cannot be performed in an acceptable fashion until the drought has ended. The comment also indicates that the AME will restrict habitat connectivity for San Joaquin kit fox.

RESPONSE 5.5. As the commenter has noted, Winter 2006/2007 protocol surveys for California tiger salamander throughout the Central Valley were considered invalid by the U.S. Fish and Wildlife Service (USFWS) due to a lack of rainfall. Although surveys conducted prior to this season did not find evidence of

the species, the roadways was realigned to minimize direct impacts to potential habitat for the species, as documented on page 4.11-45 of the Recirculated Draft EIR. MCAG has assumed that the species occurs in the project area and where impacts would occur, and has provided mitigation measures consistent with USFWS guidance. Many protocol surveys conducted during this period for vernal pool fairy shrimp were also considered invalid. The protocol surveys conducted for this species involved lab hatching of eggs collected during dry season surveys, which found evidence of two species of the protected freshwater shrimp near Bellevue Road. These surveys were considered valid by USFWS. To protect the species, the roadway was realigned to completely avoid these vernal pools.

COMMENT 5.6. This comment expresses opposition to the in-lieu countywide agricultural land mitigation ratio policy within the Recirculated Draft EIR and suggests that MCAG adopt a 5:1 ratio for agricultural land mitigation.

RESPONSE 5.6. MCAG has reviewed the agricultural mitigation policies of other jurisdictions and consulted with the Merced County Farm Bureau. Based on this review and consultation, there appears to be no set policy or consistent mitigation standard for the replacement of agricultural lands. The most consistent mitigation standard used by other agencies appears to be replacement at a 1:1 ratio. While the conversion of farmland as a result of the AME project is considered a less-than-significant impact, MCAG proposes to mitigate for the loss of agricultural lands in conformance with any countywide program adopted by Merced County prior to project construction. If no countywide program is adopted at the time of construction, MCAG shall purchase conservation easements at a 1:1 ratio for impacted farmland. As the project does not introduce a significant impact to agricultural lands and the land replacement ratios are well within commonly-used standards, the mitigation ratios in the Recirculated Draft EIR for agricultural impacts are reasonable and appropriate.

COMMENT 5.7. This comment states that the Recirculated Draft EIR has no legal jurisdictional validity until Merced County has legally adopted and updated and valid General Plan, particularly in regards to a countywide agricultural mitigation ratio policy and countywide grading ordinance.

RESPONSE 5.7. The Recirculated Draft EIR uses information from the 1990 Merced County General Plan, which is the most current valid planning document for the County. At present, the Merced County General Plan does not include a countywide agricultural mitigation ratio or grading ordinance policy. In spring 2006, Merced County began a three-year process to update the Merced County General Plan. As this General Plan update has not been certified or adopted by the County, the 1990 Merced County General Plan stands as the legal General Plan for the County.

COMMENT 5.8. This comment states that the San Joaquin Raptor/Wildlife Rescue Center and Protect Our Water find reasons to disagree with every category in the environmental checklist.

RESPONSE 5.8. The comment is noted. CEQA Statutes recognize that differences in opinion between experts may occur, and that these differences do not invalidate findings of impact. No further response is required.

COMMENT 5.9. This comment questions whether the status of the AME as an expressway is legal in lieu of a countywide expressway ordinance.

RESPONSE 5.9. The use of the term "expressway" is a matter of semantics, to assist the public in understanding the general type of roadway proposed. It is not intended to create a legal precedent of establishing an expressway standard for Merced County, although after publication of the Notice of Preparation and the Draft EIR, Merced County did adopt an expressway standard that is consistent with this project. The Merced County General Plan defines an expressway as having a minimum 120-foot right-of-way

with fully controlled access and ½- to 1-mile interval distances between intersections in urban areas and larger distances in rural areas. Typical traffic volumes would range from 9,600 to 40,000 average daily trips, with speeds ranging from 40 to 55 miles per hour (mph) in urban and rural areas. All utilities within the expressway right-of-way are required to be placed underground and areas should be provided for emergency parking only. The AME would be constructed per the California Department of Transportation (Caltrans) expressway standards,[1] although the AME is not a Caltrans facility, and would not therefore set any precedent for the use of the term "expressway."

COMMENT 5.10. This comment indicates that only providing a CEQA analysis for the AME project is not valid.

RESPONSE 5.10. As it is presently conceived, the AME project would not receive federal funding for project construction or operation and as such, the AME project is not subject to National Environmental Policy Act (NEPA) regulations. The CEQA analysis is valid for projects receiving local and state funding. However, if federal funds were later allocated for the AME project, additional environmental evaluation under NEPA would be required.

COMMENT 5.11. This commenter indicates that they have reattached their original (March 2008) comment letter and supplementary materials because they feel that MCAG's responses to the comments were not adequately addressed in the Recirculated Draft EIR.

RESPONSE 5.11. The Recirculated Draft EIR builds on the March 2008 Draft EIR and August 2008 Final EIR, which was published but not certified, and includes additional analysis and updates to previous analysis where necessary. The text of the Recirculated Draft EIR has been updated in some sections to address public and agency comments received on the March 2008 Draft EIR. For the benefit of the reader, such additions and revisions have been highlighted in the Recirculated Draft EIR using marked text (strikethrough for deletions, underlined bold text for additions). Responses to comments on the March 2008 Draft EIR and August 2008 Final EIR are also provided as part of this Final EIR for the ease of the reader.

[1] Caltrans defines an expressway as an arterial highway with at least partial control of access, which may or may not be divided or have grade separations at intersections. For comparison purposes, a freeway is defined as a divided arterial highway with full control of access and with grade separations at intersections.

Comment 6

LONG AND SENG X. THAO
1829 N. GURR RD
ATWATER, CA 95301

DECEMBER 24, 2008

ATWATER-MERCED EXPRESSWAY PROJECT EIR
MERCED COUNTY ASSOC. OF GOV.
ATTN: JESSE BROWN, EXECTIVE DIRECTOR
369 W. 18TH ST.
MERCED, CA 95340

RE: COMMENT FOR ATWATER-MERCED EXPRESSWAY

DEAR MR. BROWN:

We wanted to comment and input some recommendations on the Atwater-Merced Expressway. We feel that the expressway is detrimental for the county because of the current economy and the astronomical foreclosures of the county. Where is the money going to be coming from? There are many other hurdles such as the Propositions for funding the expressway, that has not passed, during the elections and increasing the cost for developers, to build at $2000.00 per a house. Who will want to build or expand here? But the most important factor for not supporting the expressway is the loss of agriculture land and dairy farms that have benefited the community for many generations. 6.1 6.2

If the expressway is necessary, please consider our recommendations:

1. If it is possible to curve the road a little more off our property, since it seems to be right in our back yard. 6.3
2. Is it possible to put a sound barrier wall on Gurr Rd, in front of our house, since that will be a busy road also? 6.4
3. I hope that you will consider expanding the creek, along with the expressway bridge so as to minimize flooding on our property. 6.5

Thank you for considering our comments.

Sincerely,

Long and Seng X. Thao

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DEC 26 2008
MCAG

Response to Comment 5 – Long and Seng X. Thao

COMMENT 6.1. This comment indicates that the AME is detrimental for Merced County due to the current state of the economy and number of foreclosures in the County.

RESPONSE 6.1. Refer to Response 5.2.

COMMENT 6.2. This comment states that the AME project would result in the loss of agricultural land and dairy farms that have benefited the community for several generations.

RESPONSE 6.2. Pages 4.2-14 through 4.2-16 of the Recirculated Draft EIR evaluate the potential agricultural impacts as a result of project construction and operation. Refer to response to Responses 5.1 and 5.6 for further discussion.

Pages 4.3-13 and 4.3-14 of the Recirculated Draft EIR discuss project impacts to dairy operations in the project area. Both Alternative 1A and Modified Alternative 1B would impact lands that are part of operating dairies. Table 4.3-10 of the Recirculated Draft EIR documents the AME project impacts to dairies. The calculated area of impacts to these dairies is considered a conservative estimate, as the final expressway right-of-way will be determined in the final design and right-of-way acquisition phases. During the final design and right-of-way phases, MCAG will endeavor to minimize adverse effects to dairy operations to the extent feasible. In the event of displacement, the dairy owners would be compensated for relocation and loss of business per California State Law, as discussed on pages 4.3-14 and 4.3-15 of the Recirculated Draft EIR.

COMMENT 6.3. This comment questions whether it would be possible for the AME to be modified to curve the expressway away from the Thao property.

RESPONSE 6.3. During the initial planning process for the AME project, a number of different alignments were considered. Alternative 1A and Modified Alternative 1B best met the purpose and need for the project and presented the least environmental impacts when compared to the other alternative alignments. During the final design and right-of-way acquisition phases of the AME project, efforts will be made to further refine the selected AME alignment to minimize adverse effects to homes and businesses to the extent feasible. This process would, however, be performed after the environmental certification process and selection of a preferred project alternative.

COMMENT 6.4. This comment questions if a sound wall could be placed on Gurr Road, so as to provide a noise buffer between the Thao property and Gurr Road.

RESPONSE 6.4. Section 4.6, Noise, of the Recirculated Draft EIR describes the existing noise conditions in the project study area and potential noise impacts arising from implementation of the AME project. A noise impact analysis was also prepared in June 2007 (amended in September 2007). As shown on Figure 4.6-8 of the Recirculated Draft EIR, the existing noise levels at this location (as identified by Receiver 74) are considered acceptable under city and county standards. However, noise conditions in year 2030 with implementation of the AME project would exceed such standards. To mitigate for such impacts, a soundwall (Soundwall SW 10), as shown in Figure 4.6-8, would be constructed to reduce traffic noise levels at this location. With construction of Soundwall SW 10, no additional soundwall would be required on Gurr Road to reduce noise levels at this location, as the noise levels would not exceed city or county noise standards.

COMMENT 6.5. This comment requests that MCAG consider expanding Black Rascal Creek and AME bridge to minimize flooding on the Thao property.

RESPONSE 6.5. As explained on page 4.9-11 of the Recirculated Draft EIR, the AME bridge over Black Rascal Creek would be built with a sufficient opening to allow the unimpeded passage of 100-year storm flows, thereby avoiding any new flooding problems in the Black Rascal Creek floodplain (in the area of North Gurr Road).

Comment 7

Harry Strawbridge
Owner, 5202 E. Broadway, Atwater, CA 95301
Phone: 209.358.8690
E-mail: harry51@sbcglobal.net

January 2, 2009

Comment on the Atwater-Merced Expressway Recirculated Draft Environmental Impact Report :

It is well understood that automobile sales businesses live and die by the amount of traffic, ease of access, and degree of visibility offered by their location. Four auto sales businesses located along Broadway Ave. will be negatively impacted in those respects by the Buhach Road realignment project.

Both of the remaining alternative plans for realignment of Buhach Road will result in a dead-end on Broadway Ave. just east of Buhach Road. Both plans also call for the elimination of the SR 99 entrance and exit ramps at Buhach Rd. The loss of through traffic on Broadway Ave., coupled with the loss of freeway access, will unquestionably destroy the viability of the four auto sales businesses now operating on Broadway between N. Station Ave. and Buhach Rd., as well as severely diminishing the value of the land they are located upon. 7.1

The proximity of these businesses to SR 99, and the timeline of the Buhach Rd. realignment relative to the probable timeline of the SR 99 widening project, renders any capital investment in the Broadway Ave. properties imprudent. Following the Buhach Rd. realignment, the likelihood of a successful land use change involving any significant capital investment at the Broadway Ave. properties is very small. This is because the SR 99 widening will likely follow the Buhach Rd. realignment by only a few years, effectively precluding the opportunity to earn a fair return on new investment before the state acquires the Broadway Ave. properties, or parts thereof, for the widening project. Therefore, any new interim use of the Broadway properties will have to be such that no new capital expenditures would be required. However, that is currently made impossible by unreasonable land use restrictions resulting from the City of Atwater/County of Merced Revenue Sharing Agreement. 7.2

The loss of traffic, freeway access, and the ability to use the properties profitably, all caused by the Buhach realignment, will seriously reduce the value of the real estate involved. When the appraisals are done to acquire land along Broadway Ave. for the widening of SR 99, they will come in at a much lower figure than would be the case if Broadway Ave. was not a dead-end street, and the existing freeway access was in place. As a result, the property owners will not be fairly compensated for their land unless they are bought out when the Buhach project begins, or all these factors are addressed when the properties are eventually acquired by the state. 7.3

No matter how well intentioned the local police may be, experience shows that dead-end roads do not receive the patrol frequency that thoroughfares do, thereby encouraging illegal and undesirable activities. Both realignment alternatives would increase the possibility that the Broadway Ave. area will become a high crime area, harboring individuals involved in illegal drugs, prostitution, gang activities, etc. This would result in serious quality of life losses to area residents, significant public safety issues, and further reduction of property values. 7.4

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MCAG

Recommendations for the fair treatment of the Broadway Ave. property owners:

Provide fair compensation for negative impact on their auto sales and other businesses. In several cases, these businesses have provided a livelihood for the owners and employees for decades. The impact of the Buhach Road realignment will be financially devastating to a number of people, and they all must be compensated fairly. 7.5

If the Broadway Ave. properties that will eventually be taken for the widening of SR 99 are not bought outright when work starts on the Buhach project, provide compensation for reduction of property value. For reasons discussed above, the Buhach Road realignment project will cause the real estate along Broadway Ave. to suffer a significant loss of value. Broadway Ave. property owners must be protected from having their property's value first reduced by the Buhach project, then having to accept an unreasonably low price for it later, when it is taken for the SR 99 widening project. It would clearly be nothing less than unconscionable to allow the property owners to be victimized by such a whipsaw. The reduction in the value attributable to the impacts of the Buhach project must be quantified, and the property owners must be compensated accordingly. If this is not done, the owners will eventually be cheated out of a large portion of the value of their property. 7.6

If the real estate now in use for auto sales is not bought outright when work begins on the Buhach Road realignment project, Broadway Ave. business owners will be faced with the need to find a profitable alternative to their current businesses. It is imperative to their success in this forced adjustment that the County of Merced and the City of Atwater change current policy so as to allow and quickly approve different uses in the impacted area that don't require expensive property redevelopment. Specifically, any land use listed for County zones C-1, C-2, or C-3 should be allowed on the impacted properties during the time interval between now and when SR 99 is widened. Policy should require approval by Administrative permit unless extremely compelling reasons to deny exist, require that the landowner's needs be considered paramount, and require that applications involving impacted properties be processed within 4 working days. City of Atwater review of use changes during the specified time interval should be waived. 7.7

At owner's option, purchase the properties outright at the time the Buhach Rd. project begins. One only need observe the widening of SR99 between Atwater and Livingston to understand what will happen to Broadway Ave. when SR99 is eventually widened in the Buhach area. That prospect already serves to make Caltrans the only likely buyer for any of the Broadway Ave. properties. An opportunity to sell early would allow the current owners to avoid being forced to keep properties with diminished value and a clouded future until Caltrans finally negotiates to acquire them for the eventual widening of SR 99. 7.8

To minimize the possibility that the Broadway Ave. area will become a high crime area as a consequence of the Buhach project, we suggest that Broadway Ave. be preserved as a thoroughfare by circling back to intersect with Buhach Rd. from the east side of the new overpass. Although such an intersection, in light of the proposed changes to Green Sands Road and others, would not restore sufficient traffic along Broadway Ave. to sustain the auto sales businesses, it would likely go a long way toward discouraging illegal and undesirable activities in the area that an isolated, dead-end road configuration would almost certainly bring. 7.9

Response to Comment 7 – Mr. Harry Strawbridge

COMMENT 7.1. This comment states that the automobile sales businesses located on Broadway Avenue will be negatively impacted in regards to the loss of traffic, lack of ease of access, and reduced visibility as a result of the realignment of Buhach Road as part of the AME project. The elimination of the Buhach Road on- and off-ramps to SR 99 and the creation of a dead-end street on Broadway Avenue would severely diminish the value of the automobile sales properties.

RESPONSE 7.1. The extension of Green Sands Avenue would continue to allow customers coming from the west to access to the automobile sales businesses located on Broadway Avenue. Construction and operation of the AME project would not directly impact the Broadway Avenue properties and would not require displacement of the businesses. Additionally, under CEQA Section 15131, economic and social impacts of a proposed project are not required to be evaluated unless they would lead to a physical environmental impact. The evaluation of social and economic impacts is, therefore, outside the scope of an EIR. While this Recirculated Draft EIR does not evaluate economic impacts related to these or any other properties, there may be a compensable taking of the property due to changes in access as a result of the AME project. These economic concerns will be evaluated during the final design and right-of-way acquisition process of the AME project. MCAG would coordinate with the property owners and any compensable taking of the properties on Broadway Avenue would be addressed pursuant to California State law. This process would be performed after the environmental certification process and selection of a preferred project alternative.

COMMENT 7.2. This comment indicates that the timeline of the Buhach Road realignment and the proposed widening of SR 99 would render any capital investment in the Broadway Avenue properties imprudent. The commenter suggests that any owner improvements to the Broadway properties would be impractical because the capital expenditure would not be justified due to the future changes in access and the widening of SR 99.

RESPONSE 7.2. Refer to Response 7.1.

COMMENT 7.3. This comment reiterates that the loss of traffic and freeway access as a result of the Buhach Road realignment as part of the AME project will reduce the value of the properties on Broadway Avenue. The comment indicates that the property owners will not be fairly compensated for their land unless the properties are purchased when the Buhach Road realignment begins.

RESPONSE 7.3. Refer to Response 7.1.

COMMENT 7.4. This comment states that the creation of a dead-end street on Broadway Avenue would encourage illegal criminal activity and a loss of quality of life for area residents due to public safety issues, as this roadway would no longer receive frequent police patrol.

RESPONSE 7.4. Under CEQA Section 15131, social impacts of a proposed project are not required to be evaluated unless they would lead to a physical environmental impact. The Recirculated Draft EIR (page 4.2-13) does address potential impacts associated with urban blight and found that these impacts would be less than significant. In general, urban blight is defined as the extended, deferred maintenance, and abandonment of property in an area, usually related to a downtown or economic/retail center. While converted to a cul-de-sac, the Broadway Avenue area is not in a downtown area and would not be abandoned. Access to Broadway Avenue and these properties would still be available via the extension of Green Sands Avenue. Therefore, it is not anticipated that the AME would result in significant physical impacts related to urban blight in this area.

Pages 4.14-9 through 4.14-11 evaluate the project impacts to emergency service providers, such as police. While the project would include changes to a number of local roadway access points that could affect how emergency service providers would travel to certain portions of the project area, mitigation has been incorporated to reduce such impacts to a less-than-significant level. As discussed in Mitigation Measure PS-2, the project sponsor shall provide all emergency service providers in Merced County and the cities of Atwater and Merced with detailed information about changes in local roadways. As such, impacts to police service access to the Broadway Avenue area would be less than significant.

COMMENT 7.5. This comment recommends that MCAG provide fair compensation for negative impacts to the automobile sales businesses as a result of project development.

RESPONSE 7.5. Refer to Response 7.1.

COMMENT 7.6. This comment recommends that the affected property owners on Broadway Avenue be compensated upon construction of the Buhach Road realignment as part of the AME, rather than having the property values diminished by the AME project and, thus, resulting in receiving an unreasonably low price for the property when it is acquired for the SR 99 widening project.

RESPONSE 7.6. Refer to Response 7.1.

The SR 99 widening project is a separate CEQA/NEPA project, conducted by a separate lead agency, Caltrans, and environmental review for this project is not complete. Because the SR 99 widening project is a separate project and is required to undergo a separate environmental review process, MCAG is not obligated to address or mitigate for economic or social impacts as a result of the SR 99 widening project. However, MCAG has considered the potential physical environmental impacts from the SR 99 widening project in combination with the AME project and other future regional transportation projects. This discussion is located in Chapter 5, Cumulative Impacts, of the Recirculated Draft EIR.

COMMENT 7.7. This comment suggests that the County of Merced and the City of Atwater change the current land use and zoning policies to allow and quickly approve different land uses in the affected area along Broadway Avenue, so as to avoid expensive property redevelopment.

RESPONSE 7.7. The AME project would not directly physically affect the Broadway Avenue properties. Additionally, the AME project would not require amendments to local land use and zoning designations in Merced County and the City of Atwater. Amendments to the County General Plan Land Use Map and Zoning Ordinance would be required to change the current land use and zoning policies for the Broadway Avenue area. This is not part of the AME project and would be a separate action taken by a separate lead agency in coordination with Merced County and the City of Atwater.

COMMENT 7.8. This comment suggests that, at the property owner's option, MCAG purchase the affected properties on Broadway at the beginning of the AME project, so as to avoid diminished property values and future negotiations with Caltrans during property acquisitions for the SR 99 widening project.

RESPONSE 7.8. Refer to Responses 7.1 and 7.6.

COMMENT 7.9. This comment suggests that Broadway Avenue be preserved as a thoroughfare by circling back to intersect with Buhach Road from the east side of the new overpass. The commenter suggests that while this modification would not restore sufficient traffic along Broadway Avenue to sustain the automobile sales business, it would discourage illegal criminal activity in the area.

RESPONSE 7.9. The replacement of the existing Buhach Road/SR 99 overpass and development of an interchange with a new overpass over both SR 99 and the UPRR railroad tracks serves an important part of the purpose and need of the AME project by reducing deficiencies and improving operational characteristics on SR 99. It is not considered feasible to build an extension of Broadway Avenue such that it could connect with Buhach Road at a standard intersection. The construction of a non-standard intersection could result in safety considerations related to vehicles meeting at non-perpendicular angles, poor visibility of vehicles crossing on the overpass, and localized congestion from non-standard intersection spacing.

Refer to Response 7.4 for a discussion regarding potential criminal activity in the Broadway Avenue area.

Gary Bacom
Owner, Bacom's Used Cars, 5138 E. Broadway, Atwater, CA 95301
Phone: 209-358-1942
E-mail:7garybacom@sbcglobal.net

January 2, 2009

Comment on the Atwater-Merced Expressway Recirculated Draft Environmental Impact Report :

It is well understood that automobile sales businesses live and die by the amount of traffic, ease of access, and degree of visibility offered by their location. Four auto sales businesses located along Broadway Ave. will be negatively impacted in those respects by the Buhach Road realignment project.

Both of the remaining alternative plans for realignment of Buhach Road will result in a dead-end on Broadway Ave. just east of Buhach Road. Both plans also call for the elimination of the SR 99 entrance and exit ramps at Buhach Rd. The loss of through traffic on Broadway Ave., coupled with the loss of freeway access, will unquestionably destroy the viability of the four auto sales businesses now operating on Broadway between N. Station Ave. and Buhach Rd., as well as severely diminishing the value of the land they are located upon. 8.1

The proximity of these businesses to SR 99, and the timeline of the Buhach Rd. realignment relative to the probable timeline of the SR 99 widening project, renders any capital investment in the Broadway Ave. properties imprudent. Following the Buhach Rd. realignment, the likelihood of a successful land use change involving any significant capital investment at the Broadway Ave. properties is very small. This is because the SR 99 widening will likely follow the Buhach Rd. realignment by only a few years, effectively precluding the opportunity to earn a fair return on new investment before the state acquires the Broadway Ave. properties, or parts thereof, for the widening project. Therefore, any new interim use of the Broadway properties will have to be such that no new capital expenditures would be required. However, that is currently made impossible by unreasonable land use restrictions resulting from the City of Atwater/County of Merced Revenue Sharing Agreement. 8.2

The loss of traffic, freeway access, and the ability to use the properties profitably, all caused by the Buhach realignment, will seriously reduce the value of the real estate involved. When the appraisals are done to acquire land along Broadway Ave. for the widening of SR 99, they will come in at a much lower figure than would be the case if Broadway Ave. was not a dead-end street, and the existing freeway access was in place. As a result, the property owners will not be fairly compensated for their land unless they are bought out when the Buhach project begins, or all these factors are addressed when the properties are eventually acquired by the state. 8.3

No matter how well intentioned the local police may be, experience shows that dead-end roads do not receive the patrol frequency that thoroughfares do, thereby encouraging illegal and undesirable activities. Both realignment alternatives would increase the possibility that the Broadway Ave. area will become a high crime area, harboring individuals involved in illegal drugs, prostitution, gang activities, etc. This would result in serious quality of life losses to area residents, significant public safety issues, and further reduction of property values. 8.4

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Recommendations for the fair treatment of the Broadway Ave. property owners:

Provide fair compensation for negative impact on their auto sales and other businesses. In several cases, these businesses have provided a livelihood for the owners and employees for decades. The impact of the Buhach Road realignment will be financially devastating to a number of people, and they all must be compensated fairly. 8.5

If the Broadway Ave. properties that will eventually be taken for the widening of SR 99 are not bought outright when work starts on the Buhach project, provide compensation for reduction of property value. For reasons discussed above, the Buhach Road realignment project will cause the real estate along Broadway Ave. to suffer a significant loss of value. Broadway Ave. property owners must be protected from having their property's value first reduced by the Buhach project, then having to accept an unreasonably low price for it later, when it is taken for the SR 99 widening project. It would clearly be nothing less than unconscionable to allow the property owners to be victimized by such a whipsaw. The reduction in the value attributable to the impacts of the Buhach project must be quantified, and the property owners must be compensated accordingly. If this is not done, the owners will eventually be cheated out of a large portion of the value of their property. 8.6

If the real estate now in use for auto sales is not bought outright when work begins on the Buhach Road realignment project, Broadway Ave. business owners will be faced with the need to find a profitable alternative to their current businesses. It is imperative to their success in this forced adjustment that the County of Merced and the City of Atwater change current policy so as to allow and quickly approve different uses in the impacted area that don't require expensive property redevelopment. Specifically, any land use listed for County zones C-1, C-2, or C-3 should be allowed on the impacted properties during the time interval between now and when SR 99 is widened. Policy should require approval by Administrative permit unless extremely compelling reasons to deny exist, require that the landowner's needs be considered paramount, and require that applications involving impacted properties be processed within 4 working days. City of Atwater review of use changes during the specified time interval should be waived. 8.7

At owner's option, purchase the properties outright at the time the Buhach Rd. project begins. One only need observe the widening of SR99 between Atwater and Livingston to understand what will happen to Broadway Ave. when SR99 is eventually widened in the Buhach area. That prospect already serves to make Caltrans the only likely buyer for any of the Broadway Ave. properties. An opportunity to sell early would allow the current owners to avoid being forced to keep properties with diminished value and a clouded future until Caltrans finally negotiates to acquire them for the eventual widening of SR 99. 8.8

To minimize the possibility that the Broadway Ave. area will become a high crime area as a consequence of the Buhach project, we suggest that Broadway Ave. be preserved as a thoroughfare by circling back to intersect with Buhach Rd. from the east side of the new overpass. Although such an intersection, in light of the proposed changes to Green Sands Road and others, would not restore sufficient traffic along Broadway Ave. to sustain the auto sales businesses, it would likely go a long way toward discouraging illegal and undesirable activities in the area that an isolated, dead-end road configuration would almost certainly bring. 8.9

Response to Comment 8 – Mr. Gary Bacom, Bacom's Used Cars

The comment letter submitted by Mr. Bacom is identical to the comment letter submitted by Mr. Strawbridge (Comment Letter 7). As a result, all of the comments contained in this letter are responded to under the Response to Comment 7.

COMMENT 8.1. Refer to Response 7.1.

COMMENT 8.2. Refer to Response 7.1.

COMMENT 8.3. Refer to Response 7.1.

COMMENT 8.4. Refer to Responses 7.1 and 7.4.

COMMENT 8.5. Refer to Response 7.1.

COMMENT 8.6. Refer to Responses 7.1 and 7.6.

COMMENT 8.7. Refer to Response 7.7.

COMMENT 8.8. Refer to Responses 7.1 and 7.6.

COMMENT 8.9. Refer to Responses 7.1 and 7.9.

Comment 9

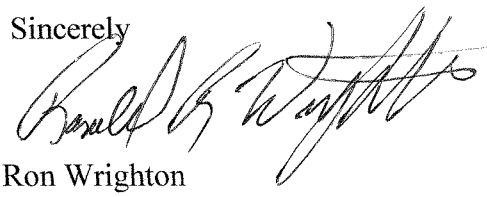
Ron Wrighton
Owner 5090 E. Broadway, Atwater, Cal, 95301

Jan-5-2009

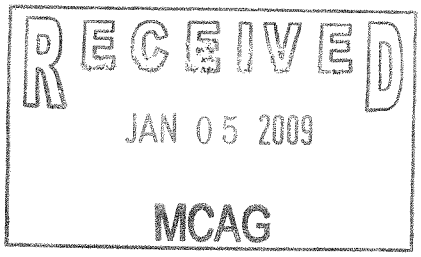
After one of the worst years ever in the stock market and my retirement account cut more than in half forcing me to postpone my retirement , I now find out the diversion of East Broadway to make the Buhach overpass will cut off all traffic. My entire busness is dependent on traffic and with no off ramp from SR 99 and E. Broadway becoming a dead end street I will be the owner of a piece of worthless property. 9.1

I would be interested to know if anyone has any ideas of how I will be able to make a living once this happens. I am 62 years old and this is my only source of making a living.

Sincerely



Ron Wrighton
Owner, Rons Auto Sales



Response to Comment 9 – Mr. Ron Wrighton, Rons Auto Sales

COMMENT 9.1. This comment indicates that the realignment of Buhach Road will reduce the value of the commenter's property due to the reduction in through traffic as a result of making Broadway Avenue a dead-end street and removing the Buhach Road off-ramp from SR 99.

RESPONSE 9.1. This comment is similar to the comment submitted by Mr. Strawbridge (Comment 7). Refer to Response 7.1.

Comment 10

Stephanie M. Goulet - Yosemite Auto Sales
5150 E. Broadway
Atwater, Ca 95301
209-617-5926

Summary of negative effects of the Buhach Rd. Realignment project on Broadway Ave. property owners:

A. Businesses destroyed due to a. and b. below. 10.1

B. Land value severely reduced because of: 10.2
- a. Loss of through traffic.
- b. Loss of freeway access.
- c. No long term potential due to 99 widening eventuality.
- d. Likelihood of dramatically increased crime in the area.

C. Alternative business options unfairly limited by Atwater/Merced County Revenue Sharing Agreement. 10.3

D. Probable loss of ability to sell property to anyone but Caltrans at any price.
Probable loss of ability to sell property until Caltrans is ready to acquire it to widen SR99. 10.4

E. Isolated, dead-end area brings high crime rate, causing diminished quality of life for residents, public health and safety issues, and reduction in property value. 10.5

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Response to Comment 10 – Ms. Stephanie M. Goulef, Yosemite Auto Sales

The comments in this letter are similar to the comment submitted by Mr. Strawbridge (Comment 7) and as such, the responses below refer back to Comment letter 7.

COMMENT 10.1. This comment indicates that the realignment of Buhach Road, as a part of the AME project, would destroy the businesses on Broadway Avenue due to the loss of through traffic and the loss of freeway access to SR 99.

RESPONSE 10.1. Refer to Response 7.1.

COMMENT 10.2. This comment reiterates that the value of the land on Broadway Avenue will be severely reduced due to the Buhach Road realignment as part of the AME project as a result of the loss of through traffic, the loss of freeway access to SR 99, the lack of long-term potential for the properties due to the eventual SR 99 widening, and the likelihood of increased crime in the area.

RESPONSE 10.2. Refer to Responses 7.1, 7.4, and 7.6.

COMMENT 10.3. This comment states that the Buhach Road realignment as part of the AME project has a negative effect on the Broadway Avenue property owners, as alternative business options are limited by the City of Atwater and Merced County Revenue Sharing Agreement.

RESPONSE 10.3. Refer to Response 7.1.

The City of Atwater and Merced County Revenue Sharing Agreement does not relate to the AME project. The comment is noted and no further response is required.

COMMENT 10.4. This comment notes that the Buhach Road realignment as part of the AME project has a negative effect on the Broadway Avenue property owners, as these property owners will experience a loss of ability to sell their property until Caltrans is ready to acquire the area for the proposed SR 99 widening.

RESPONSE 10.4. Refer to Responses 7.1 and 7.6.

COMMENT 10.5. This comment indicates that the realignment of Buhach Road as part of the AME project will result in an isolated, dead-end area on Broadway Avenue, resulting in high crime rates, diminished quality of life for residents, public health and safety issues, and a reduction in property value.

RESPONSE 10.5. Refer to Responses 7.1 and 7.4.

Comment 11

MCAG
MERCED COUNTY ASSOCIATION OF GOVERNMENTS

Comment Sheet for the Atwater-Merced Expressway Draft Environmental Impact Report

Written comments can be submitted at the public hearing or mailed to the Merced County Association of Governments (mailing address is on the back of this card), faxed **209-723-0322**, or e-mailed to **AMEcomments@mcagov.org** by close of business ~~**Friday, May 2nd, 2008**~~. MON JAN 5-2009

Please print clearly.

Name: GLEN & DARLENE PETERS

Organization and Address: 4450 N SANTA FE DR
MLG ADDR: 3144 N G ST. #125-321
MERCED CA 95340

Phone ~~209~~ 383-0229 FAX ~~209~~ 723-8646

E-mail: DARBAR30@AOL.COM

ALL COMMENTS BECOME PART OF THE PUBLIC RECORD.

Date: JAN 2 2009

Comment:

11.1 WE OWN THE PROPERTY AT 4450 N SANTA FE DR AND WE FEEL OUR HOME IS A HISTORICLE SITE. THIS HAS BEEN OUR HOMESTEAD SINCE 1949. MY FATHER CHARLES SEXAUER BUILT THE HOME IN 1949 BY USING SOME OF THE WOOD FROM THE BARN THAT HAS BEEN ON THE PROPERTY SINCE THE EARLY 1900's. PART OF THE BARN IS STILL STANDING TODAY. WHEN I ATTENDED THE FIRST MEETING SHOWING THE MAPS OF THE LOCATION OF THE ATWATER EXPRESSWAY AND REALIZED THAT THE ROAD WOULD GO RIGHT THROUGH OUR HOME I COULDN'T HOLD THE TEARS BACK IT WAS LIKE A PART OF ME WAS BEING DESTROYED. I STILL

11.2 DON'T UNDERSTAND WHY THE EXPRESSWAY COULDN'T GO THRU THE COUNTY PROPERTY TO THE NORTH OF OUR PROPERTY WHICH WAS CASTLE AFB. THAT LAND HAS BEEN VACANT FOR OVER 60 YEARS OR LONGER AND YET YOU FEEL THE NEED TO MOVE THE EXPRESSWAY ONTO OUR PROPERTY WHICH TOTALLY ELIMINATES OUR HOME AND LEAVES JUST A SMALL PORTION OF LAND THAT WILL BE USELESS. I AGAIN ASK THE MCAG BOARD AND OUR CO. SUPERVISORS TO CONSIDER MY REQUEST SO WE WILL BE ABLE TO KEEP OUR HOMESTEAD

Response to Comment 11 – Mr. Glen and Ms. Darlene Peters

COMMENT 11.1. This comment suggests that the property at 4450 N. Santa Fe Drive is a historic site and would be affected by the AME project.

RESPONSE 11.2. Section 4.12, Paleontological and Cultural Resources, of the Recirculated Draft EIR discusses the paleontological, archeological, and historical resources in and proximal to the AME project area. Survey data for historical resources were obtained from the Central California Information Center (CCIC). Field surveys of historic resources were conducted in July 2005 and between December 2006 and February 2007 to account for the Historic Era buildings, structures, and objects that could be considered historical resources. As noted on pages 4.12-6 and 4.12-7 of the Recirculated Draft EIR, one resource, the Buhach Catholic Church, was identified as a historically significant architectural resource. No other resources met the criteria for listing in the California Register of Historic Resources and are therefore not considered historical resources for the purpose of CEQA.

In the technical report found in the appendices (Historical Resources Inventory and Evaluation Report) the property at 4450 N. Santa Fe Drive was considered for historic building eligibility. The report found that this property had little or no historic integrity, and requires no further study, because there have been substantial alterations to the building, including building addition and modern windows. Therefore, this property does not meet the eligibility criteria of the California Register of Historical Resources and would no be considered a historic property and no change to the Recirculated Draft EIR is required.

COMMENT 11.2. This comment requests that the AME alignment be located to the north within the Castle Airforce Base property to avoid any impacts to the 4450 N. Santa Fe Drive property.

RESPONSE 11.2. Refer to Response 6.3.

Comment 12

MARSHA A. BURCH
ATTORNEY AT LAW

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GRASS VALLEY, CA 95945

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Facsimile:
(530) 272-9411

maburch@onemain.com

January 5, 2009

Via Electronic Mail

Jesse Brown, Executive Director
Atwater-Merced Expressway Project EIR
Merced County Association of Governments
369 18th Street
Merced, CA 95340
AMEcomments@mcagov.org

Re: Recirculated Draft Environmental Impact Report
Atwater-Merced Expressway Project
State Clearinghouse Number 2006081138

Dear Mr. Brown:

This office, in conjunction with the Law Office of Donald B. Mooney, represents the San Joaquin Raptor Rescue Center and Protect Our Water with respect to the above-referenced proposal for the Atwater-Merced Expressway Project ("AME" or "Project"). We appreciate the opportunity to provide the following comments on the recirculated Draft EIR.

The Draft EIR for the proposed Project does not comply with the California Environmental Quality Act ("CEQA") (Public Resources Code § 2100 et seq.) in certain essential respects, as set forth in detail below.

I. The Designation of the AME as an "Expressway" has not been the Subject of CEQA Review

12.1

As an initial matter, the designation of the AME as an "expressway" results in a certain legal status. It is our understanding that the designation has

not been the subject of an amendment to General Plan that will apply County-wide, and so the discretionary approval designating a specific expressway alignment puts the cart before the horse. Without environmental review that we are aware of for the County-wide expressway standard, nor review of the various expressway alignments under consideration by the County in conjunction with the proposed Project, the environmental review of the Project is incomplete, and illegally precedes the evaluation of the potential impacts associated with the adoption of a County-wide expressway standard. Further, to the extent other expressway projects are being considered by any local agencies, the various projects must be considered in conjunction with the AME. To consider various expressway proposals serially would violate CEQA's prohibition against piecemealing a project by breaking it into smaller segments. 12.1 Cont.

Because of the fact that there has been no amendment to the General Plan providing for an expressway designation, the proposal must be rejected. The impacts associated with the designation must be evaluated before individual projects receive the designation in order to adequately take into account the consequence of the designation's cumulative impacts to traffic, air and water quality, public health and safety, agricultural lands and particularly impacts to biological resources and wildlife corridors.

II. The Draft EIR Fails to Adequately Evaluate the Project's Direct and Indirect Impacts

As set forth in detail in the comment letter submitted by our clients, San Joaquin Raptor Rescue Center and Protect Our Water, certain areas of impact are not adequately reviewed in the Draft EIR. Specifically, baseline assumptions regarding housing and population are outdated and do not support the conclusions in the Draft EIR, and drought conditions in California have resulted in incomplete information regarding listed species in the Project area. 12.2 12.3

Further, the Draft EIR relies upon previous environmental documents, the County General Plan and various regional transportation plans, all of which fail to reflect current conditions and cannot support the conclusions in the Draft EIR. 12.4

Accordingly, the Draft EIR should be revised to reflect current conditions and include accurate baseline information and impacts analyses. 12.5

III. The Draft EIR Fails to Evaluate Global Warming

The Draft EIR fails to discuss Project's potentially significant contribution to global warming. The Draft EIR must take global warming into account in two ways: (1) global warming is occurring, and will continue to occur, and the environmental effects of global warming are therefore part of the existing environment in which the proposed project would be built; and (2) the proposed project will result in the emission of greenhouse gasses ("GHG") that, 12.6

cumulatively, along with GHGs from other sources, will continue to contribute to global warming and climate change.

The Draft EIR simply ignores the issue of global warming. This does not meet the requirements of CEQA or AB 32. The Draft EIR does *not* address the baseline level of GHG emissions and the cumulative impacts the Project will have, and the lead agency has failed to make a meaningful attempt to analyze the Project's impacts on GHG or global warming. "If, *after a thorough investigation,* a lead agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact." (*Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344, 1370-1371 [emphasis in original]; and CEQA Guidelines § 15145.) 12.6 Cont.

The California Legislature and the Governor have recognized that GHG will have an impact on the State. AB 32, adopted in 2006 (Health and Safety Code § 38500 *et seq.*), limits GHG emissions, and SB 97, adopted in 2007 (Public Resources Code § 21083.05), directs the Office of Planning and Research to prepare guidelines for mitigating GHG emissions. A copy of the June 19, 2008, Governor's Office of Planning and Research Technical Advisory entitled "CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review" is included with this letter.

The Ninth Circuit, applying federal law, found that the cumulative impact of GHG is "precisely the kind of cumulative impact analysis that NEPA requires agencies to conduct." (*Center for Biological Diversity v. National Highway Traffic Safety Administration* (9th Cir. 2008) 538 F.3d 1172, 1217.)[1]

By completely failing to include *any* analysis of the project's direct contribution of GHG emissions and indirect contribution to global warming in its environmental review, the Draft EIR has failed "to demonstrate to an apprehensive citizenry that the [agency] has analyzed and considered the ecological implications of its actions." (*No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 86.) 12.7

The EIR violates CEQA by failing to consider global warming as a baseline environmental condition.

Because of the issues raised above, we believe that the Draft EIR fails to meet the requirements of the California Environmental Quality Act. For these 12.8

[1] California courts have often relied on NEPA precedents when construing CEQA provisions. (See *No Oil Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 80; and *Friends of Mammoth v. Board of Supervisors* (1972) 8 Cal.3d 247, 261.) NEPA cases continue to play an important role in CEQA cases, especially when a concept developed in NEPA decisions has not yet been applied in CEQA cases. (See, e.g., *Bowman v. City of Berkeley* (2004) 122 Cal.App.4th 572, 591.)

reasons, we believe the proposal should be withdrawn and appropriate environmental review completed prior to further consideration. 12.8 Cont.

Sincerely,

Marsha A. Burch
Attorney

cc: San Joaquin Raptor Rescue Center
Protect Our Water
Donald B. Mooney, Esq.

Response to Comment 12 – Ms. Marsha A. Burch

Ms. Marsha A. Burch submitted a number of attachments with the comment letter. The attachments can be found in Appendix C.

COMMENT 12.1. This comment indicates that the designation of the AME as an "expressway" has not been the subject of CEQA review. The comment states that this designation has not been the subject of an amendment to the Merced County General Plan and that the environmental review of the AME project is incomplete and illegally precedes the evaluation of the potential impacts associated with the adoption of a countywide expressway standard. To consider various expressway proposals without an expressway standard would violate CEQA prohibition against piecemealing a project by breaking it into smaller segments.

RESPONSE 12.1. Refer to Response 5.9 for a discussion of the use of the term "expressway." This project has independent purpose and need, unrelated to other projects in the area, and is therefore being independently evaluated, although other projects are considered in the analyses of cumulative, traffic, air quality, and noise impacts. As it is an independent project, no piecemealing would occur.

COMMENT 12.2. This comment states that the baseline assumptions regarding the housing and population in the Draft EIR are outdated and do not support the conclusions in the Draft EIR.

RESPONSE 12.2. Refer to Response 5.2.

COMMENT 12.3. This comment indicates that the drought conditions in California have resulted in incomplete information regarding listed species in the AME project area.

RESPONSE 12.3. Refer to Response 5.5.

COMMENT 12.4. This comment states that the Draft EIR relies upon previous environmental documents, the Merced County General Plan, and various regional transportation plans which do not adequately reflect the current conditions in the area and cannot support the conclusions of the Draft EIR.

RESPONSE 12.4. Refer to Responses 5.1, 5.2, and 5.7.

COMMENT 12.5. This comment recommends that the Draft EIR be revised to reflect current conditions and include accurate baseline information and impact analyses.

RESPONSE 12.5. Refer to Responses 5.1, 5.2, and 5.7.

COMMENT 12.6. This comment indicates that the Draft EIR failed to discuss the AME project's potentially significant contribution to global climate change. The comment suggests that the Draft EIR analyze global climate change in regards to the environmental effects of global warming in which the proposed AME project would be built and in regards to the project-related greenhouse gas emissions that, cumulatively, along with greenhouse gases from other sources, would continue to contribute to global climate change.

RESPONSE 12.6. The Recirculated Draft EIR includes a discussion of global climate change. Section 5.15, Other Cumulative Effects, reflects the most recent legislation related to global climate change and provides a quantitative analysis of greenhouse gas emissions. Within this section the project's contribution of global climate change is addressed.

At the commencement of the AME project, there were no standards, regulations, or guiding measures regarding greenhouse gas (GHG) emissions reductions and global climate change.

The GHG emissions and global climate change analysis for the AME project is based on the best information available at the time of the preparation of the Recirculated Draft EIR. Consistent with the most current OPR Guidance on Climate Change, developed in June 2008, the GHG emissions impact analysis for the AME project evaluates the estimated carbon dioxide emissions related to vehicle miles traveled (VMT). As noted on page 5-11 of the Recirculated Draft EIR, with operation of the AME project in year 2030, regional VMT and carbon dioxide emissions would decrease slightly when compared to the 2030 No-Build scenario. As such, the Recirculated Draft EIR documents that the project's contribution to global climate change would be a slight reduction in VMT, compared to the no project scenario.

The State of California continues to take the leadership role in developing and revising the GHG emissions and climate change guidance. Senate Bill 375 (SB 375) was signed into law on September 29, 2008, which requires metropolitan planning organizations (such as MCAG) to incorporate a "Sustainable Communities Strategy" into their next Regional Transportation Plan, in coordination with the California Air Resources Board, beginning in 2011. Efforts to meet the requirements of SB 375 are underway and are complimented by the San Joaquin Valley Regional Blueprint Program, in which MCAG is participating. As this process continues to evolve, MCAG will consider the AME project's role in meeting SB 375 requirements.

COMMENT 12.7. This comment reiterates that the Draft EIR did not include an analysis of the project's direct contribution to greenhouse gas emissions and indirect contribution to global climate change and, therefore, violates CEQA by failing to consider global warming as a baseline environmental condition.

RESPONSE 12.7. Refer to Response 12.6.

COMMENT 12.8. This comment states that the Draft EIR fails to meet the requirements of CEQA and that the appropriate environmental review be completed prior to further consideration of the project.

RESPONSE 12.8. The Recirculated Draft EIR adheres to the requirements identified in the *CEQA Guidelines* (2008). The Recirculated Draft EIR evaluates the potential environmental impacts of the construction and operation of the AME project, per Article 9, Section 15120 of the *CEQA Guidelines*. MCAG performed the proper public noticing of the Recirculated Draft EIR, per CEQA Section 15087. (Refer to response to Oral Comment 15.19 for a discussion of public noticing.) Consistent with CEQA requirements, this Final EIR is being prepared in response to comments on the Recirculated Draft EIR. Beyond CEQA requirements, but for the benefit of any reviewers or prior commenters of the documents, this Final EIR includes responses to comments submitted on the August 2008 Final EIR (published but not certified) and the March 2008 Draft EIR.

Comment 13

Maureen McCorry, Director
San Joaquin Et Al
P.o. Box 722
Merced, CA 95341
sanjoaquinetal@sbcglobal.net

January 5, 2009

Merced County Association of Governments
Attn: Mr. Jess Brown, Executive Director
369 West 18th Street
Merced, California 95340
jesse.brown@mcagov.org
AMEcomments@mcagov.org

Re: Recirculation of the Atwater-Merced Expressway Draft Environmental Impact Report; State Clearinghouse Number 2006081138/ Via: E-mail, 1.05.09

Dear Mr. Brown,

We are resubmitting comments that were made in response to the first Draft EIR that was circulated for this project (May, 2008). Please note that we continue to view these issues as relevant to the current, re-circulated document for the Atwater-Merced Expressway. In addition, we are attaching our critique of the Regional Housing Needs Allocation Plan which we submitted at a public hearing and were promptly ignored (August, 2008). We believe that the population estimates driving current residential development and the corresponding infrastructure are seriously flawed.

We ask that you include our comments and specifically address the points listed below in the Final EIR. Again, we do not view previous responses to our concerns as adequate or complete.

We are writing to object to the Atwater Merced Expressway and do not view Alternatives 1A or 1B as acceptable for the following reasons:

1. Lack of coordination with the Merced County General Plan. Merced and Atwater City General Plans, and the Community plans in unicorporated Merced County:

The AME will primarily impact lands in Merced County. Merced County is currently in the process of updating its general plan. 13.1

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This project will fundamentally shape future growth and therefore should not be considered as a separate special project that is amended to the General Plan. 13.2

Both alternatives direct growth in a specific direction – without any coordination with local general plans and in the case of agriculture, in violation of the stated goals to preserving agriculture. Contrary to the report's conclusions, we believe that this expressway will contribute to urban blight in that it serves yet to be developed regions to the North of Merced and adjacent to the University of California. 13.3

2. Impact to Agriculture and Natural Resources:

a. Agriculture:

As indicated in the introduction to the Section on Land Use and Agriculture: "Most of the land within the project study area is used for agriculture …"

The impacts to Agriculture contradict the very clearly stated goals of the Merced County General Plan – Goal #7. Yet there is no evidence offered to support the statement [that]: "the project is consistent with the relevant policy under this goal that allows for the conversion of agricultural land *when conversion is* justified *and encourages conversion to occur with minimal impacts to valuable farmland."* 13.4

In addition, there is no analysis regarding why this particular project [whether in this section or in the section referenced (4.2)] is justified – especially when this is offered as project independent of the Merced City General Plan, the Atwater General Plan, the Merced County General Plan, and the Community Plans. 13.5

b. Agricultural Mitigation:

There is no written County or city policy within the jurisdictions for this project to mitigate for the permanent loss of agricultural land – whether the direct loss referred to in Table 4.2-3 or those associated with the long term growth inducing impacts of this project. We also do not agree that the indirect impacts associated to this project are of a temporary nature. Mitigation measures are referenced in the Cumulative Impacts section (5-4) under the Land Use and Agriculture category; however, none were discussed in Section 4.2. Moreover, there is no County wide mitigation policy that would ensure that the loss of agricultural lands would be truly mitigated. 13.6

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An in-lieu fees for mitigation anticipated for this project would not be sufficient to capture the loss to agricultural lands. 13.7

c. The Williamson Act:

The only analysis regarding the Williamson Act are on lands that are currently under contract in the project area (5 parcels are noted on page 4.2-18). Moreover, the EIR ignores the consequence of taking land out of the Williamson Act -- namely the tax benefits accrued to land previously contracted will be extinguished – increasing the likelihood that this land will be converted to non-agricultural uses. Finally, the EIR fails to analyze the impact to the agricultural preserve. 13.8 13.9

d. Natural Resources:

There is only a superficial and cursory analysis of impacts to threatened or endangered species and habitat in the area. Mitigation measures do not address the long term impacts to these species once the project is complete and new growth is directed in this direction. 13.10

3. Growth Inducing Impacts:

The population and projection data that this EIR relies do not accurately reflect the current context. The population growth cited is based on a speculative marker that predated the current housing surplus. These figures are no longer appropriate. Moreover, we do not agree with the conclusion that: "… the AME project in combination with other projects listed in Table 5-1 would not directly result in cumulative population and housing impacts." On the contrary, this will direct future growth by virtue of its existence. 13.11

Alternatives 1A and 1B will pass through just over 360 acres of agricultural lands. As stated in the EIR, acreage that would be divided into properties below the 20 acre minimum required by the General Plan, "would need to be rezoned, most likely as Agricultural Residential." While this rezoning does not prohibit agricultural, this further division of agriculture land would have the permanent impact of further converting agricultural lands to ranchettes under an A-R rezone—further contributing to the urbanization of ag land. 13.12

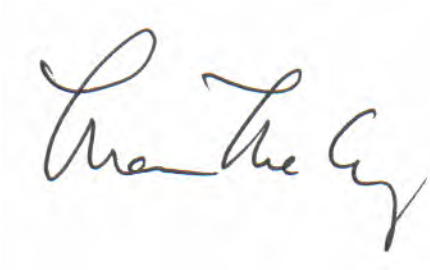
We do not view the Regional Transportation Plan as a substitute for the Merced County General Plan. Nor do we view this as a plan that explains away the growth inducing impacts associated to this project. 13.13

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4. Hydrology and Water Quality:

As noted in figure 4.9, Alternatives 1A and 1B encompass a floodplain. In addition, this project would convert 90 acres of pervious surface to impervious surface. This does not include the land that will be disrupted to create the AME, nor does it include the land that will be converted to urban uses as a result of its creation. The impacts to drainage/flooding, storm water run-off, groundwater recharge, and the potential contamination to groundwater associated with this project are significant and not comprehensively addressed in this EIR. 13.14

Sincerely,



Maureen McCorry, Director
San Joaquin Et Al
P.O. Box 722
Merced, CA 95341

Attachment: August 21, 2008 letter to the MCAG Board regarding the Merced County Regional Needs Housing Plan

cc: Interested Parties

Maureen McCorry, Director
San Joaquin Et Al
P.O. Box 722
Merced, CA 95341
Sanjoaquinetal@um.att.com
(415) 816-8872

August 21, 2008

Merced County Association of Governments Governing Board
Merced County Association of Governments
369 W. 18th Street
Merced, CA 95340

RE: Our opposition to the draft Merced County Regional Housing Needs Allocation Plan **Via: Hand delivered, August 21, 2008**

Members of the Board,

The noticing process and lack of availability of information critical to understanding this report violates the Brown Act.

> California Government Code
>
> 54957.5. (a) Notwithstanding Section 6255 or any other provisions of law, agendas of public meetings and any other writings, when distributed to all, or a majority of all, of the members of a legislative body of a local agency by any person in connection with a matter subject to discussion or consideration at an open meeting of the body, are disclosable public records under the California Public Records Act (Chapter 3.5 (commencing with Section 6250) of Division 7 of Title 1), and shall be made available upon request without delay. However, this section shall not include any writing exempt from public disclosure under Section 6253.5, 6254, 6254.3, 6254.7, 6254.15, 6254.16, or 6254.22.
> (b) (1) If a writing that is a public record under subdivision (a), and that relates to an agenda item for an open session of a regular meeting of the legislative body of a local agency, is distributed less than 72 hours prior to that meeting, the writing shall be made available for public inspection pursuant to paragraph (2) at the time the writing is distributed to all, or a majority of all, of the members of the body.
> (2) A local agency shall make any writing described in paragraph (1) available for public inspection at a public office or location

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> that the agency shall designate for this purpose. Each local agency shall list the address of this office or location on the agendas for all meetings of the legislative body of that agency. The local agency also may post the writing on the local agency's Internet Web site in a position and manner that makes it clear that the writing relates to an agenda item for an upcoming meeting.

MCAG did not make the board packets available, therefore the public hearing on this matter must be continued.

Furthermore, we request that you file an extension from the Department of Housing and Community Development for the August 31, 2008 deadline, fundamentally revamp the assumptions and methodology used to create this report, and re-circulate a final draft that recognizes the very real housing and foreclosure crisis that is destroying our community (or continues to devastate our community).

We have carefully reviewed the draft and find it unacceptable for the following reasons:

1) The draft indicates that there was a 60- day comment period for the methodology used for this report (March 6 – May 6, 2008). We consistently monitor the local paper and share information with a network of local groups and citizens who also carefully and consistently monitor public notices, yet we had no knowledge of this comment period until we read about it in this report. If this was in fact noticed, it was insufficient.

2) It is clear that the methodology underpinning this document is of critical importance. We hope that this board does not need to be reminded of our national and international distinction as the location of one of the top three foreclosure rates in the nation. At last year's Building Industry of America (BIA) conference in Modesto, economists representing building interests estimated that at last year's inventory levels – it would take twenty years to fully absorb our current surplus in our county.

   The most pressing need in our county is to figure out how to absorb the current and ever expanding housing surplus caused by the same unrealistic population statistics in which this report is reliant. Any methodology should have factored in our present reality. Yet, based on the housing "needs" reflected in this report, there is no indication that our present housing surplus and the ongoing foreclosure crisis

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(which will no doubt increase our surplus) was considered in creating this document.

We are also troubled by the report's reliance on population estimates developed by the California Department of Finance. Their numbers are widely recognized as biased in favor of development. Merced County and the San Joaquin Valley are already at capacity for clean air, water, agriculture and natural resources. It isn't clear that we can sustain our current population, let alone, future growth. The assumptions behind this report, whether dictated by a potential funding source or not, do not apply to Merced at the moment and do not respond to Merced's real needs.

3) In the report before you today, the largest share of our projected housing need is projected for the "*above moderat*e" category (effectively ignoring the implications of the double digit unemployment rate cited within this report). Even when one considers these categories are percentages of median income – the report's conclusion defy common sense. Meanwhile, MCEDCO and other agencies are exploiting the poverty of Merced County in their applications for funds from other branches of government. Again, we urge you to send this document back to staff and file an extension. Local leadership cannot create meaningful policy for Merced by blindly following bureaucratic benchmarks. This is the antithesis of *speaking with One Voice.*

Thank you for your thoughtful consideration of our comments.

Sincerely,

Maureen McCorry
San Joaquin Et Al
P.O. Box 722
Merced, CA 95341

cc: Interested parties

Response to Comment 13 – Ms. Maureen McCorry

COMMENT 13.1. This comment states that the AME will primarily impact lands in Merced County and notes that Merced County is currently in the process of updating its General Plan.

RESPONSE 13.1. This comment is noted. No further response is required.

COMMENT 13.2. This comment states that the AME project will fundamentally shape future growth in the area and should not be considered as a separate project that would be amended to the General Plan.

RESPONSE 13.2. See Response 5.4 for a discussion of growth inducement.

As MCAG is the lead agency for the AME project, MCAG has the responsibility of evaluating the environmental impact of the AME project and project approval. Once the environmental document is certified and if the AME project is approved, the cities and county affected by the project will have the opportunity to evaluate the AME project and the environmental document to determine whether to include the AME project in their General Plan updates. As an example, the Campus Parkway project was not part of the Merced County General Plan but was later added after need for the project was determined in the MCAG Regional Transportation Model. The Campus Parkway project was amended to the Merced County General Plan after the environmental document was certified, similar to the process anticipated for the AME project.

COMMENT 13.3. This comment notes that Alternatives 1A and 1B direct growth in a specific direction, without any coordination with local General Plans and in violation of the stated goals of preserving agricultural lands. The comments states that the AME project would contribute to urban blight, as it serves undeveloped areas to the north of Merced.

RESPONSE 13.3. Refer to Response 13.2 for a discussion of coordination with local General Plans.

Refer to Responses 5.1 and 5.6 for a discussion of the preservation of agricultural land.

Page 4.2-13 of the Recirculated Draft EIR documents that the AME project would not cause urban blight, as the AME project would not directly develop any commercial or retail development and the majority of land uses in the vicinity of the project area would remain zoned for agricultural uses. Urban blight could occur in the City of Merced as a result of traffic being shifted away from SR 59 and SR 140. However, the traffic analysis in Section 4.5, Traffic and Circulation, shows that there will still be substantial traffic on SR 59 and SR 140, even with implementation of the AME project to support local businesses that rely on roadway traffic for their business. Therefore, the Recirculated Draft EIR adequately addresses these issues and no changes are required.

COMMENT 13.4. This comment indicates that the agricultural impacts identified in the EIR contradict the goals of the Merced County General Plan, specifically Goal 7.

RESPONSE 13.4. Page 4.1-4 of the Recirculated Draft EIR provides a project consistency analysis with the Merced County General Plan, Land Use Element, Goal 7. While the project would result in the conversion of Prime and Important Farmland, the amount of farmland converted as a result of the project would represent only 0.05 percent of the total farmland in the region. Refer to response to Responses 5.1 and 5.6 for further discussion of the agricultural impacts associated with the AME project.

COMMENT 13.5. This comment states that the EIR does not provide an analysis of the justification for the AME project, particularly as it is a project independent of the Merced County General Plan, the Atwater General Plan, and the Community Plans.

RESPONSE 13.5. Page 3-4 of the Recirculated Draft EIR clearly identifies the justification and objectives for the AME project. The objectives of the AME project are to provide additional north/south roadway capacity to accommodate existing, approved, and planned development, improve access to the Castle Airport Development Center and the United States Penitentiary - Atwater, create an alternate route for the existing SR 59 to accommodate regional travel demand, and to reduce deficiencies and improve operational characteristics on SR 99 by closing the Buhach Road interchange.

Refer to Response 13.2 for a discussion of coordination with General Plans.

COMMENT 13.6. This comment notes that there are no written county or city policies within the jurisdictions of the AME project to mitigate for the permanent loss of agricultural land. The comment also expresses disagreement with the temporary nature of the indirect agricultural and growth impacts of the project. The comment states that Section 4.2 of the Draft EIR does not include mitigation measures for impacts to agricultural lands.

RESPONSE 13.6. Refer to Responses 5.1, 5.4, and 5.6.

COMMENT 13.7. This comment states that an in-lieu fee for agricultural mitigation would not be sufficient to mitigate for the loss of agricultural lands as a result of the project.

RESPONSE 13.7. Refer to Responses 5.1 and 5.6.

COMMENT 13.8. This comment indicates that the EIR does not address the consequence of taking agricultural land out of the Williamson Act, particularly in regards to the tax benefits accrued to land previously under such a contract.

RESPONSE 13.8. Page 4.2-13 of the Recirculated Draft EIR documents that the project would not result in a direct physical impact to the environment related to the cancellation of a Williamson Act contract. While the project would require the termination of Williamson Act contracts where they would directly overlap with the AME project footprint, this termination would not directly result in physical impacts to the environment. Pages 4.2-14 through 4.2-16 of the Recirculated Draft EIR address the impacts related to conversion of the agricultural land that is presently under these contracts, such as reducing the size of agricultural parcels and converting Prime and Important Farmland. These impacts, however, are considered less than significant, as the project would not create new parcels and the agricultural zoning for these parcels would not change. Furthermore, the farmland converted as a result of the project would represent just 0.05 percent of the farmland in Merced County.

Additionally, under CEQA Section 15131, economic impacts of a proposed project are not required to be evaluated unless they would lead to a physical environmental impact. The evaluation of the tax benefits accrued to land previously under Williamson Act contract is therefore outside the scope of this EIR.

COMMENT 13.9. This comment states that the EIR failed to analyze the impact to the agricultural preserve.

RESPONSE 13.9. According to the *Merced County Rules of Procedure to Implement the California Land Conservation Act of 1965* (July 25, 2000; Revised September 26, 2000), "an agricultural preserve has been established by the County for those areas devoted to agricultural and open-space uses as per the Williamson Act. Establishment of the agricultural preserve is a prerequisite for landowners to enter into land conservation contracts with the

County." Pages 4.2-13 and 4.2-14 of the Recirculated Draft EIR evaluate the physical impacts to lands under Williamson Act contract. Pages 4.2-14 through 4.2-16 also address impacts associated with agricultural parcel size and the conversion of Prime and Important Farmland, as discussed above in response to comments 5.6 and 13.8. As such, the Recirculated Draft EIR adequately addresses the impact to the agricultural preserve.

COMMENT 13.10. This comment states that the EIR does not appropriately analyze impacts to threatened or endangered species and habitat in the project area and that the mitigation measures do not address the long-term indirect impacts to these species.

RESPONSE 13.10. Impacts to threatened or endangered species, including long-term mitigation measures, are discussed fully and adequately in the Recirculated Draft EIR in Section 4.11, Biological Resources and Wetlands. The comment does not address the specific mitigation deficiencies. In any event, Section 6.5, Growth Inducement, of the Recirculated Draft EIR indicates that the project would not result in unplanned growth and would not be considered growth-inducing. Therefore, impacts to biological species are adequately considered in Section 4.11 of the Recirculated Draft EIR.

Refer to Response 5.5 for a discussion of MCAG's coordination and concurrence with the U.S. Fish and Wildlife Service.

COMMENT 13.11. This comment states that the population and growth projection data in the EIR do not accurately reflect the current conditions in the project area. The comment also indicates disagreement with the conclusion that the AME project, in combination with other projects, would not directly result in cumulative population and housing impacts.

RESPONSE 13.11. Refer to Responses 5.1 and 5.2. Page 5-5 of the Recirculated Draft EIR documents that the AME project does not involve the construction of residential units and would therefore not directly result in direct population or housing growth that could contribute to a cumulative population or housing impact.

COMMENT 13.12. This comment states that the rezoning of the agricultural land that would be divided into properties of 20 acres of less as a result of the AME project would further contribute to the urbanization of agricultural land.

RESPONSE 13.12. The discussion on page 4.2-14 of the Recirculated Draft EIR states that the rezoning of any private parcels is not part of the project and that any rezoning would be proposed by the property owner or by the County as a separate action, requiring separate environmental evaluation.

COMMENT 13.13. This comment states that the Regional Transportation Plan does not act as a substitute for the Merced County General Plan and that the Regional Transportation Plan evaluating the growth-inducing impacts of the AME project.

RESPONSE 13.13. The Recirculated Draft EIR does not rely on the Regional Transportation Plan as a substitute for the Merced County General Plan. The Recirculated Draft EIR found the project to be consistent with the Merced County General Plan and its provisions and policies allowing for growth, notwithstanding the Regional Transportation Plan. This analysis is provided in more detail in Section 4.1, Consistency with Existing Plans and Policies, of the Recirculated Draft EIR. Table 4.1-1 of the Recirculated Draft EIR provides a policy consistency analysis with all relevant goals of the Merced County General Plan.

See Response 5.4 for a discussion of growth inducement.

COMMENT 13.14. This comment states that the analysis of land converted from pervious to impervious surfaces as a result of the AME project does not include the land that would be disturbed to construct the

AME or land that would be converted to urban uses as a result of the AME. The comment states that the EIR does not comprehensively address impacts to drainage, flooding, stormwater runoff, and groundwater.

RESPONSE 13.14. Page 5-7 of the Recirculated Draft EIR documents the cumulative impacts associated with the conversion of pervious surfaces to impervious surfaces. The Recirculated Draft EIR states that the AME project and other roadway projects are being planned to accommodate future projected growth. This growth could result in an indirect cumulative impact to groundwater recharge as open land is converted to impervious buildings and paving surfaces. Analysis of impacts to drainage/flooding and storm water runoff from land that would be converted to urban uses in areas surrounding the AME would be speculative, as no development projects are presently under consideration. Subsequent development projects will undergo separate environmental review and would be required to address stormwater runoff and flooding issues at that time.

Section 4.9, Hydrology and Water Quality, of the Recirculated Draft EIR also addresses project impacts to drainage, flooding, stormwater runoff, and groundwater. Specifically, page 4.9-13 through page 4.9-16 contains analysis and mitigation measures to address potential erosion and drainage impacts of the project. Pages 4.9-10 through 4.9-13 and 4.9-21 through 4.9-22 address potential flooding impacts for both Alternative 1A and Modified Alternative 1B. Pages 4.9-13 through 4.9-21 evaluate project impacts associated with stormwater runoff. Project-related impacts to groundwater are discussed on pages 4.9-13 and 4.9-20. Thus, the Recirculated Draft EIR provides a detailed discussion of such impacts and provides mitigation measures to reduce any potentially significant impacts to hydrology and water quality to a less-than-significant level.

MCAG
MERCED COUNTY ASSOCIATION OF GOVERNMENTS

Comment Sheet for the Atwater-Merced Expressway Recirculated Draft Environmental Impact Report

Written comments can be submitted at the public meeting or mailed to the Merced County Association of Governments (mailing address is on the back of this card), faxed to **209-723-0322**, or e-mailed to **AMEcomments@mcagov.org** by close of business **Monday, January 5th, 2009.**

Please print clearly.

Name: JOE & CAMILLA FOSTER

Organization and Address: Buhach Flea Market
4814 W. Clover Ave Atwater
mailing address: 1921 OLD LAKE Rd MERCED 95340

Phone (209) 383-6905 FAX (209) 383-5560

E-mail: alacattle @ AOL.com

ALL COMMENTS BECOME PART OF THE PUBLIC RECORD.

Date: 12/17/08

Comment: We own a parcel that will have +200' of frontage on Green Sands if and when it is extended S.E. to the proposed Expressway. We have no objection to the Green Sands extension provided we are compensated and look forward to discussing this at the appropriate time. Thank you —
Joe Foster
1921 Old Lake Rd
Merced 95340

14.1

Response to Comment 14 – Mr. Joe and Ms. Camilla Foster

COMMENT 14.1. This comment states that the commenter does not object to the extension of Green Sands Avenue as a result of the AME project, so long as they are compensated for the impacts to the property.

RESPONSE 14.1. As discussed on pages 4.3-14 and 4.3-15 of the Recirculated Draft EIR, property acquisition for the AME project would be governed by the Eminent Domain Law of the State of California (Code of Civil Procedure Section 1230.010-1273.050), as well as the Uniform Relocation Assistance and Real property Acquisition Policies Act of 1970, as amended. Under these laws, affected property owners would be compensated for their land as well as their home and business losses. Homeowners and tenants would be compensated for relocation and the loss of homes.

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Oral Comments Received at the Recirculated Draft EIR Public Meeting December 16, 2008

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Comment 15, Compiled Oral Comments Received at the Recirculated Draft EIR Public Meeting (December 16, 2008)

No meeting transcript was provided at this public meeting for the Recirculated Draft EIR. Oral comments received at this public meeting were recorded by MCAG staff. Commenters at the public meeting were also encouraged to submit written comments on the Recirculated Draft EIR.

COMMENT 15.1. The commenter questioned what types of accommodations would be made for pedestrian and bike crossings across the AME.

RESPONSE 15.1. Under Alternative 1A, a pedestrian and bicycle overcrossing structure would be provided at Avenue One, as identified in Mitigation Measure PS-5b. The pedestrian overpass would be constructed between the two cul-de-sacs on Avenue One on the east and west sides of Alternative 1A. Built in accordance with the *Safe Route to Schools* guidelines, the pedestrian overpass would allow for individuals to safely cross the expressway and access the Avenue One school site.

Under Modified Alternative 1B, the AME would be depressed to pass underneath Avenue One. This would allow pedestrians and bicyclists to use Avenue One to access the future Avenue One school site without having to cross the new expressway. Because the AME project would be constructed as an expressway, pedestrian and bicycle access along the new roadway would not be allowed for safety reasons. However, pedestrians and bicyclists would be able to cross the AME at signalized intersections.

Additionally, between SR 59 and Franklin Road, the AME would be constructed to the north of Bellevue Road, leaving the existing Bellevue Road in place to act as a local frontage road. This is being done in part to protect sensitive biological habitats that occur to the south of Bellevue Road and in part to accommodate the County's plans to encourage a bicycle route along Bellevue Road, providing connectivity to the Castle Airport Development Center (former Castle Air Force Base). The Bellevue Road frontage road would therefore connect to SR 59 via a short bicycle pathway.

COMMENT 15.2. The commenter questioned when the affected residents/property owners will know how the AME will affect their property and to what degree will each property be affected. The commenter asked when and where the information would be available.

RESPONSE 15.2. The final alignment for the AME has not been selected and substantial design work still needs to be done to refine the project footprint to reduce property impacts to the extent feasible. Once the environmental review phase is complete and a preferred project alternative is selected, more detailed engineering will occur which may result in changes to the number of parcels impacted and amount of land needed from each parcel. Notices of the availability of the Recirculated Draft EIR and the December 16 public meetings were sent to property owners along the proposed alignments, based on the County Assessor's parcel records. Pages 4.3-9 through 4.3-15 of the Recirculated Draft EIR includes a discussion and lists of parcels on which homes, businesses, and structures would be affected (requiring modification, relocation, or demolition) for each alternative alignment However, these lists do not identify parcels where property acquisition may be required but no structures would be affected.

To provide as much information as possible on potential property impacts, a preliminary list of all parcels from which property may be required to construct the project is included in Appendix D of this Final EIR. It is important to note that the parcel list in this Final EIR is a preliminary list and that the specific number of parcels, homes, and businesses affected by Alternative 1A or Modified Alternative 1B may decrease when more detailed engineering is conducted during the final design process of the AME project.

MCAG will continue to work with affected property owners throughout the right-of-way appraisal and acquisition process. Any necessary acquisitions of property for the eventual construction of the project would be performed pursuant to California State laws related to property takings and relocations.

COMMENT 15.3. The commenter asked for clarification regarding the planned improvements at the intersection of SR 59 and Bellevue Road.

RESPONSE 15.3. As part of the AME project, the existing intersection would be widened at all four approaches and connected to the AME. The AME itself would be constructed slightly to the north of the existing Bellevue Road. The existing Bellevue Road would not connect with SR 59 and would become a frontage road located on the south side of the AME. The western approach on Bellevue would be disconnected at the intersection of Fox Road. This decision to maintain a segment of Bellevue Road was made to protect sensitive biological habitat located south of Bellevue Road, to maintain access to existing homes, and to provide an east-west alternative to the AME that could be used by bicyclists to reach the Castle Development Center.

COMMENT 15.4. The commenter stated that at the first AME public meeting, Alternative 1A was presented to be much more expensive than Alternative 1B. According to the figures presented on the Recirculated Draft EIR, the two alternatives appear to be equal.

RESPONSE 15.4. As the lead agency, MCAG has continued to refine the project design throughout the project development, which has included more detailed cost estimates for each alternative. MCAG is in the process of finalizing the cost estimate for each alternative for the Project Report and it is now anticipated that Alternative 1B would have a slightly higher cost than Alternative 1A. These costs are not addressed in the EIR, which does not consider funding or fiscal impacts of the project.

COMMENT 15.5. This comment asked for clarification on the general design of the AME.

RESPONSE 15.5. As discussed in Chapter 3, Project Description, of the Recirculated Draft EIR, the AME is a proposed 7-mile-long north-south transportation corridor. The AME would be a four-lane divided access controlled expressway with cloverleaf style interchanges with major roadways (SR 99 and Santa Fe Drive), grade separated crossings of the BNSF and UPRR tracks, and signal-controlled intersections with local roads. The project would include the realignment of some existing road segments, including SR 99, intersection improvements at several existing local intersections, and the extension of some local roads to connect with the new expressway and increase local access to the project. Figures 3-2a and 3-2b of the Recirculated Draft EIR show the proposed design of the two AME alternatives (Alternative 1A and Modified Alternative 1B).

COMMENT 15.6. The commenter questioned whether the AME should be built as straight as possible, as it is being built as an expressway.

RESPONSE 15.6. A number of different alternatives were considered for the AME, some of which would provide a slightly straighter route. Most of these alternatives were rejected because they would result in too many impacts to the human or natural environment, or because they did not meet the project purpose and need. The design of the two alternatives now being considered reflects a number of different constraints, including required interchange spacing along SR 99, locations of sensitive biological habitats, concentrations of residential development, and locations of public services. See Section 7.0, Alternatives, for additional discussion of the alternatives considered but rejected from further analysis.

COMMENT 15.7. The commenter stated that there are four car lot parcels on Broadway Avenue near SR 99. The way the AME is designed, there will not be access near the Buhach Road/SR 99 interchange to access

these car lots. The commenter asked why Broadway Avenue would not be extended all the way through to provide access to the car lots.

RESPONSE 15.7. The existing Buhach Road/SR 99 interchange, which presently provides access to Broadway Avenue, is considered to be substandard per Caltrans design standards and poses a traffic safety concern. Part of the established purpose and need of the AME project is to close this intersection to improve safety and traffic operation characteristics on SR 99 at this location. Access would remain via the AME to Green Sands Avenue. However, there is potential for an underpass under the AME/SR 99 Interchange to be built for potential use in the future as an extension of Ashby Road or Broadway Avenue. While this extension is not part of the AME project, it may be completed at a later date by or with assistance by local developers. If built, this connection would also improve access to the parcels on Broadway Avenue.

See also the responses to Comment 7.

COMMENT 15.8. The commenter questioned whether soundwalls could be positioned along Gurr Road and on the locations of other soundwalls provided as part of the AME project.

RESPONSE 15.8. Section 4.6, Noise, of the Recirculated Draft EIR provides a discussion as well as maps of the recommended soundwalls (see Figures 4.6-5 through 4.6-8). While there is a soundwall located on the eastern side of the AME within close proximity to Gurr Road, a soundwall is not being recommended along Gurr Road. Refer to Response 6.4 for further discussion regarding the need for a soundwall on Gurr Road.

COMMENT 15.9. The commenter indicated that the closure of the interchange at Buhach Road and the cul-de-sac proposed on Broadway Avenue would impact local businesses on Broadway Avenue. The new overpass at SR 99 would cut off access to four car lots, which would adversely affect these businesses because they are reliant on pass-by traffic. Even though access would still be provided by going around to Green Sands Avenue, it would be a substantial change to existing traffic patterns. The commenter asked how the business owners would be compensated.

RESPONSE 15.9. Refer to Response 8.1.

COMMENT 15.10. The commenter stated that there are quite a few residents in the SR 99/Buhach Road interchange area and noted that the AME would seriously change emergency access to these areas. The commenter questioned how emergency response would be handled in the area.

RESPONSE 15.11. Section 4.14, Public Services, of the Recirculated Draft EIR evaluated the emergency response impacts in Merced County and in the cities of Atwater and Merced. MCAG has also coordinated directly with local fire and police departments to determine how construction and operation of the AME would impact their ability to provide services to the project area. The Recirculated Draft EIR determined that the project would not significantly change service demands for police, fire, or emergency medical service, or emergency response times for each service provider, but that the project would result in an adverse impact during project construction. In response, the EIR on pages 4.14-8 through 4.14-11 includes mitigation measures, such as specialized traffic signals, as well as detailed information about changes to local roadways, and the preparation of a Traffic Management Plan, which would reduce any potentially significant impacts to a less-than-significant level.

COMMENT 15.11. The commenter stated that the state is planning on widening SR 99 and realigning the existing UPRR railroad on the south side of SR 99. The commenter asked when this would be expected to occur.

RESPONSE 15.11. There is planning being performed at the state level for the future widening of SR 99, but the timeline of this widening is unknown. To support the eventual widening of SR 99, the AME project would realign a section of SR 99 near Buhach Road and would provide sufficient roadway width to allow for the future widening of SR 99 to six lanes, and potentially to eight lanes in the future. The future widening of SR 99 is a separate project being performed by a separate lead agency, Caltrans. Separate environmental review, independent of the AME project, would be performed for this separate project. Refer to Response 7.6 for further discussion.

COMMENT 15.12. The commenter stated that the Atwater Elementary School District (AESD) will be submitting formal written comments on the Recirculated Draft EIR. The AESD expressed gratitude to MCAG for working very closely with the District. No alignment is going to be perfect and someone will always be burdened by the project. In this case, the selection of the Avenue One school site was made several years ago and purchased with community bond money (Proposition 39 General Obligation Bond); the AME project team is working to protect tax dollars invested in public education by avoiding the proposed school site.

RESPONSE 15.12. The comment is noted. No further response is required.

COMMENT 15.13. The commenter raised concern that the AME would impact housing and businesses. The project is going to cost hundreds of millions of dollars and will require the removal of businesses and dairies. The commenter asked how the project would be funded, as the state is in a deep recession and voters did not approve the local tax measure to fund transportation projects.

RESPONSE 15.13. Refer to Response 5.1.

COMMENT 15.14. The commenter noted that the project area is a farming community and questioned whether the environmental document indicated the total amount of farmland that would be lost as part of the project, including for the roadway, easements, and when remnant parcels would be created that could not be farmed.

RESPONSE 15.14. Pages 4.2-13 through 4.2-16 of the Recirculated Draft EIR document the total amount of farmland that would be lost as part of the AME project. Specifically, Table 4.2-2 lists the area under Williamson Act contract that would be impacted and Table 4.2-3 shows the direct impact to Prime and Important Farmland. As discussed on page 4.2-15, the EIS includes mitigation for the loss of agricultural lands in conformance with any countywide program adopted by Merced County prior to the commencement of construction. In the event that no such program is adopted, the farmland impacts of the AME project would be mitigated by purchasing conservation easements at a 1:1 ratio for impacted farmlands. Refer to Response 5.6 for further discussion.

COMMENT 15.15. The commenter raised concern regarding bicycle and pedestrian walkways, indicating, for example, that there is existing foot traffic along Southern Pacific Avenue. The commenter noted that pedestrians and bicyclists use both sides of these roadways and also use Ashby Road to interconnect with the City of Merced. The commenter questioned how pedestrians and bicyclists would access this area when traveling from the west of the AME towards Merced.

RESPONSE 15.15. Pedestrians and bicyclists would have the ability to cross the AME at any of the AME intersections with local streets, including the extension of Green Sands Avenue and Avenue One. These intersections with local roads would be signalized, which would allow pedestrians and bicyclists to safely cross the new roadway. There would be no change to pedestrian and bicycle access along Southern Pacific Avenue because the AME would be grade-separated and would cross over Southern Pacific Avenue. Refer to

Response 15.1 for further discussion of the proposed pedestrian and bicycle facilities, crossings, and connections.

COMMENT 15.16. The commenter questioned why concessions were made for the AESD and the Avenue One school site land.

RESPONSE 15.16. The Draft EIR published in March 2008 included analysis of Alternative 1B which would directly impact the AESD's planned but not yet constructed school site located along Avenue One (Avenue One School Site). The Draft EIR included a mitigation measure that would have required MCAG to identify and acquire a new school site for the AESD to replace the Avenue One school site. The AESD submitted comments on the Draft EIR, which provided more clarity on the extensive process by which the Avenue One school site was selected and identified, highlighted that preliminary plans for the Avenue One school site had already been developed, and that identification of an alternative site would be costly and time consuming. In response, MCAG consulted with the AESD and the California Department of Education in an effort to identify various ways to avoid the Avenue One school site, while accommodating Alignment 1B. Through this process, the project team came up with a modified alignment for Alternative 1B – Modified Alternative 1B – which was then incorporated into a revised and Recirculated Draft EIR. The approach MCAG has followed in addressing the concerns raised by the AESD is consistent with CEQA and was done to avoid a significant impact associated with the design of the project as originally proposed.

COMMENT 15.17. The commenter indicated that there is an irrigation line that travels through the Avenue One school site and questioned why this land was selected by the AESD.

RESPONSE 15.17. The Avenue One school site project is a separate project being performed under a separate lead agency. Separate environmental review was required and performed for the AESD school site. The AME project would not be part of the design process for the school site. The comment is noted and no further response is necessary.

COMMENT 15.18. The commenter identified two additional existing sewer lines that travel from Castle Airport Development Center and along the proposed AME. These lines may be within the depressed section of Alternative 1B. The commenter noted that these are 16-inch pressurized sewer lines that tie into the Atwater sewer system. The commenter questioned how these sewer lines would be impacted by the AME. The commenter also noted that the Recirculated Draft EIR states that there are sewer lines on Avenue Two, when in fact these sewer lines are actually located on Avenue One.

RESPONSE 15.18. MCAG performed an additional utility search in the project area and identified two 14-inch forced main sewer lines within the project area. The sewer lines extend from the former Castle Air Force Base to Gurr Road. At the intersection of Avenue One and Gurr Road, the two utility lines travel west on Avenue One and terminate at the Atwater sewer treatment plant. This additional information has been added to the EIR, as shown in Chapter 3, Errata/Changes of this Final EIR.

COMMENT 15.19. The commenter stated that they did not receive notices regarding the public meeting on the Recirculated Draft EIR and that they were unable to make comments on the document.

RESPONSE 15.19. Comments on the Recirculated Draft EIR were accepted until January 5, 2009. This comment has been noted and the response to this oral comment is provided below.

Beginning with the March 2008 Draft EIR, the MCAG Board held a public hearing on the March 2008 Draft EIR on April 1, 2008, consistent with CEQA Guidelines Section 15202. Notices for the public hearing (identifying date, time, and location) and the availability of the DEIR were posted at the offices of MCAG, the City of Atwater, the City of Merced, and Merced County. The Merced County Library and Castle

Airport, Aviation and Development Center also received public notification flyers and copies of the DEIR. Spanish language notices were also prepared and posted at city, county and MCAG offices.

Notices were also published in local newspapers, including the *Merced Sun-Star* on March 4, 2008, the *Atwater Times* on March 6, 2008, and the *Merced County Times* on March 6, 2008.

In regards to the December 2008 Recirculated Draft EIR, MCAG has made every effort to ensure that all individuals interested in the AME project were informed of the availability of the Recirculated Draft EIR and the associated Public Meeting. Notices for the Public Meeting on the Recirculated Draft EIR were published in local newspapers, including the *Merced Sun Star* on November 19, 2008 and the *Atwater Times* on November 20, 2008, and were also posted on the MCAG website. Public notices were also posted at the Atwater Community Library and at the offices of MCAG, the City of Atwater, the City of Merced, and Merced County on November 18, 2008.

Public notices regarding the availability of the Recirculated Draft EIR and the associated Public Meeting were also sent via mail to the last known address of property owners along the AME. This mailing list was developed using the MCAG's Geographic Information System (GIS) and information from the County Assessors office. The mailing list was further updated to include anyone who attended a previous project-related meeting and gave their mailing address. Individuals who commented on the March 2008 Draft EIR and August 2008 Final EIR were also added to the mailing list. While some of the mailed notices were returned to MCAG as undeliverable, MCAG made every effort to find the correct addresses and have the public notices redelivered.

Additionally, individuals who provided their contact information on the sign-in sheets at the Recirculated Draft EIR Public Meeting on December 16, 2008 have been added to the mailing list and will be informed of future project meetings and document availability.

Section 15087 of the CEQA Guidelines states that the public notice of the availability of the DEIR "shall be mailed to the last known name and address of all organizations and individuals who have previously requested such notice in writing, and shall also be given by at least one of the following procedures: (1) Publication at least one time by the public agency in a newspaper of general circulation in the area affected by the proposed project. If more than one area is affected, the notice shall be published in the newspaper of largest circulation from among the newspapers of general circulation in those areas; (2) posting of notice by the public agency on and off the site in the area where the project is to be located; and (3) direct mailing to the owners an occupants of property contiguous to the parcel or parcels on which the project is located." Per CEQA requirements, MCAG adhered to the legal requirements and procedures for providing public notification of the availability of the Recirculated Draft EIR through regional newspaper publication, and the public posting of notices.

Comments Received at the Final EIR (published but not certified) Public Hearing on August 21, 2008

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MCAG GOVERNING BOARD

AUGUST 21, 2008

MINUTES

The regular meeting of the **MERCED COUNTY ASSOCIATION OF GOVERNMENTS GOVERNING BOARD** held on Thursday, August 21, 2008, at the County of Merced, Board of Supervisors Chambers, 2222 M Street, Merced, California, was called to order by Chair Oliveira at 3:13 P.M.

DIRECTORS PRESENT
Kathleen Crookham
Joan Faul
Tommy Jones
Deidre Kelsey
Johnny Mays
Mike Nelson
Jerald O'Banion (left at 3:56 pm)
Joe Oliveira
John Pedrozo
Bill Spriggs

DIRECTORS ABSENT
Gurpal Samra

OTHERS PRESENT
Ken Baxter, Caltrans
Cody Beard, SFSU Student
Michaelangelo Bellusci, Innovative Seed, LLC
Jesse Brown, MCAG staff
Curtis Boyenga, Atwater Elementary
Joshua Channell, CirclePoint
Barbara Dutra, AESD School Board
Matt Fell, MCAG staff
Tom Gauthier, Lozano Smith
Joy Gort, MCAG staff
Tom Grave, Citizens Advisory Committee
Robert Haden, Legal Counsel
John Hall, AESD School Board
Melinda Hennes, AESD
Matt Hoffman, Hoffman Security
Gloria Honey, AESD School Board
John Hundley, AESD School Board
Scott Johnston, Merced County Solid Waste
Larnold Jones, Merced County Transit – "The Bus"

Marjie Kirn, MCAG staff
Robin Lamas, MCAG staff
Jerry Lawrie, Merced County Solid Waste
Brandon Leppa, UC Merced Student
Bill Machado, Innovative Seed
Maureen McCorry, San Joaquin Et Al
Lena Mendoza, AESD Trustee
Kristina Meza, UC Merced Student
Dino Migliazzo, Migliazzo and Sons Dairy
Darlene Peters, Private Citizen
Nick Robinson, Private Citizen
Omar Salem, UC Merced Student
Larry Shankland, Merced County Transit – "The Bus"
Scott Steinwert, CirclePoint
Candice Steelman, MCAG staff
Matthew Tolbirt, Innovative Seed, LLC
Ashley Thomsen, UC Merced Student

8. Oral Report: Citizens Advisory Committee

Tom Grave gave the Citizens Advisory Committee report.

9. Consent Agenda

a. Minutes of the July 17, 2008 Governing Board meeting
b. Pavement Management Annual Report - Final
c. Annual Warrant Register July 2007 through June 2008 – Annual Report July 2007 – June 2008
d. Social Services Transportation Advisory Council

Director Pedrozo moved to approve the Consent Agenda.
Seconded by Director Faul.
MOTION CARRIED UNANIMOUSLY.

10. Information Only

a. Minutes of the August 13, 2008 Technical Review Board meeting
b. Bicycle Plan Update
c. Release of California Department of Conservation (DOC) Funds
d. County Wide Food Grading System
e. California Transportation Commission 30th Anniversary Dinner

So noted.

11. Oral Report - Caltrans

Ken Baxter gave a brief report from Caltrans.

12. One Voice 2008-2009 Timeline

Candice Steelman gave a review of the One Voice timeline for the 2008-2009 year.

Director Nelson moved to approve the 2008-2009 One Voice timeline.
Seconded by Director Crookham.
MOTION CARRIED UNANIMOUSLY.

13. Public Hearing – Regional Housing Needs Allocation Plan (RHNA)

Matt Fell stated that MCAG is required by State law to periodically identify the existing and projected housing need for the Merced County region. The RHNA Plan must cover the planning period January 1, 2007 through June 30, 2014.

A Public Hearing is required to here comments on the RHNA Plan.

Public Hearing opened – 3:37 pm.

One comment heard – Maureen McCorry, Director, San Joaquin Et Al
Ms. McCorry submitted a written statement stating the noticing process and lack of availability of information critical to understanding the RHNA Plan report violates the Brown Act. Ms. McCorry stated MCAG did not make the board packets available, therefore the public hearing on this matter must be continued. She also requested the Governing Board file an extension from the Department of Housing and Community Development for the August 31, 2008 deadline, fundamentally revamp the assumptions and methodology used to create this report, and re-circulate a final draft that recognizes the very real housing and foreclosure crisis that is destroying our community.

Public Hearing closed – 3:43

After discussion by the Governing Board, Director Spriggs moved to adopt the "Merced County Regional Housing Needs Allocation Plan" by Resolution No. 2008/08-21-03 and authorize staff to submit the plan to the State Department of Housing and Community Development.
Seconded by Director O'Banion.
MOTION CARRIED UNANIMOUSLY.

14. FY 2008-2009 Local Transportation Fund (LTF) Claims

Director O'Banion moved to approve the Local Transportation Fund claims received by adoption of Resolution 2008/08-21-04.
Seconded by Director Crookham.
MOTION CARRIED UNANIMOUSLY.

15. Los Banos Bypass – Program Change Request

Matt Fell stated that staff has been working the Caltrans District 10 and the City of Los Banos to split the Los Banos Bypass project into fundable segments. Without the resourced to fund the entire project at one time, this approach is the best way to keep it moving forward.

A Program Change Request has been developed which spells out the change and the reasons for it. The Project Manager from Caltrans is seeking MCAG concurrence on the change so that it can be submitted to Caltrans Headquarters for approval.

Director Jones moved to concur with the proposed Program Change Request.
Seconded by Director O'Banion.
MOTION CARRIED UNANIMOUSLY.

16. Atwater – Merced Expressway

Jim Simms, Mark Thomas and Company, gave a power point presentation on the Atwater-Merced Expressway Project. The presentation gave the background of the project and comparisons on the preferred alternative alignments. Due to the purchase of land by the Atwater Elementary School District, which the preferred alignment 1B runs through, a revised 1B alternative is being researched.

Staff is recommending that this item be continued to permit further discussions with stakeholders in the project study area.

This item was opened for public comment. The following comments were heard:

Melinda Hennes – Atwater Elementary School District Superintendent – Asking for the opportunity to participate in a process working with MCAG and their consultants to insure both the Atwater-Merced Expressway and the schools come out winners. Please delay certification until the issues are resolved concerning the Atwater-Merced Expressway. 16.1

Barbara Dutra – Atwater Elementary School District Board Member – I'm here to make sure MCAG understands the selection of a school site is a very time consuming process . The district entered into the purchase of the school site with good faith and with full disclosure to the local agencies. Both the Atwater City Council and the County Board of Supervisors, along with MCAG were served with official notices. No comments were received at that time about the location of the selected school site with regards to the future expressway. 16.2

Nick Robinson – On behalf of the Merced Stop Wal-Mart Action Team – Since the end of the AME draft EIR comment period on May 3rd the State has further clarified its intentions in enforcing AB32 to fight climate change. We have three comments on the draft EIR:

1) The EIR does not account for increased traffic generated by the expressway and that the equitable climate change analysis is incomplete, 16.3
2) The Expressway conflicts with policies in the City of Merced General Plan meant to curb sprawl and preserve ag land and open space. 16.4
3) 1B realignment – would suggest a more health protective buffer for children who go to school. 16.5

Gloria Honey – Atwater Elementary School Board –Purpose is to impress upon the members of the MCAG that the school site selection process is lengthy, complex and very expensive. In short, it is in the best interest of MCAG and those supporting more rapid progress of the expressway to work with us and the CDE to come up with an alignment that is acceptable to the CDE for the school construction on the site already approved. 16.6

John Hundley – Atwater Elementary School District – Has concerns in regards to the inadequacies of the EIR regarding alignment 1B and the new preferred alternative. There seems to be a lack of understanding of the CDE and the public resources code regarding expressways adjoining school sites. Incomplete and vague descriptions of how mitigations will be funded are an issue for us. 16.7

Lena Mendoza – Atwater Elementary School District - Expressed concerns with student health and safety and the Atwater Merced Expressway proximity. Public resources code specifically addresses the proximity of a school site to a major roadway. Per the CDE no site will be approved by the CDE without at least a 500-foot distance between the school and the road. 16.8

John Hall – Atwater Elementary School Board – We understand and want the AME project to be done as it will benefit all of us but have concerns with the distance between the project and the school site. The project should not be approved without an adjustment to the alignment, which would constitute a significant change to the project. This should require a re-circulation of the EIR with the public having the right to provide comments on the change. 16.9

Curtis Boyenga – Atwater Resident – Concerned about the potential decision and its effects the AME would have on the children that would be going to the school on the site next to the 1B Alignment. 16.10

Tom Gauthier – Attorney for Atwater Elementary School District - We've distributed several written comment to the Board and have placed documents into the document basket that we would like entered into the records. Has concerns with consultation; we believe MCAG is required to consult with the school district under public resources code. That process hasn't happened yet. Has a concern with Alternate 1B. Has a concern with Alternate 1A or the new 1B being less than 500 feet from the proposed school. Changes 16.11

to the alignments will require changes to the EIR and re-circulation of that document will be needed. 16.11 Cont.

Dino Migliazzo – Would like to go on record to say that he and his brother are in support of Alignment 1B. 16.12

Maureen McCorry – San Joaquin Et Al – Has concerns with the breakdown in communications between the public sector and MCAG in regards to the AME. Stated a continuance gives people a chance to step back and reflect on the issues. Has a concern on the process of issues with the AME. 16.13

Bill Machado – Innovative Seed – Stated they will do their part to make the AME project become a reality within five years if all parties can come together. Delays will make the project even more costly. The public and private sector can work together. He supports a 30-day talk period to reflect on what has been discussed today and to create the necessary bridges to come together for a mutual solution to benefit all of us. 16.14

Cody Beard - SFSU Student, also representing students from UC Merced and Merced College – They have concerns for opportunities and jobs that are available to graduate students once they complete their education. They feel the AME is a path to their future and are in support of the Expressway. It will provide great circulation as it connects 99 to Castle Air Force Base and then to UC Merced. This Expressway will attract companies that will provide jobs for the County. 16.15

Darlene Peters – Private Citizen – Is concerned with the selection of 1B as it looks like it goes straight though her home. She would like more definite information on where exactly the AME will be in relation to her house. 16.16

After all comments were heard Director Nelson moved to continue both the Atwater Merced Expressway Environmental Impact Report Certification and Preferred Alternative Selection for 30 to 60 days.
Seconded by Director Faul.
MOTION CARRIED UNANIMOUSLY.

17. Oral Report – Jurisdictions

So noted.

THERE BEING NO FURTHER BUSINESS OF THE MCAG GOVERNING BOARD THE MEETING WAS ADJOURNED AT 5:05 P.M.

_____/ s /_____
Robin Lamas
Administrative Assistant II

Response to Comment 16 – MCAG Governing Board Meeting Minutes

COMMENT 16.1. This comment requested that the Atwater Elementary School District have the opportunity to coordinate with MCAG and that the certification of the environmental document be delayed until issues with the AME and Avenue One school site are resolved.

RESPONSE 16.1. The August 2008 Final EIR was published, but because of the concerns voiced by the AESD, a decision was made not to certify the Final EIR at the Public Hearing on August 21, 2008. As discussed in Section 1-1 of the Recirculated Draft EIR, the March 2008 Draft EIR was recirculated on November 17, 2008 for a 45-day public review and comment period. Several project modifications were made to reflect the concerns raised by the Atwater Elementary School District regarding the impacts of Alternative 1B on the Avenue One school site. The original Alternative 1B alignment is no longer under consideration and has been replaced with Modified Alternative 1B. Figure 1-1 of the Recirculated Draft EIR shows the realignment of Modified Alternative 1B.

COMMENT 16.2. This comment stated that the selection of a school site is a very time consuming process. This comment also indicated that MCAG had received official notices regarding the selection of the Avenue One school site and no comments were received at that time regarding the location of the Avenue One school site with regards to the location of the AME project.

RESPONSE 16.2. The comment is noted. No further response is required.

COMMENT 16.3. This comment noted that the EIR does not account for increase traffic generated by the AME and that the equitable climate change analysis is incomplete.

RESPONSE 16.3. Section 4.5, Traffic and Transportation, of the Recirculated Draft EIR documents that traffic impacts associated with the AME project. Pages 4.5-25 through 4.5-44 compare level of service and traffic operations in year 2030 under both the No Build and AME Project conditions. Construction of the AME project would result in improved traffic operations at the majority of the study intersections, when compared to the 2030 No Build conditions, and would result in improved traffic operations at the majority of roadway segments within the project area, including SR 59 and portions of SR 99. The AME project does not involve the construction of any residential, commercial, or service uses that would generate a substantial amount of additional traffic. While the AME would involve the construction of a new roadway that could indirectly induce additional traffic, such assumptions have been incorporated into the traffic model for the 2030 AME Project conditions. Thus, the improvements to local intersections and roadway segments as a result of the AME project have incorporated the anticipated project traffic generation.

Refer to Response 12.6 for discussion of the climate change analysis provided in the Recirculated Draft EIR.

COMMENT 16.4. This comment stated that the AME conflicts with policies in the City of Merced General Plan intended to curb sprawl and preserve agricultural land and open space.

RESPONSE 16.4. Section 4.1, Consistency with Existing Plans and Policies, of the Recirculated Draft EIR provides a policy consistency analysis that addresses the project's consistency with relevant goals and policies associated with land use and planning. While the project does not enter the boundaries of the City of Merced, the AME project would affect vehicular circulation and development patterns in the City. Development of the AME has been anticipated by the City, as evidenced by the discussion of a "planned

Highway 59 Expressway" in the Transportation Element of the City's General Plan.[2] According to the General Plan, this expressway is part of a larger "beltway" circulation plan meant to relieve vehicular congestion in the urban areas of Merced by routing traffic around the City. It is also designed to serve prospective growth areas to the north and northwest of the existing City limits. As such, the AME is consistent with the City of Merced General Plan policies.

Additionally, pages 4.2-14 through 4.2-16 of the Recirculated Draft EIR discuss the impacts to agricultural lands. Refer to Response 5.6.

COMMENT 16.5. This comment suggests providing a more health protective buffer for children at the proposed Avenue One school site, particularly in regards to Alternative 1B.

RESPONSE 16.5. As discussed in response to comment 16.1 above, the original Alternative 1B has been modified to avoid conflicts with the Avenue One school site. The Recirculated Draft EIR has been revised to include a discussion of potential noise, air quality, and hazardous materials impacts associated with the proximity of Modified Alternative 1B and the Avenue One school site. Pages 4.6-14 through 4.6-16 address the potential construction related noise impacts of the AME in relation to the Avenue One school site. While the noise levels during construction could periodically and temporarily exceed local noise standards, Mitigation Measure N-1 of the Recirculated Draft EIR would reduce such impacts to a less-than-significant level. Additionally, pages 4.6-22 and 4.6-23 address the permanent ambient noise increase associated with the AME project in regards to the proximity to the Avenue One school site. Because Modified Alternative 1B would be below grade at the nearest point to the school site, noise levels would remain within acceptable noise standards.

Pages 4.7-12 and 4.7-13 of the Recirculated Draft EIR document the air quality impacts associated with Modified Alternative 1B in relation to the Avenue One school site. Air quality screenings at the Avenue One school site indicated that the incremental cancer risk associated with traffic emissions from the AME would be below the San Joaquin Valley Air Pollution Control District recommended significance threshold, thus representing a less-than-significant impact.

Pages 4.10-14 and 4.10-15 of the Recirculated Draft EIR also document project impacts related to hazardous materials in proximity to a school site. The Merced County Fire Department reviewed the plans for the AME and determined that the fire department has the necessary emergency procedures and protocols in place to address potential accidental release of hazardous materials if it were to occur on the AME near the Avenue One school site, representing a less-than-significant impact.

COMMENT 16.6. This comment stated that the school site selection process is lengthy, complex and very expensive. This comment requested that MCAG coordinate with the Atwater Elementary School District and the California Department of Education (CDE) to develop an alignment that is acceptable to the CDE for the approved school construction on the Avenue One school site.

RESPONSE 16.6. Refer to Response 16.1.

COMMENT 16.7. This comment raised concerns regarding the adequacy of the EIR regarding Alternative 1B and the new preferred alternative. This comment indicated that there is a lack of understanding of the CDE and public resources code regarding adjoining expressways and school sites. The comment states that the funding for the proposed mitigation in the Draft EIR is incomplete and vague.

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2 Merced County. 1997. Merced Vision 2015 General Plan. Revised January 2006.

RESPONSE 16.7. Refer to Response 16.1.

COMMENT 16.8. This comment expressed concern with student health and safety due to the proximity of the AME project.

RESPONSE 16.8. Refer to Response 16.5.

COMMENT 16.9. This comment expressed concern regarding the distance between the AME project and the Avenue One school site. This comment requested that the AME alignment be modified and that the EIR should be recirculated for additional public comment which MCAG did by publishing a Recirculated Draft EIR in November 2008.

RESPONSE 16.9. Refer to Response 16.1.

COMMENT 16.10. This comment raised concern about the potential effects of the AME on the children that would be attending the Avenue One school site.

RESPONSE 16.10. Refer to Response 16.1.

COMMENT 16.11. This comment stated that MCAG should be required to consult with the Atwater Elementary School District under public resources code. This comment expresses concern with the proximity of the AME and indicated that changes to the alignment would require a recirculation of the Draft EIR.

RESPONSE 16.11. Refer to Response 16.1.

COMMENT 16.12. This comment expressed support for Alternative 1B.

RESPONSE 16.12. The comment is noted. No further response is required.

COMMENT 16.13. This comment expressed concern with the breakdown in communications between the public sector and MCAG in regards to the AME project.

RESPONSE 16.13. Refer to Response 15.19 regarding public noticing for the AME project.

COMMENT 16.14. This comment expressed support for the AME project and suggested a 30-day talk period to reflect the discussions on the AME project.

RESPONSE 16.14. Refer to Response 16.1.

COMMENT 16.15. This comment stated that the AME would provide great circulation as it would connect SR 99 to Castle Air Force Base and University of California, Merced. This comments notes that the AME will attract companies that would provide jobs to the County.

RESPONSE 16.15. The comment is noted. No further response is required.

COMMENT 16.16. This comment expressed concern with the selection of Alternative 1B, as it would impact the commenter's home. The commenter asked for more definite information on the exact location of the AME in relation to their home.

RESPONSE 16.16. Refer to Response 15.2.

Comment Letters Received on the Draft EIR Issued March 3, 2008

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STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

May 5, 2008

Jesse Brown
Merced County Association of Governments
369 W. 18th Street
Merced, CA 95340

Subject: Atwater-Merced Expressway
SCH#: 2006081138

Dear Jesse Brown:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on May 2, 2008, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. 17.1

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Terry Roberts

Terry Roberts
Director, State Clearinghouse

RECEIVED
MAY 06 2008
MCAG

Document Details Report
State Clearinghouse Data Base

SCH# 2006081138
Project Title Atwater-Merced Expressway
Lead Agency Merced County Association of Governments

Type EIR Draft EIR

Description The Atwater-Merced Expressway (AME) is a proposed 7-mile-long expressway located in the northeast portion of Merced County. The AME would provide motor-vehicle travel between State Route (SR) 59 at Bellevue Road and SR 140 at Gurr Road providing an alternative route to existing SR 59 which travels through downtown Merced.
The AME project would be a new four-lane divided access-controlled expressway with limited cloverleaf style interchanges with major roadways (SR 99 and Santa Fe Drive) and signal-controlled intersections with local roads. The project would include the realignment of some existing roads, including a portion of SR 99, and the extension of some local roads to connect with the new expressway.

Lead Agency Contact

Name Jesse Brown
Agency Merced County Association of Governments
Phone (209) 723-3153 **Fax**
email
Address 369 W. 18th Street
City Merced **State** CA **Zip** 95340

Project Location

County Merced
City Atwater, Merced
Region
Cross Streets State Route 59 and Bellevue Road to State Route 140 and Gurr Road
Parcel No. Multiple
Township 6S **Range** 13E **Section** 34 **Base**

Proximity to:

Highways SR 59, SR 99, SR 140
Airports Castle Airport
Railways UPRR and BNSF
Waterways Canal Creek and Black Rascal Creek
Schools Multiple school districts
Land Use Various, primarily Agricultural designations

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Cumulative Effects; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Geologic/Seismic; Growth Inducing; Landuse; Noise; Other Issues; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife

Reviewing Agencies Resources Agency; Regional Water Quality Control Bd., Region 5 (Fresno); Department of Parks and Recreation; Native American Heritage Commission; Public Utilities Commission; Office of Historic Preservation; Department of Fish and Game, Region 4; Department of Water Resources; Department of Conservation; California Highway Patrol; Caltrans, District 10; Air Resources Board, Transportation Projects; Department of Toxic Substances Control; Caltrans, Division of Aeronautics

Date Received 03/03/2008 **Start of Review** 03/03/2008 **End of Review** 05/02/2008

Note: Blanks in data fields result from insufficient information provided by lead agency.

Response to Comment 17 – State Clearing House and Planning Unit

COMMENT 17.1. This comment reiterates that the State Clearinghouse submitted the AME DEIR to selected state agencies for review. The review period closed on May 2, 2008, and no state agencies submitted comments by that date. This letter acknowledges compliance with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act commonly-used standards.

RESPONSE 17.1. This comment is noted. No further response is required.

STATE OF CALIFORNIA -- THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 942360001
(916) 653-5791

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APR 04 2008
MCAG

April 2, 2008

General

Jesse Brown
Merced County Association of Gov
369 West 18th Street
Merced, California 95340

Project Title: Atwater-Merced Expr
State Clearinghouse (SCH) Numbe

The project corresponding to the subject SCH identification number has come to our attention. The limited project description suggests your project may be an encroachment on the State Adopted Plan of Flood Control. You may refer to the California Code of Regulations, Title 23 and Designated Floodway maps at http://recbd.ca.gov/. Please be advised that your county office also has copies of the Board's designated floodway for your review. If indeed your project encroaches on an adopted flood control plan, you will need to obtain an encroachment permit from the Central Valley Flood Protection Board prior to initiating any activities. The attached Fact Sheet explains the permitting process. Please note that the permitting process may take as much as 45 to 60 days to process. Also note that a condition of the permit requires securing all of the appropriate additional permits before initiating work. This information is provided so that you may plan accordingly. 18.1

If after careful evaluation, it is your assessment that your project is not within the authority of the Flood Board, you may disregard this notice. For further information, please contact me at (916) 574-1249.

Sincerely,

for Christopher Huitt
Staff Environmental Scientist
Floodway Protection Section

Enclosure

Cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, California 95814

Response to Comment 18 – Department of Water Resources

COMMENT 18.1. This comment identifies the fact that if the project encroaches on a State Adopted Plan of Flood Control, an encroachment permit from the Central Valley Flood Protection Board must be obtained.

RESPONSE 18.1. Prior to project construction, a flood encroachment permit from the Central Valley Flood Protection Board would be required for construction over Black Rascal Creek and Canal Creek. The flood encroachment permit would be in compliance with Title 23, Section 112 of the California Code of Regulations. Page 4.9-9 of the Recirculated Draft EIR indicates that a flood encroachment permit would be required.

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MAY 05 2008
MCAG

Merced County Farm Bureau

May 2, 2008

Merced County Association of Governments
Attn: Mr. Jess Brown, Executive Director
369 West 18th Street
Merced, California 95340

Re: Comments on the Atwater-Merced Expressway Draft EIR

Dear Mr. Brown,

The Merced County Farm Bureau offers the following comments on the Draft EIR on the Atwater-Merced Expressway as it relates to agriculture:

As acknowledged in the DEIR in section 4.2-1: "The predominant land use in the project study area is agriculture. Farmland surrounds the majority of the project study area. Cropland (including orchards) and irrigated pasture border most of the project alignment. Farmland adjacent to the project study area also includes hay fields and grasslands. Residences and buildings associated with farming are dispersed within the farmland as well."

Additionally the DEIR states: "The Atwater Merced Expressway project…would directly and indirectly convert productive agricultural and open space lands including FMMP-designated Prime and Important Farmland and agricultural properties under a Williamson Act contract."

1. While a brief reference is made to the Williamson Act preserve, this conflict is not addressed. 19.1

2. Mitigation: Where is the plan to address the conversion of agricultural lands? There is no written policy for mitigating the agricultural lands that will be converted. 19.2

3. Growth Inducing: Both alternatives direct growth in a specific direction – without any coordination with local general plans that are currently in the process (Merced County and the City of Merced). How does this project impact those planning processes? 19.3

(209) 723-3001 - FAX (209) 722-3814 - 646 South Highway 59 - P.O. Box 1232 - Merced, CA 95341
E-mail: mcfb@pacbell.net

4. Impacts to existing agricultural operations need to be addressed in regards to irrigating fields, crop rotation and general husbandry practices. 19.4

5. The Atwater Merced Expressway as currently presented in either option 1A and/or 1B bi-sects a significant flood plain. As noted in the EIR there are potentially significant impacts. The creation of a flood control plan for all of Merced County, and specifically in a region that has had flooding problems in recent years is needed. Flood control needs to be addressed to accommodate the projected growth. Who is currently responsible for flood control issues? 19.5

6. Currently, the farmland in the Central Valley is under the Irrigated Lands Waiver. The land under consideration for this project is in the East San Joaquin Water Quality Coalition's area for testing purposes and drainage issues are huge in this region. All rivers, streams and creeks are under the waiver. The impacts on those waterways, separate from Merced Irrigation District's interests, need to be addressed in regards to storm water drainage or any drainage that will reach the waterways. 19.6

Thank you for the opportunity to comment.

Sincerely,

Merced County Farm Bureau
Board of Directors

Response to Comment 19 – Merced County Farm Bureau

COMMENT 19.1. This comment asserts that the DEIR did not address conflicts with lands currently held under Williamson Act preserves.

RESPONSE 19.1. A full and adequate discussion of the Williamson Act preserve areas to be affected can be found in the AME Recirculated Draft EIR in Section 4.2, Land Use and Agriculture.

As provided in Section 4.2, Land Use and Agriculture, the Williamson Act provides a tax incentive for the voluntary enrollment of agriculture and open space lands in contracts between local landowners and governments. Although Williamson Act contracts are initially for 10 years, and renew annually, the landowner or local government may file to initiate non-renewal. In the alternative, a landowner may petition for a contract cancellation. Although Project implementation would require the cancellation of eight Williamson Act Contracts, cancellation will not directly result in physical impact to the environment. The physical impact to the environment, which in this case would be the direct conversion of farmlands is discussed in Section 4.2 of the Recirculated Draft EIR.

COMMENT 19.2. This comment asserts that the DEIR did not include mitigation for the conversion of agricultural lands.

RESPONSE 19.2. As stated on page 4.2-14 through 4.2-16 of the Recirculated Draft EIR, impacts resulting from the conversion of farmland are not considered significant since the project would result in the conversion of only 0.05 percent of Prime and Important Farmland acres in Merced County. Although considered a less-than-significant impact, page 4.12-15 of the Recirculated Draft EIR states that MCAG shall mitigate for the loss of agricultural lands in conformance with any countywide program adopted by Merced County prior to the commencement of construction. In the event no such program is in place prior to construction, the farmland impacts of the AME project should be mitigated by purchasing conservation easements at a 1:1 ratio for impacted farmlands. Page 4.2-15 of the Recirculated Draft EIR also indicates that the AME project would impact farmlands associated with several dairy operations, but that such impacts are discussed in Section 4.3, Population, Housing, and Employment, under business relocations.

COMMENT 19.3. This comment asserts that the project would direct growth into an area without coordination with the local general plans, specifically the Merced County and City of Merced General plans.

RESPONSE 19.3. A full and adequate comparison and coordination of the Project and those local general plans can be found in the AME Recirculated Draft EIR in Sections 4.1, Consistency with Existing Plans and Policies and 4.2, Land Use and Agriculture. More specifically, in Table 4.1-1 "Policy Consistency," all goals as provided for in the local plans are coordinated, in detail, with the project and its effect, if any, on those stated goals.

A majority of the Project study area is in Merced County. The Project is consistent with relevant policies of the Merced County General Plan wherein the Plan allows for conversion of agricultural land when conversion is justified and when it may occur with minimal impacts to valuable farmland. Although some areas zoned for agricultural use would need to be re-zoned to non-agricultural use(s), the AME project would not result in the development of any commercial or retail development. A majority of the Project area would remain zoned for agricultural use with implementation of the Project.

Additionally, the development of new housing or businesses is not included in the AME Project. No direct inducement of population growth in the Project area is anticipated that is inconsistent with the local general plans. Local agencies have planned for growth and the AME was included in local plans and as part of the MCAG 2006 Regional Transportation Plan. Further, both the City of Atwater and the Merced General Plans

have both planned for future roadways in the Project study area. The AME is therefore, consistent with long-term planning in the region, and any growth associated with the AME project has, therefore, been previously anticipated.

In summary, urbanization of the lands contiguous or adjacent to the AME would require discretionary land use approvals from the City of Atwater, the City of Merced or the Merced County Board of Supervisors. These discretionary land use approvals include, but would not necessarily be limited to, annexations, General Plan amendments, zoning reclassifications, tentative subdivision or parcel maps, and Conditional Use Permits. With very limited exceptions, each agency's applicable General Plan requires the provision of urban services (including expansion and extension of urban sewer, water and storm drainage facilities) to the project site. Such facilities do not exist at the present time. Further, prior to approval of any of these land use entitlements, the applicant would be required to comply with CEQA. The review of such entitlements under CEQA would be more focused and detailed, because more specific information on the underlying project would be available. This is consistent with CEQA's mandate that environmental review be conducted at a point in time when enough detail is available to facilitate meaningful review (see CEQA Guidelines Section 15004). In sum, while the AME project will almost certainly not discourage growth, the project's growth-inducing impacts are quite attenuated in light of the factors listed above, and could not be meaningfully evaluated in the EIR.

COMMENT 19.4. This comment asserts the AME DEIR did not address impacts to existing agricultural operations in regards to irrigating fields, crop rotation and general husbandry practices.

RESPONSE 19.4. Impacts to existing Agricultural operations are discussed fully and adequately throughout Section 4.2, Land Use and Agriculture, of the Recirculated Draft EIR. No further response is necessary at this time.

COMMENT 19.5. This comment suggests that the project alternatives, as currently presented in either option 1A and/or 1B, bisect a significant flood plain. The comment reiterates the identified potentially significant impacts addressed in the AME DEIR, and recommends the creation of a flood control plan for all of Merced County, specifically in the regions that have had flooding problems in recent years. The comment requests the identification of agencies responsible for flood control issues.

RESPONSE 19.5. As stated in section 4.9, Hydrology and Water Quality, of the Recirculated Draft EIR, the project would not impede or redirect flood flows. Page 4.9-9 of the Recirculated Draft EIR notes that an encroachment permit would be required from the Central Valley Flood Protection Board for construction over Black rascal Creek and Canal Creek.

As shown in Figure 4.9-2 of the Recirculated Draft EIR, the project would bisect the 100-year floodplain for Black Rascal Creek. If Modified Alternative 1B is selected, drainage and flooding related impacts to the depressed section between Green Sands Avenue and Canal Creek would occur. Pages 4.9-20 through 4.9-21 address potentially significant flood impacts for motorists traveling on the depressed section of Modified Alternative 1B and provides mitigation to reduce the exposure of motorists to flood hazards to a less-than-significant level.

As stated on pages 4.9-19 and 4.9-20 of the Recirculated Draft EIR, the project would convert pervious surface area to impervious surface area which could result in stormwater runoff in excess of the existing or planned stormwater drainage system and flood nearby areas. However, implementation of drainage systems as specified in Mitigation Measures HWQ-5a and HWQ-5b would maintain the existing drainage pattern of the project study area and reduce this impact to less-than-significant level.

COMMENT 19.6. This comment asserts the deficiencies of the AME DEIR in regards to addressing impacts to stormwater drainage.

RESPONSE 19.6. As stated in Response 19.5 above, the project would convert pervious surface area to impervious surface area which could result in stormwater runoff in excess of the existing or planned stormwater drainage system and flood nearby areas. However, implementation of drainage systems as specified in Mitigation Measures HWQ-5a and HWQ-5b, on pages 4.9-19 and 4.9-20 of the Recirculated Draft EIR would maintain the existing drainage pattern of the project study area and reduce this impact to less-than-significant level.

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

RECEIVED
MAY 05 2008
MCAG

May 1, 2008

Jesse Brown
Merced County Association of Governments
369 West 18th Street
Merced, CA 95340

Re: Notice of Completion, Draft EIR
Atwater-Merced Expressway
SCH# 2006081138

Dear Mr. Brown:

As the state agency responsible for rail safety within California, the California Public Utilities Commission (CPUC or Commission) recommends that development projects proposed near rail corridors be planned with the safety of these corridors in mind. New developments and improvements to existing facilities may increase vehicular traffic volumes, not only on streets and at intersections, but also at highway-rail crossings. In addition, projects may increase pedestrian traffic at crossings, and elsewhere along rail corridor rights-of-way. Working with CPUC staff early in project planning will help project proponents, agency staff, and other reviewers to identify potential project impacts and appropriate mitigation measures, and thereby improve the safety of motorists, pedestrians, railroad personnel, and railroad passengers.

The proposed project includes the construction of grade-separated crossings of railroad tracks. Commission approval is required to modify an existing highway-rail crossing or to construct a new crossing. Please contact Marvin Kennix, (916) 324-7135, for further information about the approval process. 20.1

Very truly yours,

Daniel Kevin
Regulatory Analyst
Consumer Protection and Safety Division

Response to Comment 20 – Public Utilities District

COMMENT 20.1. This comment recommends the AME DEIR be submitted to the California Public Utilities Commission for approval as required when modifying existing highway-rail crossing or to constructing new crossings.

RESPONSE 20.1. As required, the project sponsor will seek California Public Utilities Commission approval for construction of grade-separated crossings of railroad tracks. This is a procedural issue and does not require the modification of the Recirculated Draft EIR.

Comment 21

MERCED COUNTY

DEPARTMENT OF COMMERCE, AVIATION AND ECONOMIC DEVELOPMENT

John F. Fowler
Director

2507 Heritage Drive
Atwater, CA 95301
(209) 385-7686
(209) 383-4959 Fax
www.co.merced.ca.us

Equal Opportunity Employer

April 30, 2008

Merced County Association of Governments
ATTN: Jesse Brown, Executive Director
369 West 18th Street
Merced, CA 95340

Subject: Comments on Draft EIR for Atwater-Merced Expressway Project

Dear Mr. Brown:

Please accept the following comments from the County of Merced, specifically the Department of Commerce, Aviation and Economic Development (CAED) and the Public Works Department Special Programs Office regarding the Draft Environmental Impact Report (EIR) for the Atwater-Merced Expressway Project.

Page 4.2-2, CASTLE AIR FORCE BASE, Revise second paragraph to read as follows:
Following closure of Castle Air Force Base, reuse activities were conducted through the Castle Joint Powers Authority (JPA), made up of the City of Atwater, the City of Merced, and Merced County. In 1996, the JPA certified an EIR and adopted the Castle Reuse Plan. This Reuse Plan continues to guide land use and development activities at Castle. The County of Merced assumed direct control of Castle in 2000. In 2006, Merced County adopted a Redevelopment Plan for Castle and was granted title to the facility. In 2007, the County certified a Subsequent EIR for the Castle Redevelopment Plan. (changes identified by italics) 21.1

Revise third paragraph to amend the last sentence as follows:
Alignment 1B is relatively distant from existing development at Castle but is within an area planned for commercial development as set forth in the Castle Reuse Plan. The Reuse Plan and Redevelopment Plan did not contemplate the acreage that would be lost within the Castle Urban Boundary by Alignment 1B. This alignment is also within the primary landing pattern for the airport. 21.2

Figure 4.2-2 – Please amend "SPZ" to "Castle Special Planning Zone (SPZ)." 21.3

Figure 4.2-3 – This figure is incorrect. Please amend to identify Castle as a designated "Specific Urban Development Plan Boundary – Castle Reuse Plan." 21.4

Page 4.4-2, VISUAL SEGMENT 1, Second full Para, Third Sentence, Change to read: "The air base site is presently undeveloped *(but is in an area planned and designated for commercial development)* in the southern portion, which is near proposed Alternative 1A and which is crossed by Alternative 1B." *(changes identified by italics)* 21.5

Page 4.10-4, FORMER CASTLE AIR FORCE BASE, Second Sentence, Change to read: "This site is a federal Superfund site with known soil and groundwater hazards *(the ground affected by Alternative 1B was a former landfill and leach field). (changes identified by italics)* 21.6

Page 4.10-10, MERCED COUNTY AIRPORT LAND USE COMPATIBILITY PLAN, Policy 4.3.2 c), Add new item as follows: "2) Based upon user requests/requirements, Castle Airport has the intent to upgrade the Instrument Landing System (ILS) from a Category I to either a Category II or III. Consideration must be given for this eventuality by reviewing the FAA site survey and perhaps initiating a more specific survey of the location." 21.7

Page 4.10-12, 4.10.3 POLICY CONSISTENCY ANALYSIS, Last Para, Second Sentence, change to read: "The project *could/may* create a new road to *Castle Commerce Center*, which is in compliance with Goal SF-12, and Policy SF-12.1." *(changes identified by italics)* 21.8

Pages 7-6 and 7-7, Table 7-1 Comparison of Potentially Significant Impacts of Alternatives to Project, Table Headings, Third Column - Both Pages, Change "Alternative 2A" to Read "Alternative *1B.*" 21.9

As a general comment, it is not clear if any dollar value has been attached to the property on Castle for Alternative 1B. Under the terms of the property transfer from the Air Force a value must be reported in any disposition. Likewise, the value must be reported to the Redevelopment Agency. 21.10

Sincerely,

John F. Fowler
Director

Robert E. Smith
Special Programs Director

CC: James Brown, Assistant County Executive Officer
Paul Fillebrown, Public Works Director
Robert Gabriele, County Counsel
Robert Lewis, Development Services Director

Response to Comment 21 – Merced County Department of Commerce, Aviation, and Economic Development

COMMENT 21.1. This comment requests a text revision of the second paragraph on page 4.2-2 of the AME DEIR to read as follows: *Following closure of Castle Air Force Base, reuse activities were conducted through the Castle Joint Powers Authority (JPA), made up the City of Atwater, The City of Merced, and Merced County. In 1996, the JPA certified an EIR and adopted the Castle Reuse Plan. This Reuse Plan continues to guide land use and development activities at Castle. The county of Merced assumed direct control of Castle in 2000. In 2006, Merced County adopted a Redevelopment Plan for Castle and was granted title to the facility. In 2007, the County certified a Subsequent EIR for the Castle Redevelopment Plan.* (Changes identified by *italics*.)

RESPONSE 21.1. Page 4.2-2 of the Recirculated Draft EIR includes this requested text.

COMMENT 21.2. This comment requests a text revision of the third paragraph on page 4.2-2 of the AME DEIR to read as follows: *Alignment 1B is relatively distant from existing development at Castle but is within an area planned for commercial development as set forth in the Castle Reuse Plan.* The Reuse Plan and Redevelopment Plan did not contemplate the acreage that would be lost within the Castle Urban Boundary by Alignment 1B. This alignment is also within the primary landing pattern for the airport. (Changes identified by *italics*.)

RESPONSE 21.2. Page 4.2-3 of the Recirculated Draft EIR includes this requested text.

COMMENT 21.3. This comment requests a text revision to amend "SPZ" to "Castle Special Planning Zone (SPZ)."

RESPONSE 21.3. Based on this comment, Figure 4.2-2 has been revised as shown in Chapter 3.0, Errata and Changes, of this Final EIR.

COMMENT 21.4. This comment requests a figure revision to Figure 4.2-3 to identify Castle as a designated "Specific Urban Development Plan Boundary – Castle Reuse Plan."

RESPONSE 21.4. Figure 4.2-3 identifies zoning for the cities of Atwater and Merced. Although the former Castle Air Force Base is near the City of Atwater, it is not within City boundaries. Castle Air Force Base is designated as the Castle Specific Urban Development Plan (SUDP) area within Merced County. The Castle SUDP is identified in Figures 4.2-1 and 4.2-2, which presents the Merced County land use and zoning designations. As the Castle SUDP is not a designated entity within the cities of Atwater and Merced, revisions to Figure 4.2-3 of the Recirculated Draft EIR are not necessary.

COMMENT 21.5. This comment requests a text revision to amend page 4.2-2, second full paragraph, third sentence, to read as follows: "The air base site is presently undeveloped *(but is in an area planned and designated for commercial development)* in the southern portion, which is near proposed Alternative 1A and which is crossed by Alternative 1B." (Changes identified by *italics*.)

RESPONSE 21.5. Pages 4.4-1 and 4.4-2 of the Recirculated Draft EIR discuss existing visual conditions in Visual Segment 1. Although as noted in this comment, the southern portion of the air base site is planned and designated for commercial development, this is planning information and does not reflect the existing visual condition of this area. The existing visual condition of the southern portion of the air base is undeveloped. No changes to the Recirculated Draft EIR are necessary.

COMMENT 21.6. This comment requests a text revision to amend page 4.10-4 to read: "This site is a federal Superfund site with known soil and groundwater hazards *(the ground affected by Alternative 1B was a former landfill and leach field*). (Changes identified by *italics*.)

RESPONSE 21.6. Page 4.10-4 of the Recirculated Draft EIR includes the requested text.

COMMENT 21.7. This comment requests a text revision to Policy 4.3.2 c), Add new items as follows: *2) Based upon user requests/requirements Castle Airport has the intent to upgrade the Instrument Landing System (ILS) from a Category I to either a Category II or III. Consideration must be given for this eventuality by reviewing the FAA site survey and perhaps initiating a more specific survey of the location.* (Changes identified by *italics*.)

RESPONSE 21.7. Page 4.10-11 of the Recirculated Draft EIR includes the requested text.

COMMENT 21.8. This comment requests a text revision to amend page 4.10-12, last paragraph, second sentence, to read: "The project *could/may* create a new road to *Castle Commerce Center*, which is in compliance with Goal SF-12, and Policy SF-12.1." (Changes identified by *italics*.)

RESPONSE 21.8. Page 4.10-12 of the Recirculated Draft EIR states that the project may create a new road to the Castle Commerce Center, which is in compliance with Goal SF-12, and Policy SF-12.1.

COMMENT 21.9. This comment requests a text revision to the table headings in the third column of Table 7-1, to change "Alternative 2A" to read "Alternative 1B."

RESPONSE 21.9 Table 7-1 on page 7-6 of the Recirculated Draft EIR includes this requested revision.

COMMENT 21.10. This comment asserts it is not clear if any dollar value has been attached to the property on Castle for Alternative 1B. Under the terms of the property transfer from the Air Force a value must be reported in any disposition. The comment requests that the value be reported to the Redevelopment Agency.

RESPONSE 21.10. The dollar value of the Alternative 1B area in the former Castle Air Force Base has not been determined at this time. Calculation of the dollar value of this property would be a procedural part of the property transfer and is not related to physical environmental impacts on the environment. No changes to the Recirculated Draft EIR are necessary.

.

Comment 22

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

M e m o r a n d u m

Flex your power!
Be energy efficient!

To: KOME AJISE
District 10 Director

Date: April 16, 2008

File: 10-0G440

From: Juergen Vespermann
Senior Environmental Planner
San Joaquin Valley Analysis Branch

Subject: Atwater-Merced Expressway DEIR Comments

The following comments were collected from Caltrans staff for the Draft Environmental Impact Report for the Atwater-Merced Expressway (10-0G440).

Chapter 3.5, Page 3-5 (last paragraph)
The Administrative Draft comment from Caltrans advised that the text should discuss Caltrans' facilities and roles in project review and approval (i.e. permits, coordination). The DEIR does not expand on this issue. Please add more information about Caltrans' facilities and roles in project review and approval. 22.1

Chapter 4.3, Page 4.3-11
Regarding the type of businesses that were identified on Table 4.3-7. The consultant writes, *the discussion focuses around the need to relocate businesses once a final alignment has been selected.* This discussion is not found in this section. 22.2

Chapter 4.4, Page 4.4-3
Figure 4.4-3B, Viewpoint C: When comparing this photo to Figure 4.4-1 Map Key Point C it was noticed that the arrow is still pointed in the wrong direction and is located in the wrong spot. The Map Key Point C leads one to think the tanks are located on the north side of SR 99 rather than the south side. The photo appears to be taken from the frontage road as it parallels Buhach Road before the frontage road changes direction and parallels SR 99. Therefore, the Map Key Point C arrow should be pointing east and relocated to appropriately show it's approximate photo location and pointed in the direction of the view (the tanks are south of SR 99 and east of Buhach Road…see aerial photo figure 4.12-1). 22.3

Chapter 4.4, Page 4.4-24 (last bullet, cobblestone aesthetic treatment on soundwalls)
Cobblestone treatments are not being used on the new soundwalls along SR 99 in this area. Instead, new soundwalls in this area receive aesthetic treatments such as rolling hills or distant mountain patterns. The text should be changed to reflect this. 22.4

Chapter 4.5, Page 4.5-23
The Admin DEIR comment advised that upstream/downstream be replaced with directions such as eastbound and westbound. This comment was not incorporated into the DEIR. Please make the recommended changes. 22.5

Chapter 4.5, Page 4.5-43
Regional perspective is minimally mentioned (one sentence). If the project is regionally important, it needs to be explained in the text. 22.6

Chapter 4.5, Table 4.5-16
In the Admin DEIR comments, Caltrans advised that the tables be changed to show all study intersection results. No change has been made to the tables in the DEIR. 22.7

Chapter 4.7, Page 4.7-7
No changes to this paragraph were made as was requested. 22.8

Chapter 4.9, Page 4.9-10
If MCAG is administrating the construction contract, MCAG would not be able to use the Caltrans Statewide NPDES permit for the work that is proposed within Caltrans right of way. 22.9

Chapter 4.11, Page 4.11-1
Per the Department's Stormwater Management Plan (SWMP) dated June 2007, this project would be required to follow Stormwater procedures in accordance with Sections 5 and 6 of the SWMP for work proposed within state jurisdiction. The project sponsor (MCAG) shall prepare a Stormwater Pollution Prevention Plan (SWPPP) per the Department's guidelines and shall file a Notice of Intent (NOI) to obtain coverage under the General Permit for discharges of stormwater associated with construction activity. 22.10

Chapter 4.14, Page 4.14-8
The text at the top of page 4.14-8 is unchanged from the Admin DEIR. There is no mention of moving the roadway alignment away from the fire station and providing a paved break in the median. The addition of special signals is the only issue discussed. Also, no additional figures are found. 22.11

Chapter 5
No text was found that would explain how cumulative methodology accounted for other projects in the General Plan buildouts in the area. Page 5-1, paragraph 2 suggests that there are development projects, however only the UC Merced Campus is discussed. If there are no specific development proposals in the area, this should have been stated as well. 22.12

Chapter 4.12
In the ASR, the Ethnographic Section is still located after the Historical Section. Nothing has been changed as requested. 22.13

Chapter 4.12, Page 4.12-12
Admin DEIR comments suggested that the paleontology section should be separated from the cultural section by using subheadings. The paleontology section was not separated in the DEIR. 22.14

Response to Comment 22 – California Department of Transportation

COMMENT 22.1. This comment reiterates an administrative Draft comment from Caltrans which advised that the text should discuss Caltrans' facilities and roles in the project review and approval.

RESPONSE 22.1. As stated on page 3-5 of the Recirculated Draft EIR, the project sponsor will coordinate with Caltrans to determine the necessary permits for construction of the project. For those improvements to be constructed within existing or proposed State right-of-way, the project sponsor will coordinate and develop a Cooperative Agreement with Caltrans that will clearly define the roles and responsibilities of each party during final design and construction. For those portions outside the State right-of-way, the project sponsor will coordinate similarly with the County of Merced.

COMMENT 22.2. This comment indicates that a discussion of the relocation of businesses, as identified in Table 4.3-7 of the DEIR, is not found within the DEIR.

RESPONSE 22.2. Pages 4.3-10 through 4.3-13 and Table 4.3-7 of the Recirculated Draft EIR document the properties (specifically the buildings and structures) that would be displaced with Alternative 1A or Alternative 1B, including businesses. The information provided in Tables 4.3-7, 4.3-8, and 4.3-9 of the Recirculated Draft EIR represent a preliminary calculation of relocations. Every attempt has been made to accurately determine affected structures to provide the most up to date information available, at of the time of publication of the Recirculated Draft EIR (November 17, 2008). The specific number of homes and businesses affected by development of Alternative 1A or Modified Alternative 1B may slightly decrease once the final alignment is selected (the preliminary estimates are thought to be conservative) but are not anticipated to substantially increase.

Pages 4.3-13 and Table 4.3-9 of the Recirculated Draft EIR document the potentially displaced businesses associated with Alternative 1A and Modified Alternative 1B. Page 4.3-16 of the Recirculated Draft EIR also indicates that displacement of residences and/or businesses would require compliance with the State of California's Relocation Assistance Act. As such, the project sponsor would provide relocation benefits to displaced residents and businesses, including financial compensation.

COMMENT 22.3. This comment requests a revision to Figure 4.4-1 to change as follows: When comparing this photo to Figure 4.4-1 Map Key Point C it was noticed that the arrow is still pointed in the wrong direction and is located in the wrong spot. The Map Key Point C leads one to think the tanks are located on the north side of SR 99 rather than the south side. The photo appears to be taken from the frontage road as it parallels Buhach Road before the frontage road changes direction and parallels SR 99. Therefore, the Map Key Point C arrow should be pointing east and relocated to appropriately show it's approximate photo location and pointed in the direction of the view (the tanks are south of SR 99 and east of Buhach Road…see aerial photo figure 4.12-1).

RESPONSE 22.3. Figure 4.4-1 of the Recirculated Draft EIR includes this recommended revision.

COMMENT 22.4. This comment indicates a discrepancy in the AME DEIR statement about cobblestone treatments to be used on the new soundwalls along SR 99 in this area. The comment indicates that the new soundwalls in this area receive aesthetic treatments such as rolling hills or distant mountain patterns, and requests a text revision to reflect this information.

RESPONSE 22.4. Page 4.4-19 of the Recirculated Draft EIR includes this requested revision.

COMMENT 22.5. The comment advises that upstream/downstream be replaced with directions such as eastbound and westbound.

RESPONSE 22.5. Section 4.5, Traffic and Transportation, of the Recirculated Draft EIR was searched and no references to upstream/downstream were found. As a result no changes to the Recirculated Draft EIR are necessary.

COMMENT 22.6. This comment asserts the AME DEIR inadequately addressed the regional perspective of the project.

RESPONSE 22.6. The Recirculated Draft EIR states at page 4.5-44 that "implementation of AME would result in improved traffic operation at the majority of the study intersections, when compared to 2030 No Build conditions. This would benefit regional transportation by reducing traffic congestion and decreasing travel times during peak hours." This statement is based on the results of the traffic analysis which studied a substantial portion of State Route 99, State Route 59 and State Route 140 in the Merced and Atwater region. Table 4.5-8 of the Recirculated Draft EIR provides a list of the study intersections within Merced County and the cities of Atwater and Merced. The analysis of these 27 regionally located study intersections on state highways and local intersections indicated that implementation of the project would reduce traffic congestions within areas Unincorporated Merced County and the City of Atwater, as well as improving regional access between the City of Merced. Finally, the Recirculated Draft EIR on page 4.5-24 states that the AME project has been included in the Merced County Regional Transportation Plan (RTP) as well as the Atwater General Plan Transportation Element. As a result, Section 4.5, Traffic and Transportation, of the Recirculated Draft EIR adequately analyzed the traffic effects of the AME project on a regional level.

COMMENT 22.7. This comment reiterated an Administrative DEIR comment from Caltrans, which requested that Table 4.5-9 be revised to show all study intersection results.

RESPONSE 22.7. Tables 4.5-9 includes the correct number of intersections. In addition, the assumptions regarding local roadway improvements that would occur independent of the AME project by 2030 are shown in Table 4.5-13a in the Recirculated Draft EIR.

COMMENT 22.8. No changes to this paragraph were made as was requested.

RESPONSE 22.8. The comment refers to paragraph 3 on page 4.7-7 and that this paragraph is confusing. The paragraph in question clearly explains the San Joaquin Valley Air Pollution Control District's rule and mitigation approach to reducing NO2 and PM10 emissions from construction activities. No changes to the Recirculated Draft EIR are necessary.

COMMENT 22.9. This comment indicates that if MCAG is administrating the construction contract, MCAG would not be able to use the Caltrans Statewide NPDES permit for the work that is proposed within Caltrans right-of-way.

RESPONSE 22.9. The text on page 4.9-7 of the Recirculated Draft EIR and mitigation measures HWQ-1a through 1c document that, although the project is to be built within Caltrans specifications, it will need to apply for a separate Individual NPDES Stormwater permit, or multiple permits, as opposed to being covered under the Caltrans' Statewide Permit.

In addition, page 4.9-8 of the Recirculated Draft EIR documents that the project sponsor (MCAG) shall prepare a Notice of Intent (NOI) for construction work within the State right-of-way and for work done within County and/or City's jurisdiction. Design requirements of facilities built within the State right-of-way, per the Department's regulations, will be adhered to.

COMMENT 22.10. This comment indicates that per the Department's Stormwater Management Plan (SWMP), dated June 2007, the project would be required to follow Stormwater procedures in accordance with Sections 5 and 6 of the SWMP for work proposed within state jurisdiction. The project sponsor (MCAG) shall prepare a Stormwater Pollution Prevention Plan (SWPPP) per the Department's guidelines and shall file a Notice of Intent (NOI) to obtain coverage under the General Permit for discharges of stormwater associated with construction activity.

RESPONSE 22.10. Pages 4.9-14 and 4.9-15 of the Recirculated Draft EIR document that that the SWPPP will include Best Management Practices (BMPs), such as pollution prevention BMP, permanent treatment BMP, maintenance BMP, and construction site BMP requirements, per the Caltrans' Project Planning Design Guide and stormwater guidance manuals.

Also see Response 22.9 above, and pages 4.9-14 through 4.9-16 of the Recirculated Draft EIR which address this issue and require the preparation of a SWPPP and filing of an NOI for construction activities.

COMMENT 22.11. This comment reiterated an Administrative DEIR comment from Caltrans, which requested the revision of the text at the top of page 4.14-8 to mention the moving of the roadway alignment away from the fire station and providing a paved break in the median.

RESPONSE 22.11. As indicated on page 4.14-8 of the Recirculated Draft EIR, the Merced County Fire Department was consulted regarding the AME projects, its affects on emergency service response times as well as fire equipment egress and access from Station 82, which would be located along the AME project. Mitigation Measure PS-1, at page 4.14-9 of the Recirculated Draft EIR was included at the request of the Merced County Fire Department to address concerns regarding the need to cross intersections on the AME quickly to respond to emergencies. Page 4.14-9 of the Recirculated Draft EIR includes a discussion of moving the AME roadway alignment away from the fire station and adding a paved break in the median. These features, in addition to the department-controlled signals, would allow the Merced County Fire Department to safely enter and exit the station and meet response time goals.

Figure 4.14-2, Fire Station Access, also illustrates the proposed access from the fire station to the modified portion of Gurr Road and to the AME.

COMMENT 22.12. This comment asserts the inadequacies of the AME DEIR in regards to explaining how cumulative methodology accounted for other projects in the General Plan build-outs in the area.

RESPONSE 22.12. The Recirculated Draft EIR addresses cumulative land use assumptions for this analysis through use of the MCAG 2030 travel model. The 2030 MCAG model land use assumptions reflect the most recent regional growth forecasts approved by MCAG and its member agencies. The basis of MCAG's growth forecasts are each jurisdiction's adopted General Plan build-out assumptions. To ensure that the growth forecast adequately reflects 2030 conditions, MCAG constrains countywide growth based on Department of Finance (DOF) growth projections for 2030. Hence, the population, housing, and employment forecasts are consistent with the planned growth in the most recently approved general plans of MCAG member cities and the County. These growth forecasts project that population growth in the Atwater-Merced region will range from 53 to 60 percent though 2030. To ensure the adequacy of how the County's adopted regional growth forecast is reflected in the MCAG 2030 model, i.e., sub-allocation of housing and employment to individual traffic analysis zones, several large-scale developments such as the UC Merced (assumed at 70 percent capacity by 2030), University Community, Castle Air Force Base, and the Riverside Motorsports Park were checked and verified.

Page 5-1 of the Recirculated Draft EIR documents the methodology used to determine cumulative impacts.

COMMENT 22.13. In the ASR, the Ethnographic Section is still located after the Historical Section. Nothing has been changed as requested.

RESPONSE 22.13. The comment is referring to a technical report prepared for the project and not the Recirculated Draft EIR section. The Recirculated Draft EIR section on cultural resources (Section 4.12) discusses paleontological, archaeological, and historic-era resources in that order.

COMMENT 22.14. Administrative DEIR comments suggested that the paleontology section should be separated from the cultural section by using subheadings. The paleontology section was not separated in the DEIR.

RESPONSE 22.14. In Section 4.12, Paleontological and Cultural Resources, of the Recirculated Draft EIR, paleontological context, surveys and resources are discussed separately and each discussion is preceded by a heading clearly labeling the discussion as relating to paleontology. No changes to the Recirculated Draft EIR are necessary.

Draft Environmental Impact Report ATWATER-MERCED EXPRESSWAY PROJECT State Clearinghouse Number 2006081138

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Atwater-Merced Expressway Project EIR
Merced County Association of Governments
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May 2, 2008 Via: e-mail

Re: Draft Environmental Impact Report ATWATER-MERCED EXPRESSWAY PROJECT State Clearinghouse Number 2006081138

We are reattaching the December 19, 2006 letter written to the Merced Board of Supervisors by Marsha M. Burch along with four MCAG maps showing the entire expressway project. We repeat that the adoption of Expressway Standards in Merced County requires CEQA analysis separate from the Board's past approval of the Campus Parkway, its immanent approval of the Atwater Merced Expressway and its planned approval of the Bellevue Expressway. 23.1

In the December 19, 2006 hearing on the Campus Parkway, the Board was informed by staff that 1) the expressway standard was "just a name" (Nicholson) and, 2) CEQA analysis had been performed on the adopted Expressway Standard within the CEQA analysis of the Campus Parkway (Rough). Based on this contradictory testimony, the Board passed the Expressway Designation for the Campus Parkway, the first of the three phases of the UC Merced loop around the City of Merced. It did not pass the Expressway Designation for the entire county or for AME or the Bellvue Expressway phases of the UC Merced loop road. 23.2

This is the essence of piecemealing of a single project, the UC Merced loop road, and failure to analyse its full environmental (and economic) impacts under CEQA.

The Environmental Checklist in the DEIR for the AME is inadequate, defers mitigation, does not provide adequate monitoring. This project is going to be a disaster for the habitats of one or more federally endangered species. 23.3

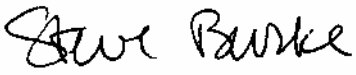
AME, described by Supervisor Kelsey on April 1, 2007 as the "northern access to UC Merced," should be analyzed in conjunction with the CEQA/NEPA environmental review of the UC Merced campus, the separate CEQA analysis of the campus by the County, within the context of the Merced County General Plan Update, and in coordination of the City of Merced General Plan on the Bellvue Corridor. 23.4

Where is the cost-sharing with UC Board of Regents for this piecemealed project, entirely for the benefit of UC Merced to the detriment of the economy of the City of Merced? Is that part of the $200-million in off-site impacts that UC Merced stated in its amicus brief to the Marina case in state Supreme Court (letter enclosed). 23.5

attached are documents related to the project:

- Our comment letters on the recently approved University Community Plan (over which we have since filed litigation).
- Our groups' initial comment letter (written by Anthony Cresap, Esq.) on the Draft environmental review for both the campus, and the UCP; submitted in 2001, but still very relevant as circumstances are largely the same. File name is "SJRRC-POW.pdf".
- Two filings in the litigation involving CSU Monterey, which is now under review by the California Supreme Court: our amicus brief, and the letter written to the Supreme Court by UC counsel James Holst (the letter is the JPGs titled "UC, Marina"). The case is concerned with who pays for certain infrastructure - traffic-related, and fire & police - associated with school projects. CSU, and UC, say they don't have to.
- Re: Proposal -- To amend the Merced County General Plan Circulation Chapter (Chapter II) by establishing an expressway standard and designate an expressway alignment, known as “Campus Parkway”, east of the City of Merced from Coffee Street to Yosemite AvenueCampus Parkway will be approximately a 4.5-mile route; and 2006 Cycle IV General Plan Amendment: General Plan Text Amendment No. GPTA06-001-Campus Parkway.
- Maps





Lydia M. Miller Steve Burke

Response to Comment 23 – San Joaquin Raptor/Wildlife Rescue Center and Protect Our Water

San Joaquin Raptor/Wildlife Rescue Center and Protect Our Water submitted a number of attachments with their letter. The attachments can be found in Appendix B.

COMMENT 23.1. This comment refers to a previous letter dated December 19, 2006, wherein Ms. Marsha A. Burch challenges a proposal to amend the Merced County General Plan.

RESPONSE 23.1. This comment and attached letter dated December 19, 2006 is noted. No changes are required.

COMMENT 23.2. This comment refers to a December 19, 2006 meeting held by the Board of Supervisors, wherein the Board passed the Expressway Designation for the Campus Parkway. The comment further alleges that at the Board meeting, the Board did not pass the Expressway Designation for the AME Project. The comment further states the AME project, as it is currently proposed, is a form of "piecemealing" of a single project, specifically, the UC Merced Loop Road.

RESPONSE 23.2. This interpretation of the Board's approval is noted. MCAG does not dispute that the AME Project is subject to CEQA review separate from the Board's past approval of the Campus Parkway. The AME Project is a separate Project and mandates separate CEQA analysis. This is further evidenced by the fact that the Campus Parkway EIR does not contain analysis of the AME Project.

"Piecemealing" occurs when one project is divided into several smaller projects and environmental review is conducted on some or all of the parts, rather than the whole. The AME project is not piecemealing. The AME project is identified as a separate, stand alone, regionally significant project in the most current Regional Transportation Improvement Program for Merced County (adopted January 18, 2007). When the environmental review for the AME DEIR commenced, the environmental review for the Campus Parkway project had already gone forward and been completed. Further, the AME Project and the Campus Parkway have different lead agencies and involve different jurisdictional municipalities.

While it is true the AME project and the Campus Parkway project are part of a planned regional transportation network as set forth in the Merced Regional Transportation Improvement Plan, it is not piecemealing to study the environmental effects of projects that make up this regional transportation network as long as each project has independent utility, which in this case both the AME and Campus Parkway projects do, given both provide separate transportation and outlet services to help facilitate the various needs of the different surrounding areas.

COMMENT 23.3. This comment asserts the Environmental Checklist in the AME DEIR is inadequate, defers mitigation, and does not provide adequate monitoring. The commenter asserts that the proposed project is going to be a disaster for the habitats of one or more federally endangered species.

RESPONSE 23.3. Impacts to habitats and all federally endangered species, including monitoring and mitigation measures, are discussed fully and adequately in the Recirculated Draft EIR in Section 4.11, Biological Resources and Wetlands. The assertion of impending "disaster for the habitats of one or more federally endangered species," is an unsubstantiated opinion of the commenter. The commenter also has failed to identify the alleged instances of deferred mitigation. No further response is necessary at this time.

COMMENT 23.4. The comment refers to an alleged previous statement made by Supervisor Kelsey on April 1, 2007, describing the AME Project as the "northern access to UC Merced." The comment asserts that the AME Project should, therefore, be analyzed in conjunction with the environmental review needed for the UC Merced Campus. This comment also suggests that the project should be analyzed in conjunction with the CEQA/NEPA environmental review of the UC Merced campus and in coordination of the City of Merced General Plan on the Bellevue corridor.

RESPONSE 23.4. The Recirculated Draft EIR does not refer to the project as being the "northern access to UC Merced." Similarly, the Project is not part of the other referenced projects, each of which should be subject to their own CEQA assessment. It does not adopt the opinions or statements made by Ms. Kelsey. No further response is needed at this time.

CEQA requires an evaluation of a project's contribution to cumulative environmental impacts from other nearby/related projects. Chapter 5, Cumulative Impacts, of the Recirculated Draft EIR addresses the cumulative impacts from the project associated with the UC Merced campus and Bellevue corridor projects. No changes to the Recirculated Draft EIR are necessary.

COMMENT 23.5. This comment questions if there is cost-sharing with the UC Board of Regents and if it is part of the $200-million in off-site impacts that UC Merced stated in its amicus brief to the Marina case in State Supreme Court.

RESPONSE 23.5. The AME project is not an off-site mitigation for UC Merced. As described in Sections 3.2 and 3.3 of the Recirculated Draft EIR the AME project is identified in the Regional Transportation Plan for Merced County to accommodate existing and anticipated growth and travel demand.

Valley Land Alliance
P.O. Box 102
Cressey, CA 95312
209 386-3572

May 2, 2008

Merced County Association of Governments
Attn: Mr. Jess Brown, Executive Director
369 West 18th Street
Merced, California 95340
jesse.brown@mcagov.org

Re: Atwater-Merced Expressway Draft Environmental Impact Report; State Clearinghouse Number 2006081138

Via: Email, May 2, 2008

Dear Mr. Brown,

We are writing to object to the Atwater Merced Expressway and do not view Alternatives 1A or 1B as acceptable for the following reasons:

1. Lack of coordination with the Merced County General Plan. Merced and Atwater City General Plans, and the Community plans in unicorporated Merced County:

The AME will primarily impact lands in Merced County. Merced County is currently in the process of updating its general plan.

24.1

This project will fundamentally shape future growth and therefore should not be considered as a separate special project that is amended to the General Plan.

Both alternatives direct growth in a specific direction – without any coordination with local general plans and in the case of agriculture, in violation of the stated goals to preserving agriculture. Contrary to the report's conclusions, we believe that this expressway will contribute to urban blight in that it serves yet to be developed regions to the North of Merced and adjacent to the University of California.

2. Impact to Agriculture and Natural Resources:

a. Agriculture:

As indicated in the introduction to the Section on Land Use and Agriculture: "Most of the land within the project study area is used for agriculture …"

The impacts to Agriculture contradict the very clearly stated goals of the Merced County General Plan – Goal #7. Yet there is no evidence offered to support the statement [that]: "the project is consistent with the relevant policy under this goal that allows for the conversion of agricultural land *when conversion is* justified *and encourages conversion to occur with minimal impacts to valuable farmland."* 24.2

In addition, there is no analysis regarding why this particular project [whether in this section or in the section referenced (4.2)] is justified – especially when this is offered as project independent of the Merced City General Plan, the Atwater General Plan, the Merced County General Plan, and the Community Plans.

b. Agricultural Mitigation:

There is no written County or city policy within the jurisdictions for this project to mitigate for the permanent loss of agricultural land – whether the direct loss referred to in Table 4.2-3 or those associated with the long term growth inducing impacts of this project. We also do not agree that the indirect impacts associated to this project are of a temporary nature. Mitigation measures are referenced in the Cumulative Impacts section (5-4) under the Land Use and Agriculture category; however, none were discussed in Section 4.2. Moreover, there is no County wide mitigation policy that would ensure that the loss of agricultural lands would be truly mitigated. 24.3

An in-lieu fees for mitigation anticipated for this project would not be sufficient to capture the loss to agricultural lands.

c. The Williamson Act:

The only analysis regarding the Willamson Act are on lands that are currently under contract in the project area (5 parcels are noted on page 4.2-18). Moreover, the EIR ignores the consequence of taking land out of the Williamson Act -- namely the tax benefits accrued to land previously contracted will be extinguished – increasing the likelihood that this land will be converted to non-agricultural uses. Finally, the EIR fails to analyze the impact to the agricultural preserve. 24.4

d. Natural Resources:

There is only a superficial and cursory analysis of impacts to threatened or endangered species and habitat in the area. Mitigation measures do not address the long term impacts to these species once the project is complete and new growth is directed in this direction. 24.5

3. Growth Inducing Impacts:

The population and projection data that this EIR relies do not accurately reflect the current context. The population growth cited is based on a speculative marker that predated the current housing surplus. These figures are no longer appropriate. 24.6

Moreover, we do not agree with the conclusion that: "… the AME project in combination with other projects listed in Table 5-1 would not directly result in cumulative population and housing impacts." On the contrary, this will direct future growth by virtue of its existence. 24.7

Alternatives 1A and 1B will pass through just over 360 acres of agricultural lands. As stated in the EIR, acreage that would be divided into properties below the 20 acre minimum required by the General Plan, "would need to be rezoned, most likely as Agricultural Residential." While this rezoning does not prohibit agricultural, this further division of agriculture land would have the permanent impact of further converting agricultural lands to ranchettes under an A-R rezone—further contributing to the urbanization of ag land. 24.8

We do not view the Regional Transportation Plan as a substitute for the Merced County General Plan. Nor do we view this as a plan that explains away the growth inducing impacts associated to this project. 24.9

4. Hydrology and Water Quality:

As noted in figure 4.9, Alternatives 1A and 1B encompass a floodplain. In addition, this project would convert 90 acres of pervious surface to impervious surface. This does not include the land that will be disrupted to create the AME, nor does it include the land that will be converted to urban uses as a result of its creation. The impacts to drainage/flooding, storm water run-off, groundwater recharge, and the potential contamination to groundwater associated with this project are significant and not comprehensively addressed in this EIR. 24.10

Sincerely,

Maureen McCorry et al., and on
Behalf of Valley Land Alliance
P.O. Box 102
Cressey, CA 95312

Response to Comment 24 – Valley Land Alliance

COMMENT 24.1. The Comment refers to the current updating of the Merced County General Plan. The comment asserts that both alternatives to the project do not coordinate with the County of Merced's General Plan. Further, the comment asserts that the AME will contribute to urban blight.

RESPONSE 24.1. Please see Response 19.3. Additionally, the Project is proposed by a separate agency, the Merced County Association of Governments, and as such it is lawfully a "separate" project.

Further, impacts to urban blight operations are discussed fully and adequately in the Recirculated Draft EIR in Sections 4.2.4 and 4.5. No further response is necessary at this time.

COMMENT 24.2. This comment asserts the AME DEIR is inadequate in regards to addressing the existing agricultural operations within the project study area.

RESPONSE 24.2. Impacts to existing Agricultural operations are discussed fully and adequately in the Recirculated Draft EIR in Section 4.2, Land Use and Agriculture. No further response is necessary at this time.

COMMENT 24.3. This comment asserts the AME DEIR is inadequate in regards to addressing the existing agricultural operations within the project study area. More specifically, the commenter indentifies that lack of a County policy that would ensure that the loss of agricultural lands would be mitigated.

RESPONSE 24.3. Refer to Response 13.4. Also refer to Response 19.2. With regard to the AME project, MCAG as the Lead Agency under CEQA can adopt specific mitigation measures to further reduce this less-than-significant impact.

COMMENT 24.4. This comment asserts the AME DEIR is inadequate in regards to addressing the impacts to lands currently under contract by the Williamson Act.

RESPONSE 24.4. See Response 19.1. Impacts to land currently affected by Williamson Act contracts are discussed fully and adequately in the Recirculated Draft EIR in Section 4.2, Land Use and Agriculture.

COMMENT 24.5. This comment asserts the AME DEIR is inadequate in regards to its analysis of impacts to threatened or endangered species and habitat in the area.

RESPONSE 24.5. Refer to Response 13.10.

COMMENT 24.6. This comment suggests the population and projection data that the AME DEIR relies upon does not accurately reflect the current context due to the fact that the population growth cited is based on a speculative marker that predated the current housing surplus.

RESPONSE 24.6. Past and present information regaring population and housing was obtained from the US Census and California Department of Finance. Forecasts of future population in Merced County, City of Atwater and Ciity of Merced were obtained from MCAG 2007 Regional Transportation Plan. MCAG is the regional planning authority for Merced County and their projections of future population within the project area are considered the most accurate and appropriate for use in this Recirculated Draft EIR.

COMMENT 24.7. This comment disagrees with the AME DEIR's conclusion that: "… the AME project in combination with other projects listed in Table 5-1 would not directly result in cumulative population and housing impacts."

RESPONSE 24.7. Refer to Response 13.11. Also refer to Responses 5.1 and 5.4, which indicate that the AME project was found to be consistent with long-term planning in the region, and any growth associated with the AME Project has, therefore, been previously anticipated.

COMMENT 24.8. This comment reiterates the necessary zoning changes that would occur as a result of either alternatives of the proposed project. The commenter asserts the zoning changes will create a division of agricultural lands that will further contribute to the urbanization of the area.

RESPONSE 24.8. Refer to Response 13.12.

COMMENT 24.9. The comment asserts that the Regional Transportation Plan does not substitute for the Merced County General Plan. Further, the comment asserts that the Regional Transportation Plan does not "explain away" potential growth inducing impacts associated with the AME Project.

RESPONSE 24.9. Refer to Response 13.13.

COMMENT 24.10. This comment asserts the AME DEIR does not adequately address the impacts to drainage/flooding, and potential contamination from stormwater runoff.

RESPONSE 24.10 Refer to Response 13.14.

Comment 25

RECEIVED
APR 29 2008
MCAG

Merced County Association of Governments
Attn.: Jesse Brown, Executive Director
369 West 18th Street
Merced, Ca 96540

To Whom It May Concern,

Following are concerns we have after reviewing the Atwater-Merced Expressway Project/ Draft Environmental Impact Report dated March 2008.

Be it known that we own/operate/manage the Migliazzo and Sons Dairy at 3645 W. Bradshaw Rd. Atwater, California. We have been at this location since 1967. We are also the largest land owner affected by this proposed project. We feel the dairy industry, including our facility, was not appropriately address in the EIR draft for this project. 25.1

Our dairy, as well as <u>all</u> dairies in the state of California, now come under the General Order of the San Joaquin Valley Regional Water Control Board Program. This mandated program requires dairies to come into compliance with water and soil regulations. The Atwater-Merced Expressway Project will adversely affect our operation. Following are the areas most affected: 25.2

a) Farmable acres. Under our calculations, this project will take 75 farmable acres our of production. This includes acreage for the roadway and also remnants of parcels affected by the roadway. These remnants that become unusable parcels are not manageable under normal agronomic practices. This parcel displacement was not considered in the EIR report. 25.3

b) Lagoon ponds. Our waste water ponds will both be affected by this project. Our secondary pond will be totally displaced and the total loss in storage capacity will be greater than 60% reduction. These ponds, both in compliance under the General Order, were not address in the EIR Report. 25.4

c) Waste Management Plan. A WMP is "to insure that the production area of the dairy facility is designed, constructed, operated and maintained so that wastes generated at the dairy are managed in compliance with the Waste Discharge Requirements General Order to prevent adverse impacts to groundwater and surface water" This EIR draft does not address the WMP mandated under the General Order. 25.5

d) Nutrient Management Plan. A NMP is balancing the nitrogen produced on the production facility with crop production. Soil testing and forage testing is required. A reduction in acreage with affect this balance. The area is not addressed in the EIR draft mandated under the General Order. 23.6

e) Water delivery and recovery systems. The series of canals, pipelines, drainage ditches and drain pumps are greatly affect by this project. Our dairy is a closed system and this was not addressed by the EIR draft. 25.7

f) Roadway access. Our property will be split in half making it difficult, if not impossible, to access. This was not addressed in the EIR draft. 25.8

In addition to the above items, the following will be directly affected by this project.

a) Our cow and heifers numbers, will be affected by this project. This reduces cash flow needed to operate and service debt. This reduction also greatly affects our efficiency of operation and our compliance under the General Order. This was not addressed in the EIR draft. 25.9

b) Lost jobs. 13 full time employees will be unemployed if our production facility can no longer operate. 25.10

c) Displaced Feedlot. The feedlot, which houses approximately 600 animals, will be displaced. If a new feedlot needs to be developed on the existing property, then additional acreage will be lost affecting our compliance under the General Order. This facility was not addressed in the EIR draft. 25.11

d) Revenue Loss. Substantial revenues will be lost with acreage and cow reduction because of this project. This loss in revenue will greatly affect our ability to meet financial obligations. Not addressed in the EIR draft. 25.12

Included is a copy of our Preliminary Dairy Facility Assessment under the General Order. This is to explain how our dairy operates and meets environmental requirements for the California Quality Assurance Program.

Also, included is the detailed map showing parcel number, slopes, water delivery and recovery systems, pumps, and holding ponds.

Also, this is **not** a typical California dairy. We are in the 99th percentile for production per cow. Additionally, we provide genetics through breeding stock, young sires, and embryos world wide. Also, we host both national and international visitors throughout the year. The goodwill we enjoy has come from many years of hard work and dedication.

Thank you for addressing our concerns.
I can be reached at 209-722-5588 or 209-756-5588.

Regards,
Dino and Dante Migliazzo
dba Migliazzo and Sons Dairy
Atwater, California

DAIRY FACILITY INFORMATION

A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY: Migliazzo and Sons Dairy

Physical address of dairy:

3645 W Bradshaw RD	Atwater	Merced	95301
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address): _____

LAND AREA ESTIMATES

A. LAND AREA

Size of the dairy production area (corrals, barns, ponds, feed storage): 49.0 acres

Estimated area (including roofed, impervious, and earthen surfaces) that receives rainfall which drains into the wastewater retention pond(s): 38.0 acres

Size of the crop land area currently used for manure (lagoon and solids) application: 160.0 acres

HERD AND MILKING ESTIMATES

A. HERD INFORMATION

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Heifers (7-14 mo. to breeding)	Calves (4-6 mo.)	Calves (0-3 mo.)
Number / head	700	100	270	280	80	170
Avg live weight (lbs)	1,400	1,500	1,100	775		
Avg milk production (lbs/cow/day)	95					
Daily hours on flush	18	6	6	6	6	0

Predominant animal breed: Holstein

Storage period: 120 days

Average number of milk cows per string sent to milkbarn: 100 milk cows per string

Number of milkings per day: 2.0 milkings per day

Number of times milk tank is emptied each day: 2.0 milk loads per day

Number of hours spent milking each day: 21.0 hours per day

Bulk tank wash and sanitizing: 3 run cycles

Pipeline wash and sanitizing: 4 run cycles

Copies of this assessment shall be maintained for 10 years.

These calculations are preliminary and approximate only. Completion of your Waste Management Plan and Nutrient Management Plan will provide you with more detailed and precise calculations upon which to make important decisions.

B. MILKBARN EQUIPMENT AND PARLOR FLOOR WASH

All numerical values in gallons per day	Milkbarn/parlor floor wash	Fresh water used in manure flush lanes	Plate coolers	Vacuum pumps / air compressors / chillers
Selected Type:	Traditional Manual Parlor Deck (Floor) Flush		Well Water Cooled (Water Reused/Recycled)	Mechanically/Air Cooled
Estimated:	14,000		30,930	0
User-Entered:	5,000		13,000	
Volume used in calculations:	5,000		13,000	0
Source is recycled water:	[X] Yes [ ] No			

C. MISCELLANEOUS EQUIPMENT

No miscellaneous equipment added to the preliminary dairy facility assessment.

D. DRINKING WATER SOURCE

Reused water is the source of herd drinking water: [ ] Yes [X] No

If yes, total amount of reused water consumed: _____ gallons per head per day

E. SPRINKLER PEN

Number of sprinklers in the holding pen: 48 sprinklers

Length of each sprinkler cycle: 5.0 minutes

Number of sprinkler pen cycles per string: 1 cycles/string

Water flow rate of each sprinkler head: 4.0 gallons per minute

Sprinkler pen wastewater volume: 13,440 gallons per day

Sprinklers reuse water from equipment: [X] Yes [ ] No

F. MILKBARN WATER CALCULATIONS

Water available for reuse/recycle: 13,000 gallons per day

Recycled water used again: 18,440 gallons per day

Balance: 0 gallons per day

Milkbarn water sent to pond: 20,490 gallons per day

Milkbarn water leaving system: 0 gallons per day

RETENTION PONDS STORAGE CAPACITY ESTIMATES

A. PONDS

numerical values in feet

Basin Name	Earthen Length (EL)	Earthen Width (EW)	Earthen Depth (ED)	Side Slope H:V (S)	Free Board (FB)	Dead Storage Loss (DS)	Storage Volume Corrected for Dead Storage Loss (ft³)
Dairy Lagoon	300	280	30	1.0	1	0	2,028,580
Dairy Settling Basin	240	40	20	1.0	1	0	81,345
Feed Lot Lagoon	600	200	15	1.0	1	0	1,505,290

RAINFALL ESTIMATES

A. RAINFALL AND DRAINAGE INFORMATION

Rainfall station nearest the facility: Merced

Storage period: 120 days

25 year / 24 hour storm event (NOAA Atlas 2, 1973): 2.50 inches

Storage period rainfall (DWR climate data): 8.05 inches

Combined storage period rainfall and 25 year / 24 hour storm event: 10.55 inches

Estimated rainfall onto and drained into the wastewater retention pond: 12,310,650 gallons

NUTRIENT REMOVAL BY CROP ESTIMATES

A. CROPS

Acres Planted	Crop Type	Yield (tons/acre)	Moisture (%)	Protein (%)	Phosphorus (lbs/ton yield)	Nitrogen Removed (lbs)	Phosphorus Removed (lbs)
144	Corn silage	32.0	70.0	9.0	1.5	39,813	6,912
144	Oats silage soft dough	14.0	70.0	17.7	1.6	34,256	3,226
16	Pasture	5.0	10.0	10.0	0.1	2,304	8
52	Sudan silage	30.0	70.0	15.0	1.7	22,464	2,652

ANNUAL NUTRIENT IMPORT & EXPORT ESTIMATES

A. ANNUAL NUTRIENT IMPORTS

Combined estimate of nutrients from commercial fertilizers and atmospheric Nitrogen applied to crops:

Nutrient Description	Amount Applied (lbs)
Nitrogen (N)	18,000
Phosphorus as Orthophosphate (P2O5)	0
Potassium as Potash (K2O)	0
Atmospheric Nitrogen Deposition	2,240

Atmospheric Nitrogen Deposition Rate (ANDR) = 14 lbs N / acre / year.

Copies of this assessment shall be maintained for 10 years.

These calculations are preliminary and approximate only. Completion of your Waste Management Plan and Nutrient Management Plan will provide you with more detailed and precise calculations upon which to make important decisions.

B. ANNUAL NUTRIENT EXPORTS

Manure Type	Volume Exported	Moisture Content	Total Nitrogen	Total Phosphorus
Separator Solids	1,260 tons	85.00 %	1.00 %	0.35 %
Corral Solids	0 tons	0.00 %	0.00 %	0.00 %
Liquid Manure	0 gallons	N/A	0.00 mg/L	0.00 mg/L

PRELIMINARY DAIRY FACILITY ASSESSMENT SUMMARY

A. LAND USE

Dairy production area (corrals, barns, ponds, feed storage): 49 acres

Estimate the area (including roofed, impervious, and earthen surfaces) that receives rainfall which drains into a wastewater retention pond: 38 acres

Crop land area used for manure application: 160 acres

B. HERD, MILKING, AND MILKBARN/PARLOR

Milk cows: 700 head

Dry cows: 100 head

Bred heifers (15 - 24 months): 270 head

Heifers (7 - 14 months to breeding): 280 head

Calves (4 - 6 months): 80 head

Calves (0 - 3 months): 170 head

Total number of animals: 1,600 head

Average number of milk cows per string sent to milk barn: 100 cows per string

Number of milking strings entering milk barn per milking: 7.00 strings per milking

Storage period: 120 days

Total manure production by herd for storage period: 293,033 cu. ft.

Estimated manure production for storage period (to dry lot): 116,115 cu. ft.

Estimated manure production for storage period (to pond): 1,323,433 gallons

Total milkbarn water volume for storage period (to pond): 2,458,800 gallons

C. ROOFED, IMPERVIOUS, AND EARTHEN RAINFALL RUNOFF AREAS

Total area receiving rainfall and draining to ponds (production area): 1,655,280 sq. ft.

D. RETENTION POND AND SETTLING BASIN ESTIMATES

Liquid storage surface area (retention ponds only):	216,600 sq. ft.
Rainfall onto and drained into retention ponds for storage period:	12,310,650 gallons
Waste production as manure:	1,323,433 gallons
Milkbarn water:	2,458,800 gallons
Milkbarn water comparative estimate:	29 gallons per cow per day
Fresh flush water for storage period:	0 gallons
25 year / 24 hour storm event (NOAA Atlas 2, 1973):	2.50 inches
Critical storage period rainfall (DWR Climate Data):	8.05 inches
Combined critical storage period and 25 year / 24 hour storm event:	10.55 inches
Total storage capacity required:	16,092,883 gallons
	2,151,306 cu. ft.
Existing storage capacity (adjusted for dead storage loss):	27,043,818 gallons
	3,615,233 cu. ft.
Existing capacity meets estimated storage needs:	Yes

E. NITROGEN (N) AND PHOSPHORUS (P) EXCRETION ESTIMATES

Daily gross nitrogen excretion estimates:	945 lbs nitrogen per day
Annual gross nitrogen excretion estimates:	344,818 lbs nitrogen per year
Nitrogen to pond storage after ammonia losses (30% loss applied):	150,382 lbs nitrogen per year
Nitrogen to drylot storage after ammonia losses (30% loss applied):	90,990 lbs nitrogen per year
Total nitrogen in storage (ponds and drylot combined):	241,373 lbs nitrogen per year
Daily gross phosphorus excretion estimates:	156 lbs phosphorus per day
Annual gross phosphorus excretion estimates:	56,773 lbs phosphorus per year
Phosphorus to pond storage:	36,354 lbs phosphorus per year
Phosphorus to drylot storage:	20,420 lbs phosphorus per year
Total phosphorus in storage (ponds and drylot combined):	56,773 lbs phosphorus per year

F. NITROGEN AND PHOSPHORUS IMPORT ESTIMATES

Total nitrogen imports onto facility as commercial fertilizers:	18,000 lbs nitrogen per year
Atmospheric Nitrogen Deposition (ANDR):	2,240 lbs nitrogen per year
Total phosphorus imports onto facility as commercial fertilizers:	0 lbs phosphorus per year

G. NITROGEN AND PHOSPHORUS EXPORT ESTIMATES

Total nitrogen exports off facility as manure:	3,780 lbs nitrogen per year
Total phosphorus exports off facility as manure:	1,323 lbs phosphorus per year

Copies of this assessment shall be maintained for 10 years.

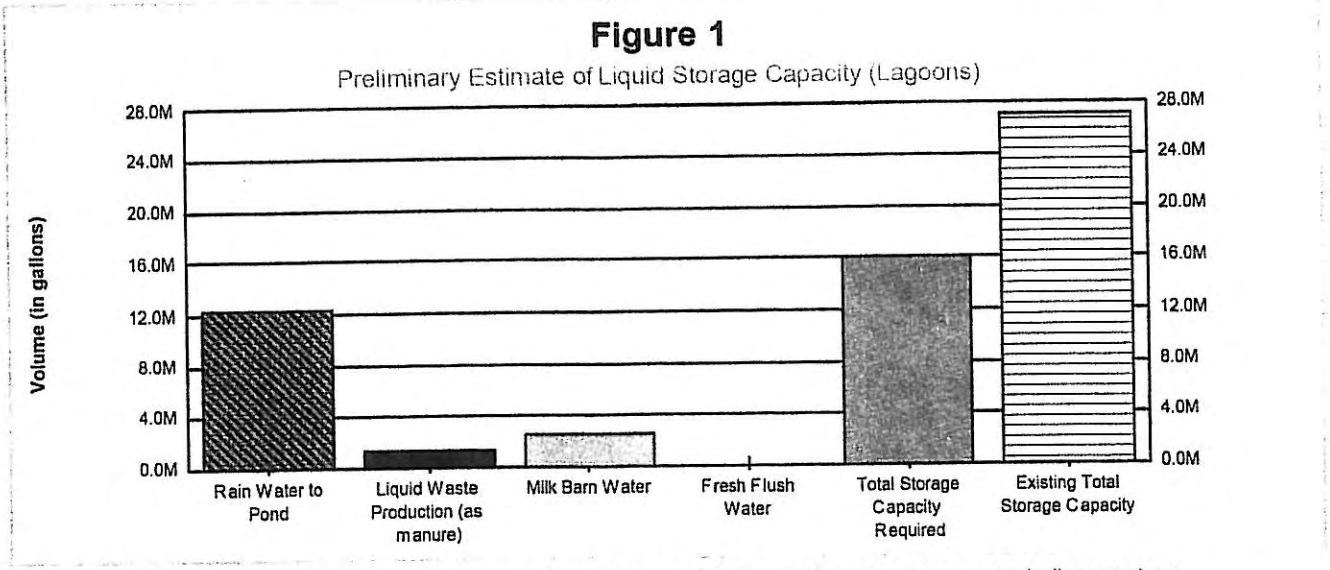
These calculations are preliminary and approximate only. Completion of your Waste Management Plan and Nutrient Management Plan will provide you with more detailed and precise calculations upon which to make important decisions.

H. ANNUAL NITROGEN AND PHOSPHORUS BALANCE ESTIMATE

Total nitrogen in storage (after 30% ammonia loss):	241,373 lbs
Nitrogen imported (as commercial fertilizer and ANDR):	20,240 lbs
Nitrogen exported as manure:	3,780 lbs
Nitrogen removed by crops:	98,837 lbs
Excess nitrogen (N generated - N removed):	158,996 lbs
Whole farm nitrogen balance ratio:	2.61 < need to be 1.6

Total phosphorus in storage:	56,773 lbs
Phosphorus imported as commercial fertilizer:	0 lbs
Phosphorus exported as manure:	1,323 lbs
Phosphorus removed by crops:	12,798 lbs
Excess phosphorus (P generated - P removed):	42,652 lbs

A. FIGURE 1



This graph estimates how many gallons of water and waste are sent to the wastewater storage ponds (lagoons) on your dairy during the selected 120 day storage period.

Your wastewater storage ponds (lagoons) must be very close to empty as a result of applying nutrients to crops over the last year starting in the beginning of October and should not fill before February.

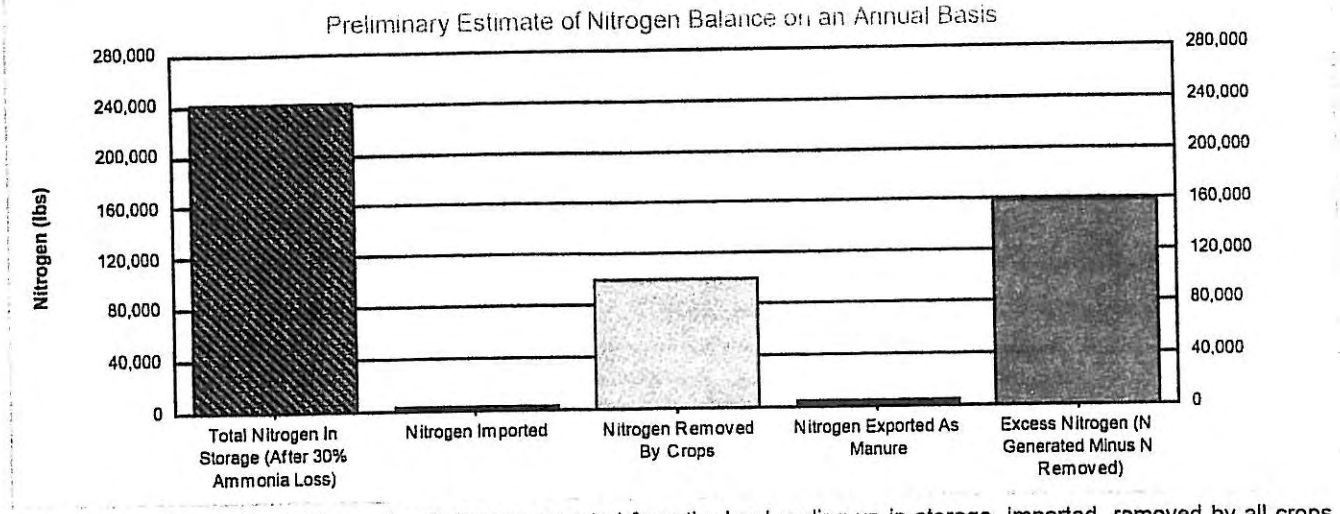
Existing Storage Capacity:	27,043,818 gallons
Required Storage Capacity:	16,092,883 gallons
Storage Capacity Difference:	10,950,936 gallons

The estimated pond capacity appears to be adequate.

B. FIGURE 2

Figure 2

Preliminary Estimate of Nitrogen Balance on an Annual Basis



This graph estimates the total pounds of nitrogen excreted from the herd ending up in storage, imported, removed by all crops associated with the dairy, exported (typically as dry manure), and balance, excess, or deficiency on an annual basis.

Nutrients must be applied at rates and times appropriate for the crop to prevent surfacewater and groundwater degradation.

Total nitrogen in storage (after 30% ammonia loss):	241,373	pounds
Nitrogen imported:	20,240	pounds
Nitrogen exported (as manure):	3,780	pounds
Nitrogen removed by crops:	98,837	pounds
Nitrogen excess or deficiency:	158,996	pounds
Whole farm nitrogen balance ratio:	2.61	(regulatory limit 1.65*)

It appears that the crop rotation may NOT be capable of removing the nitrogen applied on an annual basis.

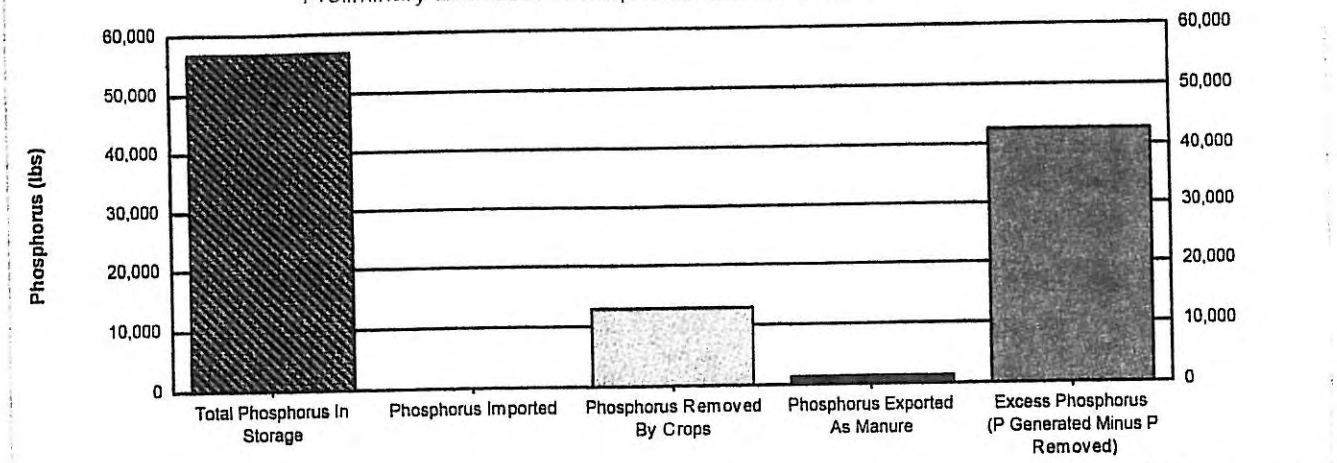
***Whole Farm Nitrogen Balance alone does not assure compliance, you cannot list cropland acreage or claim nutrient uptake for cropland that lacks infrastructure for controlled nutrient applications at agronomic rates and times.**

Nitrogen balance ratio = (Total nitrogen in storage - Nitrogen exported + Nitrogen in irrigation water + Nitrogen imports) / Crop removal

C. FIGURE 3

Figure 3

Preliminary Estimate of Phosphorus Balance on an Annual Basis

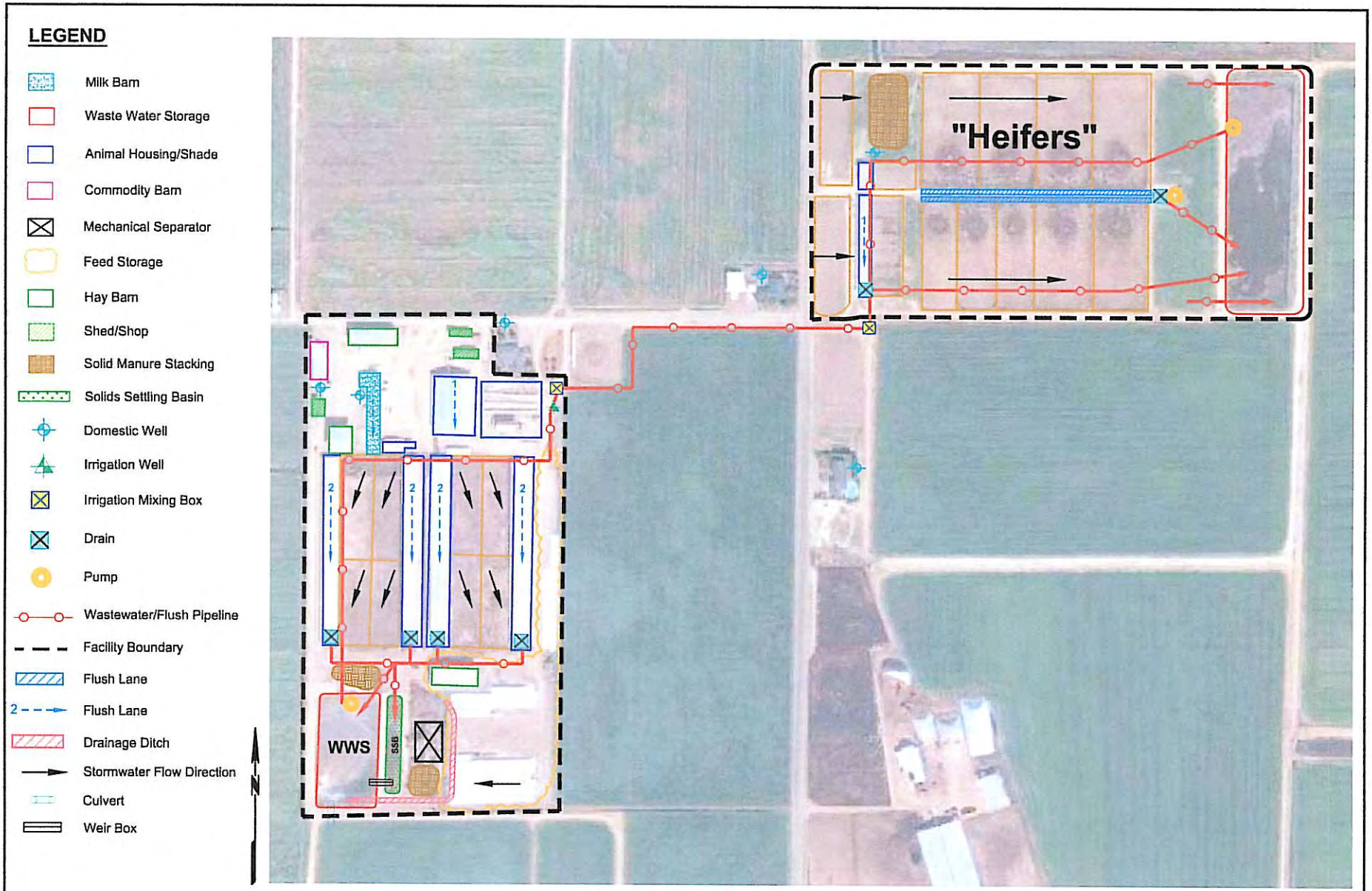


This graph estimates the total pounds of phosphorus excreted from the herd ending up in storage, imported, removed by all crops associated with the dairy, exported (typically as dry manure), and balance, excess, or deficiency on an annual basis.

Nutrients must be applied at rates and times appropriate for the crop to prevent surfacewater and groundwater degradation.

Total phosphorus in storage:	56,773 pounds
Phosphorus imported:	0 pounds
Phosphorus exported (as manure):	1,323 pounds
Phosphorus removed by crops:	12,798 pounds
Phosphorus excess or deficiency:	42,652 pounds

It appears that the crop rotation may NOT be capable of removing the phosphorus applied on an annual basis.



SGI environmental THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

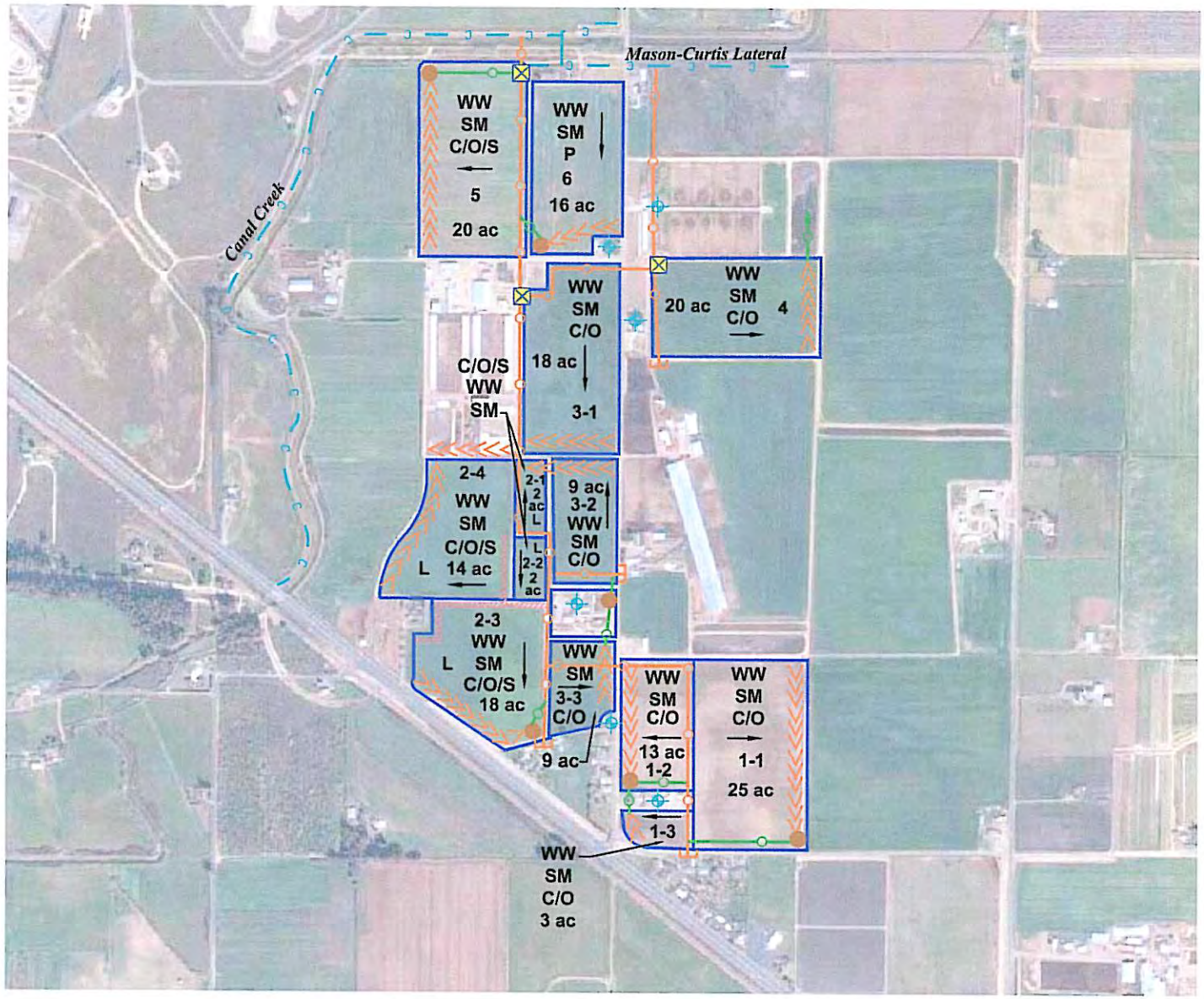
SCALE:
0 350 700
APPROXIMATE SCALE IN FEET

MIGLIAZZO AND SONS DAIRY
MERCED COUNTY, CA

FIGURE 2
DAIRY FACILITY

PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-COM-001	4/26/08	SB	TP

#144



LEGEND

- Fields
- Domestic Well
- Tailwater Return Pump
- Irrigation Mixing Box
- Tail Water
- Irrigation Direction
- Irrigation Pipeline
- Tail Water Return Pipeline
- Canal
- Irrigation Ditch
- Capped
- SM Solid Manure
- WW Waste Water
- L Leased
- P Pasture
- C Corn
- O Oats
- S Sudan

SGI environmental THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

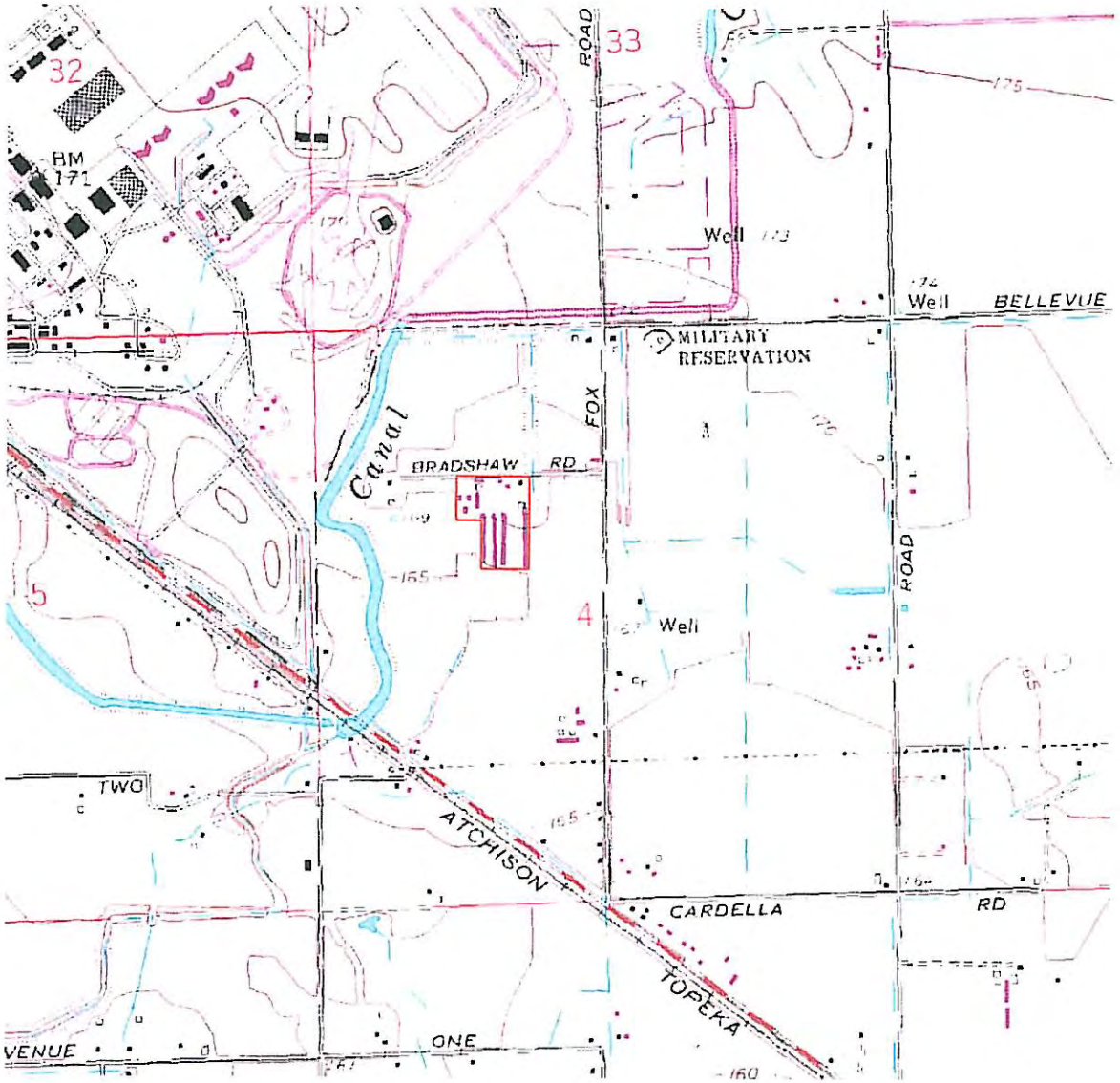
SCALE:
0 1000 2000
APPROXIMATE SCALE IN FEET

MIGLIAZZO AND SONS DAIRY
MERCED COUNTY, CA

FIGURE 3
DAIRY FIELDS

PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-COM-001	4/28/08	SB	TP

#144



LEGEND

Facility Boundary

N

SGI environmental THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

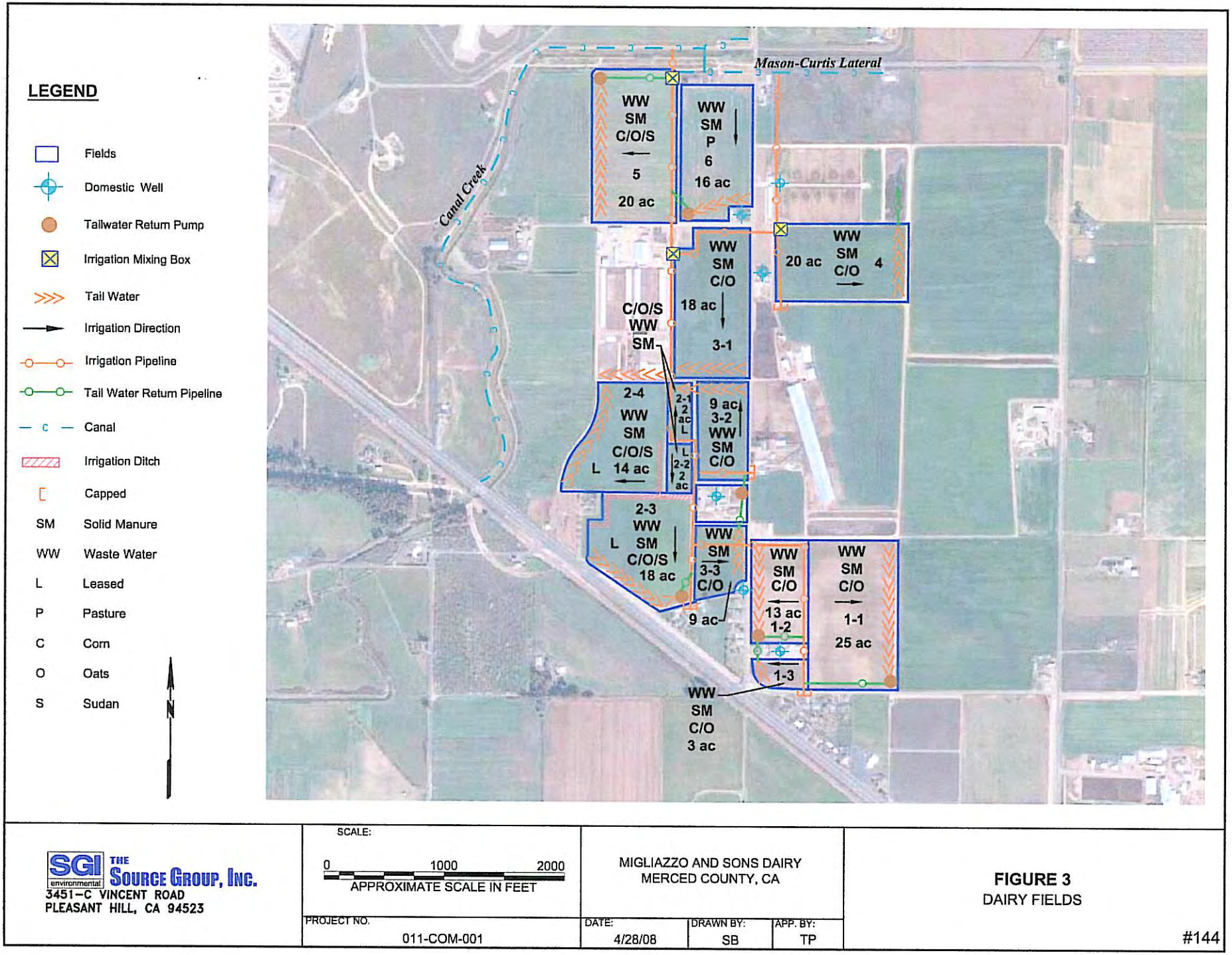
SCALE:
0 4,000 8,000
APPROXIMATE SCALE IN FEET

MIGLIAZZO AND SONS DAIRY
MERCED COUNTY, CA

FIGURE 1
TOPOGRAPHIC MAP

PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-COM-001	4/28/08	SB	TP

#144



SGI environmental THE SOURCE GROUP, INC. 3451-C VINCENT ROAD PLEASANT HILL, CA 94523	SCALE: 0 1000 2000 APPROXIMATE SCALE IN FEET	MIGLIAZZO AND SONS DAIRY MERCED COUNTY, CA			**FIGURE 3** DAIRY FIELDS
	PROJECT NO. 011-COM-001	DATE: 4/28/08	DRAWN BY: SB	APP. BY: TP	#144

Response to Comment 25 – Migliazzo and Sons Dairy

COMMENT 25.1. This comment asserts the AME DEIR does not adequately address the impacts to the diary industry.

RESPONSE 25.1. Page 4.2-15 of the Recirculated Draft EIR indicates that the AME project would impact farmlands associated with several dairy operations located within the study area. Pages 4.3-13 through 4.3-15 discuss the economic impacts associated with the potential displacement of certain dairy components as a result of the project and document the associated relocation laws that would apply. Under these laws, affected property owners would be compensated for their land as well as business losses and, presumably, regulatory compliance costs associated with replacement facilities.

Right-of-way agents, working in conjunction with the owner of the dairy facility and in consultation with agricultural and other advisors, will need to evaluate the full economic impact of the AME project as part of the property acquisition process, and will need to arrive at a business decision as to whether to continue operations on the current site, or relocate to another site. In the event of a complete relocation of the dairy, the owner of the facility could choose to purchase another existing facility or purchase a new site. In the event a new site is purchased, without active permits for the operation of a dairy, the property owner would need to secure numerous land use/environmental permits, including a Conditional Use Permit, Regional Water Quality Control Board Waste Discharge Requirements, Authority to Construct/Permit to Operate from the San Joaquin Valley Air Pollution Control District, and other related permits. These permits would be subject to focused environmental review under CEQA. It is not feasible for this EIR to speculate on the exact nature of the regulatory compliance or environmental issues which might be encountered in relocating some or all of the commenter's dairy facility.

COMMENT 25.2. This comment references that dairy operations in the State are required to come into compliance with water and soil regulations under the General Order of the San Joaquin Valley Regional Water Control Board (SJVRWCB).

RESPONSE 25.2. The comment is provided as background for the following comments.

COMMENT 25.3. This comment asserts the project will adversely impact agricultural production.

RESPONSE 25.3. Refer to Response 25.1 above.

COMMENT 25.4. This comment asserts critical agricultural systems will be displaced by the project.

RESPONSE 25.4. Refer to Response 25.1 above.

COMMENT 25.5. This comment asserts the AME DEIR is inadequate in addressing the Waste Management Plan (WMP) mandated under the General Order of the SJVRWCB.

RESPONSE 25.5. Refer to Response 25.1 above.

COMMENT 25.6. This comment asserts critical agricultural systems will be displaced by the project.

RESPONSE 25.6. Refer to Response 25.1 above.

COMMENT 25.7. This comment asserts critical agricultural systems will be displaced by the project.

RESPONSE 25.7. Refer to Response 25.1 above.

COMMENT 25.8. This comment notes that their property will be split in half making it difficult, if not impossible, to access.

RESPONSE 25.8. Refer to Response 25.1 above.

COMMENT 25.9. This comment asserts the AME DEIR is inadequate in addressing the required dairy efficiencies mandated under the General Order of the SJVRWCB.

RESPONSE 25.9. Refer to Response 25.1 above.

COMMENT 25.10. This comment asserts the AME DEIR does not adequately address the impacts to the diary industry in regards to the loss of jobs.

RESPONSE 25.10. Refer to Response 25.1 above. It is not certain that the AME project would result in the displacement of the dairy and in the event of a complete relocation of the dairy, the owner of the facility could choose to purchase another existing facility or purchase a new site. As a result it is not feasible for this EIR to speculate on the impact the project may have on the dairy industry and dairy jobs.

COMMENT 25.11. This comment asserts critical agricultural systems will be displaced by the project.

RESPONSE 25.11. Refer to Response 25.1 above.

COMMENT 25.12. This comment asserts the dairy will experience revenue loss as a result of the project.

RESPONSE 25.12. Refer to Response 25.1 above.

MERCED COUNTY ASSOCIATION OF GOVERNMENTS

Comment Sheet for the Atwater-Merced Expressway Draft Environmental Impact Report

Written comments can be submitted at the public hearing or mailed to the Merced County Association of Governments (mailing address is on the back of this card), faxed **209-723-0322**, or e-mailed to **AMEcomments@mcagov.org** by close of business **Friday, May 2nd, 2008.**

Please print clearly.

Name: Robert Hagerman

Organization and Address: 47341 N Hwy 59
Merced

Phone ( ) 722-6815
383-3055 FAX ( )

E-mail: Sixbag's @peoplepc.com

ALL COMMENTS BECOME PART OF THE PUBLIC RECORD.

Date: 4-1-08

Comment: 1B Looks Right To Avoid dairy | 26.1

Response to Comment 26 – Mr. Robert Hagerman

COMMENT 26.1. This comment supports Alternative 1B.

RESPONSE 26.1. The comment is noted. No further discussion is required.

Comment 27

BROOKFIELD CALIFORNIA LAND HOLDINGS LLC

2271 Lava Ridge Court, Suite 220
Roseville, CA 95661-3065

RECEIVED
MAY 05 2008
MCAG

May 2, 2008

Via e-mail at AMEcomments@mcagov.org and U.S. Mail

Merced County Association of Governments
Attn: Jesse Brown, Executive Director
369 West 18th Street
Merced, CA 95340

Re: Atwater-Merced Expressway Project
Clearinghouse No. 2006081138
Draft Environmental Impact Report (the "EIR")

Dear Mr. Brown:

Brookfield California Land Holdings LLC is the owner of Assessor's Parcel No. 005-110-020. Brookfield does not oppose the Atwater-Merced Expressway Project, but has suggestions to reduce costs. We also believe that the proposed kit fox preserve and crossing off of Bellevue Road should be relocated along Canal Creek. Our concerns are as follows: 27.1 27.2

1. **Errors & Omissions**: We believe that certain improvements shown in Figures 3-3, 4.1-1, 4.6-5, 4.6-6, and 4.6-7 as common to Alternatives 1A and 1B should be identified as belonging to Alternative 1A only. Please review the attached map which highlights the improvements in question. Additionally, we did not find the detailed approach, turn lane diagrams, and cross sections referred to on page 3-17. Could you send us copies for our review and add these to the final EIR? 27.3

2. **Right of Way Reduction**: We suggest include an analysis of a narrower "urban width" expressway in order to lessen the impact on property owners and habitat. If it is possible to reduce the expressway width down from 220 feet, land acquisition costs and associated impacts to endangered species could be considerably reduced. It makes sense to do an **alternate analysis** which will give decision makers more choices and opportunities to make significant cost savings. 27.4

3. **Constructability Considerations**: Consider adding an undercrossing at Santa Fe as an alternative. Excavated dirt could be used at other locations to achieve a general dirt balance. The undercrossing could significantly reduce relocation costs for MID and PG&E, and shorten construction schedules, thereby reducing overall project costs. There may be other opportunities to achieve cost savings elsewhere in the project using value engineering. 27.5

4. **Location of Kit Fox Preserve and Crossing**: We believe that placing a kit fox preserve and crossing north of Bellevue Road within an actively farmed orchard where there is significant human presence, constant rodent control and continuous insecticide spraying will not achieve the goal of preserving passageways for kit fox. Orchards are identified as low value habitat in the EIR. See pages 4.11-33 and 4.11-53. A better location is along the Canal Creek crossings where there is a constant (not intermittent) water source, plus waterway connections to major preserve areas, for example, Deadman Creek near Sandy Mush Road. 27.6

   We submit a letter from ECORP supporting Canal Creek as the prudent location for any kit fox crossings and potential preserve areas. 27.7

   We ask that the EIR be revised to include consideration of alternate locations for the kit fox preserve and crossing which provide access to Canal Creek.

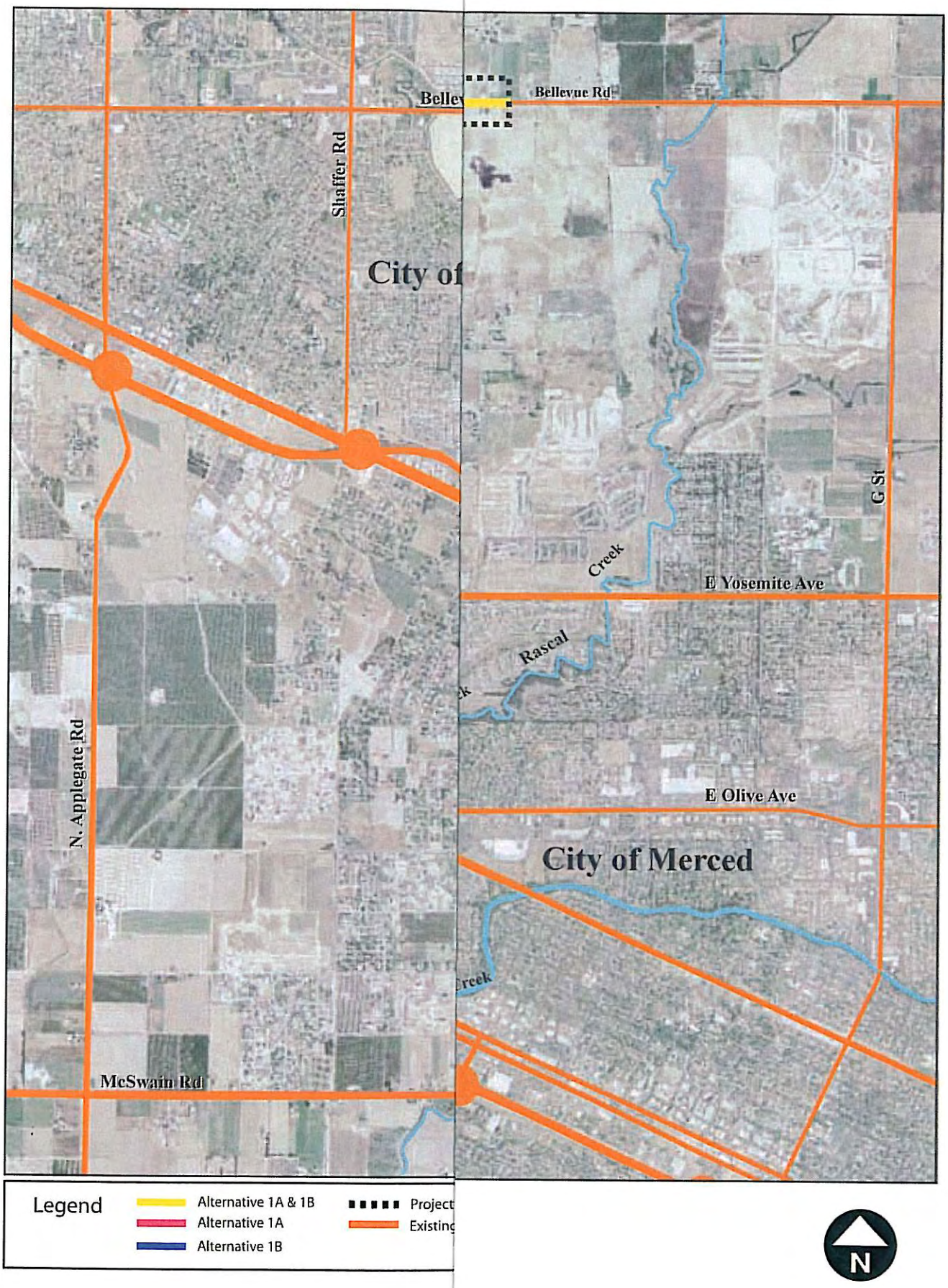
We also ask that you consider that specific project mitigation, such as a kit fox preserve, should not place additional burdens on adjacent landowners, as is the case with landowners north of Bellevue Road, who are already substantially affected by the expressway right-of-way. 27.8

Thank you for your review of these concerns.

Very truly yours,

Gonzalo Rodriguez
Brookfield California Land Holdings LLC

Attachments



ATWATER-MERCED EXPRESSWAY

ater-Merced Expressway: Alternative 1A & 1B

FIGURE 3-3

Source: MCAG, September 2007.

Response to Comment 27 – Brookfield California Land Holdings, LLC

COMMENT 27.1. The comment provides background information and indicates that they do not oppose the project.

RESPONSE 27.1. The comment is noted. No further discussion is required.

COMMENT 27.2. This comment suggests that the proposed kit fox preserve and crossing off of Bellevue Road should be relocated along Canal Creek, and requests that the AME DEIR be revised to include consideration of alternate locations for the kit fox preserve and crossing which provide access to Canal Creek.

RESPONSE 27.2. Mitigation Measure BIO-1k in Section 4.11, Biological Resources and Wetlands, of the Recirculated Draft EIR includes specific mitigation ratios for purchasing mitigation credits at U.S. Fish and Wildlife Service (USFWS) approved mitigation banks. This approach and specific mitigation ratios were discussed with the USFWS on July 8, 2008.

COMMENT 27.3. This comment requests certain changes to be made in Figures 3-3, 4.1-1, 4.6-5, 4.6-6, and 4.6-7 so that common areas to Alternatives 1A and 1B be identified as belonging to Alternative 1A only. The commenter also notes that the detailed approach, turn lane diagrams, and cross sections referred to on page 3-17 could not be found.

RESPONSE 27.3. Figures 3-3, 4.1-1, 4.6-5 4.6-6 and 4.6-7 in the Recirculated Draft EIR include the requested revisions.

COMMENT 27.4. This comment recommends an analysis of a narrower "urban width" expressway as a means to reduce acquisition costs and associated impacts to endangered species. It also recommends that an analysis of a reduced width alternative be performed.

RESPONSE 27.4. The footprint of the AME roadway has been developed to comply with current Caltrans design standards for expressway facilities, as well as consideration of the drainage conditions within the project area. Since the project area that the alternative alignments are going through is mostly undeveloped, the application of standards that would reduce the footprint of the expressway cannot be justified.

COMMENT 27.5. The comment recommends adding an "under crossing at Santa Fe" as an alternative.

RESPONSE 27.5. An underpass alternative was considered at the Santa Fe crossing; however, due to the flood zone limits in this area, constructing a depressed roadway section was deemed to present significant public safety issues in the event that flooding occurred. For this reason, this alternative was rejected from further consideration.

COMMENT 27.6. This comment asserts the proposed placement of a kit fox preserve and crossing north of Bellevue Road within an actively farmed orchard where there is significant human presence, constant rodent control and continuous insecticide spraying will not achieve the goals of preserving passageways for kit fox.

RESPONSE 27.6. Refer to Response 27.2 above.

COMMENT 27.7. This comment recommends that Canal Creek is the prudent location for any kit fox crossings and potential preserve areas.

RESPONSE 27.7. Refer to Response 27.2 above.

COMMENT 27.8. This comment recommends the EIR reconsider a specific project mitigation, such as a kit fox preserve, that would not place additional burdens on adjacent landowners, as is the case with landowners north of Bellevue Road, who are already substantially affected by the expressway right-of-way.

RESPONSE 27.8. Refer to Response 27.2 above.

Comment 28

CASTLE FARMS, INC.

April 29, 2008

Via e-mail at AMEcomments@mcagov.org and U.S. Mail

Merced County Association of Governments
Attn: Jesse Brown, Executive Director
369 West 18th Street
Merced, CA 95340

Re: Atwater-Merced Expressway Project
Clearinghouse No. 2006081138
Draft Environmental Impact Report

Dear Mr. Brown:

Castle Farms is the owner of approximately 2,600 acres of orchard and vineyard on the north side of Bellevue Road between Highway 59 and Franklin Road. The draft Environmental Impact Report (the "EIR") for the Atwater-Merced Expressway Project says the expressway will run through the south 220 feet of our property and that a 10 acre kit fox preserve is proposed just north of the expressway. We understand that the expressway is needed, but we believe there are better locations for a kit fox preserve which would not impact our farming operation. We will describe the serious impacts the expressway will have on our current farming operations and urge you to reduce the width to the extent possible. 28.1

1) Kit Fox Preserve. We think a kit fox preserve would be better located along Canal Creek. Canal Creek is a permanent water source extending south and connecting with Black Rascal Creek, Bear Creek, the East Side Canal, Duck Slough, Deadman Creek (which runs through the Sandy Mush Road preserve referred to on page 4.11-54), and other waterways. See the attached map of the Merced Irrigation District which shows these connections. 28.2

- We are very concerned about issues created by having a kit fox preserve next to our farming operations and, in the future, possible other uses. We do not want to be restricted from using our property for farming or for other uses. For example, will we have to create a buffer between a kit fox preserve and our farming 28.3

operation? Will we need to provide a buffer between a kit fox preserve and other uses? Will our farming activities be restricted so as to lessen potential impacts on the kit fox? Could future homes (for example) back up to a preserve or would there be restrictions? These are very important questions and they suggest strong reasons why a kit fox preserve at this location is not appropriate. 28.3 Cont.

- A kit fox "bubble" is proposed near Henderson Lateral which is not always filled with water. A location along Canal Creek provides better connections to permanent water sources. 28.4
- Orchard land is not good kit fox habitat. The EIR says, "Permanent crops (strawberry), orchards, and urban areas provide low quality habitats for this species of fox." See page 4.11-33.
- We routinely use various rodent control measures year round on the soil to reduce ground squirrels, mice and gophers. Reducing the rodent population is critical to our farm operation, but could pose significant risks to a kit fox which comes in contact with bait or with animals that have eaten it. Rodent control could also diminish potential food sources for the kit fox. See page 4.11-32 of the EIR. 28.5
- We spray our orchards and vineyards on a regular basis. These pesticides could be harmful to the kit fox, particularly young foxes.
- Regular farming activity means constant human presence next to the "bubble", which is likely to deter the kit fox from this location. 28.6
- A kit fox "bubble" would reduce productive orchard land as the drainage swale and access roads on the "bubble" will have to be relocated where almond trees and vineyards are now planted. This would require trees to be removed and the orchard drainage plan to be reworked. See below. 28.7
- One lift pump will need to be relocated. 28.8
- The irrigation system will need to be completely reworked.

bcb

2) Location of Right-of-Way On Bellevue Road. The 220 foot right-of-way along Bellevue Road will have a significant effect on our farming operations.

- The 220 foot wide right-of-way along Bellevue Road is located entirely on our orchard and vineyard and will occupy approximately 50 acres. 28.9
- An orchard is not just trees – it includes operational facilities such as roadways, drainage basins, irrigation systems, equipment storage areas and more. The same is true for a vineyard. There could be a negative effect on our efficiency. 28.10
- Placing the expressway on a 220-foot wide strip north of Bellevue Road will require tree removal so we have space for the uses displaced by the expressway. 28.11
- Our net profits will be reduced significantly by the loss of these 50 acres. 28.12
- Two lift pumps will need to be relocated. These are critical to our farming operation as we use them to drain ditches and reservoirs.
- These 50 acres are the prime area for catchment drainage which we hold and reuse. The entire orchard and vineyard drains to this location.
- These 50 acres provide water storage which benefits the City of Merced by helping to prevent flooding. 28.13
- Drainage catchment areas and drainage canals and basins will all need to be relocated and reworked to control flooding and provide for water storage and reuse. This is very expensive.
- All irrigation sprayers will need to be realigned.

bob

We appreciate your consideration of our concerns. We ask that (i) the kit fox "bubble" and crossing be relocated along Canal Creek; and (ii) the width of the expressway be reduced from 220 feet to lessen impacts on our farming operations and reduce the cost of the expressway. 28.14 28.15

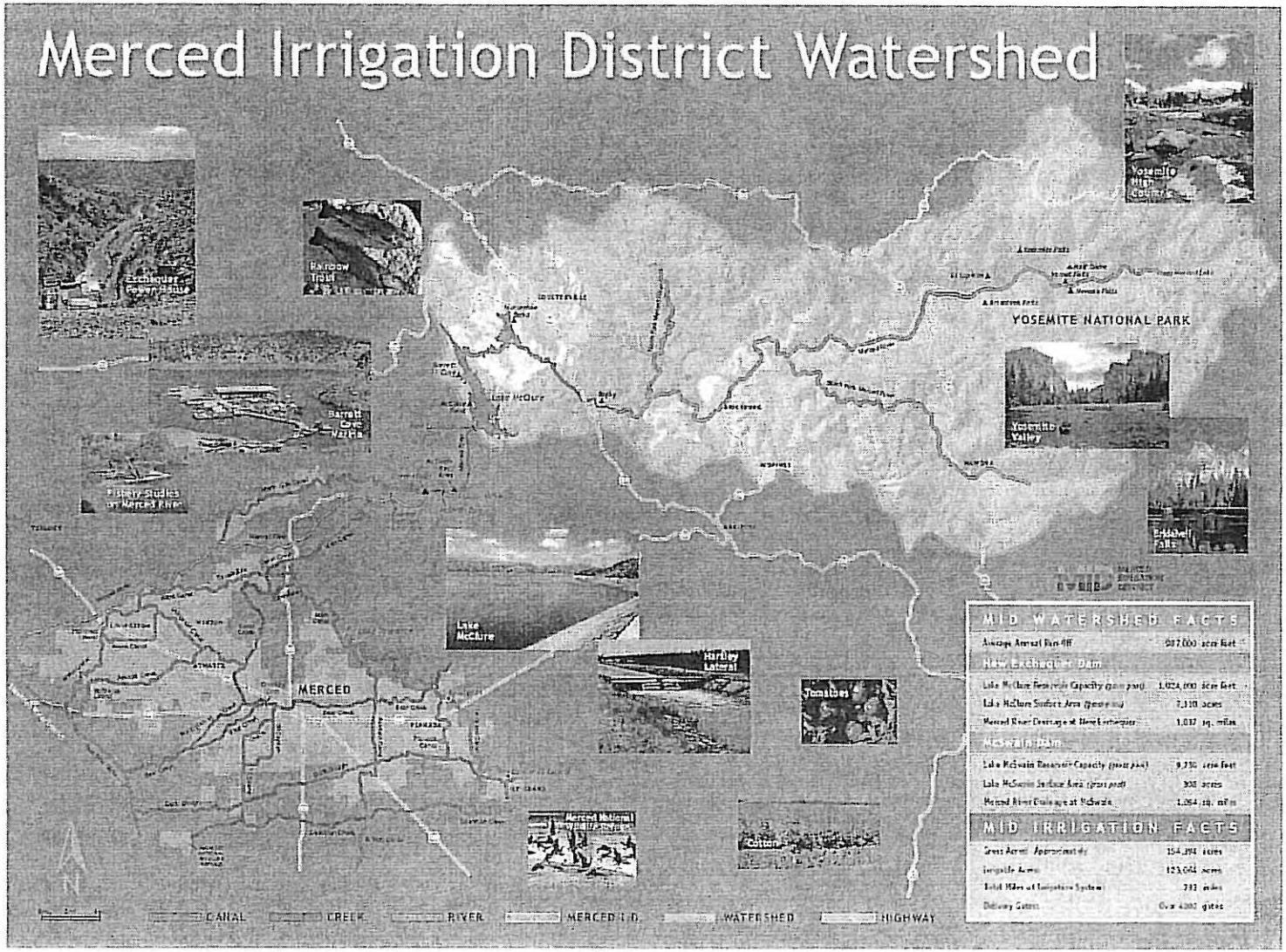
Very truly yours,

Robert B. Glassman

Robert B. Glassman for
Castle Farms, Inc.

Attachment

bob


Merced Irrigation District Watershed
YOSEMITE NATIONAL PARK
MERCED
Lake McClure
Barrett Cove
Rainbow Trout
Fishery Studies on Merced River
Hartley Lateral
Jamestown
Cotton
Yosemite Valley
Bridalveil Falls
MID WATERSHED FACTS
Average Annual Run-Off
New Exchequer Dam
Lake McClure Reservoir Capacity (gross pool)
Lake McClure Surface Area (gross pool)
Merced River Drainage at New Exchequer
McSwain
Lake McSwain Reservoir Capacity (gross pool)
Lake McSwain Surface Area (gross pool)
Merced River Drainage at McSwain
MID IRRIGATION FACTS
Gross Acres Approximately
Irrigable Acres
Total Miles of Irrigation System
Delivery Gates
CANAL
CREEK
RIVER
MERCED I.D.
WATERSHED
HIGHWAY

From: "Debbie Janzer" <debbiej@britzinc.com>
To: <AMEcomments@mcagov.org>
Date: 4/29/2008 5:24 PM
Subject: Castle Farms, Inc.
Attachments: img-080430001834-0001.pdf

The attached has been sent from Robert B. Glassman
e-mail address: bobg@britzinc.com (559) 448-8000 Ext. 114

Response to Comment 28 – Castle Farms, Inc.

COMMENT 28.1. This comment requests that a better location for a kit fox preserve be implemented in this project.

RESPONSE 28.1. Refer to Response 27.2 which explains that Mitigation Measure BIO-1k has been revised to no longer include the establishment of migration corridors or the underpass and bubble preserve lands references in the comment.

COMMENT 28.2. This comment suggests a kit fox preserve would be better located along Canal Creek.

RESPONSE 28. Refer to Response 28.1 and 27.2.

COMMENT 28.3. This comment expresses concerns about the proximity of a kit fox preserve to farming operations and potential other uses of the Castle Farms property.

RESPONSE 28.3. Refer to Response 28.1 and 27.2.

COMMENT 28.4. This comment requests that a better location for a kit fox preserve be implemented in this project.

RESPONSE 28.4. Refer to Response 28.1 and 27.2.

COMMENT 28.5. This comment identifies the various rodent control measures use by the farm operations that could pose significant risks to a kit fox, and also diminish potential food sources for the kit fox.

RESPONSE 28.5. Refer to Response 28.1 and 27.2.

COMMENT 28.6. This comment requests that a better location for a kit fox preserve be implemented in this project.

RESPONSE 28.6. Refer to Response 28.1 and 27.2.

COMMENT 28.7. This comment asserts the proposed kit fox corridor would reduce productive orchard land as the drainage swale and access roads on the corridor would have to be relocated where almond trees and vineyards are now planted.

RESPONSE 28.7. Refer to Response 28.1 and 27.2.

COMMENT 28.8. This comment asserts critical agricultural systems will be displaced by the proposed kit fox mitigation.

RESPONSE 28.8. Refer to Response 28.1 and 27.2.

COMMENT 28.9. This comment asserts the proposed location of Right-of-Way on Bellevue Road would have a significant impact on farming operations.

RESPONSE 28.9. Property acquisition for the AME project would be govern by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and property owners that are

impacted by the project would be fairly compensated for the land to be acquired as well as any business loss associated with the acquisition.

COMMENT 28.10. This comment asserts critical agricultural systems will be displaced by the project.

RESPONSE 28.10. Refer to Response 28.9.

COMMENT 28.11. This comment asserts critical agricultural systems will be displaced by the project.

RESPONSE 28.11. Refer to Response 28.9.

COMMENT 28.12. This comment asserts the project will result in a significant loss of profit for Castle Farms.

RESPONSE 28.12. Refer to Response 28.9.

COMMENT 28.13. This comment asserts critical agricultural systems will be displaced by the project.

RESPONSE 28.13. Refer to Response 28.9.

COMMENT 28.14. This comment requests that the kit fox "bubble" and crossing be relocated along Canal Creek.

RESPONSE 28.14. Refer to Response 28.1.

COMMENT 28.15. This comment is similar to comment 25.4 that suggested a narrower right-of-way or using an "urban width" for the expressway.

RESPONSE 28.15. Refer to Response 27.4.

Comment 29

From: <Frankiem4@aol.com>
To: <AMEcomments@mcagov.org>
Date: 4/25/2008 9:52 AM
Subject: 1B, 1A expressway proposal

CC: <Jjluthey@aol.com>

April 25, 2008
April 25, 2008
MCAG, AME Comments,

My husband and I own property in the path of the 1B proposed expressway project.
With the 1B plan, the road would have to cross the creek in several places, with a bridge for each.
It would destroy wildlife habitat. For a couple times a year the small Kit Fox travel through this area and stay around for a week or two. The grove of trees support 2 or 3 different species of Hawks, of which a pair are nesting at this time. We have Owls and at migrating times the Buzzards come through and roost for several days. At times we have even had Eagles come down to cool themselves in the canal.
If man keeps destroying the wildlife habitat for the sake of progress, there will be no place for wildlife to go and they will soon disappear. 29.1

Everyone would agree that dairies are needed, but the 1A plan would be better.
The urban areas have increased, and when the wind is right the dust and the smell extend all the way to the Buhach Colony High School. All of these expensive new homes are in the path of the dust and stench. One of those new homes is owned by Steve Passadori of Passadori's furniture and hardware, which has commented on the bad smell. It would be wiser and easier to move a herd of cows that are not near extinction than to do away with the wildlife areas and up root all the families in its path. 29.2

Plan 1A would be a more direct route down Fox Road to Belleview and straight through access to the prison, Castle and the dream of a raceway. 29.3

I would like to close by saying that the MCAG has not sent us a notice of any upcoming meetings. Some of our neighbors were also not notified, for example the
April 1st meeting. If we landowners are not at the meetings, then we can't object can we?
We don't feel its fair and it's not very ethical or business like on your behalf to deny us of our right to now what's going on with our property.
All of us have worked hard for our homes and we want to keep them as they are. 29.4

John & Judy Luthey
PO Box 520
Atwater Ca, 95301
209-723-8362
jjluthey@aol.com (mailto:jjluthey@aol.com)

**********Need a new ride? Check out the largest site for U.S. used car listings at AOL Autos.
(http://autos.aol.com/used?NCID=aolcmp00300000002851)

Response to Comment 29 – Mr. John and Ms. Judy Luthey

COMMENT 29.1. This comment refers to Alternative 1B and the effects this alignment would have on wildlife that utilize the area.

RESPONSE 29.1. Extensive biological studies were conducted as part of the Recirculated Draft EIR including wildlife surveys for San Joaquin kit fox and raptors mentioned in the comment. The results of these studies and surveys along with the potential impacts to wildlife resulting from both alternatives to the AME project are addressed in Section 4.11, Biological Resources and Wetlands, of the Recirculated Draft EIR which covers some 60 pages. Several significant impacts to the habitats of sensitive species were identified in this section of the Recirculated Draft EIR; however, with the application of recommended mitigation measures, all potential impacts are expected to be reduced to levels that are less than significant. No revisions to the Recirculated Draft EIR are necessary.

COMMENT 29.2. This comment proposes several reasons to select Alternative 1A over Alternative 1B primarily because Alternative 1A would result in more impact to local dairies which the commenter believes would reduce dust and smell issues and would avoid impacts to wildlife in the area.

RESPONSE 29.2. The comment represents the commenter's personal opinion of how to weigh the differing impacts of the two AME alignments. It is important to note that impacts to local dairies are addressed in the Response to Comment 25 and several clarification have been made to the EIR in response.

This comment is noted. No further discussion is required.

COMMENT 29.3. This comment provides additional reasons why the commenter believe Alternative 1A should be selected as the preferred route.

RESPONSE 29.3. Comment is noted. No further discussion is required.

COMMENT 29.4. The comment asserts that MCAG did not send proper notice of the public meetings at which the AME Project was on the County of Merced's Board of Supervisor's agenda.

RESPONSE 29.4. Refer to Response to 15.19 for a discussion of the public noticing process.

Comment 30

From: <gregsanders@juno.com>
To: <AMEcomments@mcagov.org>
Date: 3/25/2008 8:10 PM
Subject: Atwater-Merced Expressway

MCOG:

I frequently drive highways 59 and 140 through Merced. I have been impressed many times with the need to circumvent the congestion on V Street and the complex interconnection of streets and highways there. The proposed expressway seems a great way to alleviate this sometimes dangerous and tedious bottleneck with a minimum of impact on existing terrain. Thank you for going ahead with this project. 30.1

Greg Sanders
Snelling
209-563-6635

Response to Comment 30 – Mr. Greg Sanders

COMMENT 30.1. The commenter expresses support for the project, and believes the proposed expressway would alleviate the congestion on V Street and dangerous bottleneck through Merced.

RESPONSE 30.1. This comment is noted. No further discussion is required.

Dr. Long Thao
Family Practice

Long Thao, M.D.
MEDICAL CLINIC

RECEIVED
APR 15 2008
MCAG

April 10, 2008

Merced County Association of Governments (MCAG)
369 West 18th Street, Merced, CA 95340
Telephone: (209) 723-3153 Fax: (209) 723-0322

RE: Atwater/ Merced Expressway

To Whom It May Concern:

This letter is to inform you about our concerns of the proposed project. We live at 1829 North Gurr Road in Atwater and the expressway is planned to cut in front of our house. We have a couple of concerns, which I hope you will strongly take into consideration:

1. We have two creeks that meet right in the back yard of our property and by putting a bridge in the area; it may create flooding problems during the rainy season. Which we have flooded before. 31.1
2. The expressway can cause air pollution and noise as the wind does blow south-easterly towards our property. 31.2
3. One of the major concerns of the expressway cutting close to our property is the distinct animal wildlife such as the white cranes, red tail hawks, and many other habitats that we do not want to disturb. 31.3
4. If possible, please keep the expressway as far east of our house as possible. 31.4

It is imperative that you take an in-depth look at our concerns and consider them. Thank you for your time and we are looking forward to hearing from you.

Sincerely,

Long and Seng X. Thao

Response to Comment 31 – Long Thao, MD Medical Clinic

COMMENT 31.1. This comment expresses concerns regarding the placement of a bridge in the area of the 1829 North Gurr Road, which may create flooding problems during the rainy season.

RESPONSE 31.1. As explained on page 4.9-21 of the Recirculated Draft EIR, since the bridge would be built with a sufficient opening to allow the unimpeded passage of 100-year storm flows, the project is not expected to induce flooding problems in the Black Rascal Creek floodplain (in the area of North Gurr Road). No changes to the Recirculated Draft EIR are required.

COMMENT 31.2. This comment asserts the expressway will cause air and noise pollution.

RESPONSE 31.2. Section 4.6, Noise, of the Recirculated Draft EIR addresses the potential noise impacts associated with the AME project. Specifically, Impact N-2 identifies that the project will result in ambient noise levels in the project vicinity that are likely to expose persons to noise levels in excess of standards established in the City of Atwater and Merced County General Plans. Recommended mitigation measures are discussed on page 4.6-15 and 4.6-27; however, as stated on page 4.6-27 of the Recirculated Draft EIR, this impact would be considered significant and unavoidable.

Air quality impacts associated with the project are discussed in Section 4.7, Air Quality, of the Recirculated Draft EIR. However, as shown on pages 4.7-13 through 4.7-16, all significant air quality impacts will be mitigated to a less-than-significant level.

COMMENT 31.3. This comment asserts the proposed AME project would disturb wildlife such as red tail hawks and white cranes.

RESPONSE 31.3. Extensive biological studies were conducted as part of the Recirculated Draft EIR. The results of these studies and surveys along with the potential impacts to wildlife resulting from both alternatives to the AME project are addressed in Section 4.11, Biological Resources and Wetlands, of the Recirculated Draft EIR which covers some 60 pages. Several significant impacts to the habitats of sensitive species were identified in this section of the Recirculated Draft EIR; however, with the application of recommended mitigation measures, all potential impacts are expected to be reduced to levels that are less than significant. No revisions to the Recirculated Draft EIR are necessary.

COMMENT 31.4. The commenter requests that the expressway be positioned as far east of their property as possible.

RESPONSE 31.4. This comment is noted.

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Comments Received at Draft EIR Public Hearing on April 1, 2008

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ATWATER-MERCED EXPRESSWAY PROJECT

DRAFT ENVIRONMENTAL IMPACT REPORT

PUBLIC HEARING

Atwater, California

Tuesday, April 1, 2008, at 6:35 p.m.

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REPORTER'S TRANSCRIPT OF PUBLIC COMMENTARY

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Reported by: Christine M. Cradit, CSR No. 3805

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e-mail: armerced@sbcglobal.net
www.associatedreportersmerced.com

OFFICIALS IN ATTENDANCE

MERCED COUNTY ASSOCIATION OF GOVERNMENTS
JESSE B. BROWN, EXECUTIVE DIRECTOR
369 WEST 18TH STREET
MERCED, CALIFORNIA 95340
(209) 723-3153, Ext. 302

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JIMMY W. SIMS, PE
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CIRCLE POINT
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SUITE 1600
SAN FRANCISCO, CALIFORNIA 94105
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CIRCLE POINT
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455 CAPITOL MALL COMPLEX
SUITE 802
SACRAMENTO, CALIFORNIA 95814
(916) 658-0180, Ext. 126

--o0o--

PUBLIC SPEAKERS	PAGE
DANTE MIGLIAZZO	3
DARLENE PETERS	5
DELORES CABEZAT ORTIZ	6
DINO MIGLIAZZO	7

(Presentation by officials in attendance, after which the following public commentary took place:)

MR. CLERICI: Dante Migliazzo.

MR. DANTE MIGLIAZZO: First of all, I'd like to thank MCAG for giving us an opportunity to provide comments, and I'd also like to thank Mike Nelson's office. Mike has been very candid keeping us informed about this project along the way.

In terms of the environmental impact report and the concerns that we have as owners of Migliazzo and Sons Dairy, in May of 2007, Central Valley Regional Water Control Board adopted a complete new set of parameters for all of the dairies that exist in California to fall under, and it has required a significant change in the way that we report and monitor our waste discharge. It's the waste discharge requirement from the State of California.

And in terms of the environmental impact, in the project area, there are three dairies that are involved that are existing today, and those dairies have parameters laid upon them in terms of the number of cows that they can milk on the acres that we have to farm, and we must be able to remove the nitrogen that the cows produce within the parameters of the acreage that we have through our cropping procedures and our handling of our waste discharge.

32.1

In the environmental impact report for this project, we did not see an address of how that would affect the reduction of the acreage of the farms that exist and how those dairies will be able to continue to operate at the levels they are operating at.

In particular, cows per acre, there are numbers that the Regional Water Board has kept us under. The Merced County Environmental Offices have dictated to us that we have a certain number of cows that we can operate within.

In our particular instance, it will significantly change the volume of farmable acres that we have, and how is that going to be addressed environmentally in changing the concentrations of the waste discharge that we produce and how those things are handled. That's the first comment that I have. How is that going to be handled with this project, the concentration of nitrogens with the Regional Water Board's requirements that were adopted in May of 2007.

The second comment I have is with regards to soils. The first one is on the agriculture part. I just did not feel that that was addressed significantly in terms of dairies. A lot of mention on orchards, row crops, trees, foul land, wetlands. Almost no mention at all about the dairy industry that's being affected.

32.2

Secondly, in terms of the farmland that we have at this point, not just farmland on our facility but others, how is the change in the soil structure, the changing of the grade level

32.3

going to affect the fertility of those soils and how is that going to be addressed in terms of the same thing, our cropping procedures and our historical production data. 32.3 Cont.

MR. CLERICI: Thank you. That was right on time. By the way, when I get to 30 seconds, I'll raise my hand. I failed to mention that earlier. Thank you very much.

Darlene Peters.

MS. DARLENE PETERS: Hate to follow him. He's a good speaker.

MR. CLERICI: I'm sure you'll do fine, Darlene.

MS. DARLENE PETERS: I'm Darlene Peters and I have property located at 4451 Santa Fe. It is right next to Castle Air Force Base property, and we own 15 acres there. This was purchased by my father in the early 1940s, and at the time there was only a big barn on the property. He tore down the barn and built our home out of -- actually, out of a book because he wasn't a contractor, didn't know how to build, and used the nails and the wood from the barn.

Part of the barn is still standing, but used the nails in the wood to build the home that's still there. And it holds great historical value to us. In fact, my brother was telling me -- we are right now in the process of doing some upgrading, electrical, et cetera, on the home, and we found that the nails are almost impossible to pull out of the wood, and we asked him how in the world did you do it. He said each nail had to be physically waxed with paraffin for it to be able to be driven into the wood. So it holds a lot and we would hate to lose it. 32.4

And 1B would go right through the doors and the house and everything, so we really hate to lose our home. Thank you.

MR. CLERICI: Thank you. Delores Cabezat

Ortiz.

MS. ORTIZ: I'd be nice and thank you for letting me be here, having you here, like Dante, but I'd just as soon you weren't here. We own the property at 5019 Franklin, which is the corner of Bellevue and Franklin, and I think most everybody in the room can see what that means to us because A or B goes over the top of the existing house.

Our problem or my problem with what I'm seeing is we have 60 acres there and three different parcels and you affect all three of them with either of the routes. 32.5

My daughter's getting ready -- in fact, having plans drawn as we speak or as I speak to have a new house built on the property, and I mean, I can't say, well, wait five years, wait 10 years, wait 15 years until they decide if there's going to be money for this project to go through. 32.6

So obviously, I mean, I don't know, I was at the initial meeting when all the other routes were in existence. I mean, we thought like the red route that paralleled 59 was a good route because we know what exists there in the middle.

And so, I mean, I know you're down to 1B and 1A and it looks like you're going to affect us, but I just want to say you're not just affecting one piece of ground for us, you're -- it's not like having a road through the middle of your property. You're affecting three different parcels and making almost all three of them totally unusable for us. 32.6 Cont.

Thanks.

MR. CLERICI: Thank you. Dino Migliazzo.

MR. DINO MIGLIAZZO: Thank you. Just a couple of quick questions. Your EIR report addressed displacement of homes as well as a school site. I was wondering how it will address businesses that would be affected with either 1A or 1B. Didn't mention any of the businesses. Wondered what kind of impact that would have. 32.7

The second question I have is somewhat related to Delores's comment on parcel splits. We want to know how the project is going to address these parcel splits. One of them would affect two parcels, the second would affect six parcels that we have, and we're talking about agronomic practices as well as water delivery and return systems that are currently in place. I saw nothing in the study that addressed any of those issues. 32.8

MR. CLERICI: Thank you very much.

Would anybody else care to speak tonight at the public hearing?

We will be around for some time afterwards to chat and answer some more questions. Do remember that the cut-off date to comment is May 2nd and, once again, we have written comment sheets back there. You can fill them out here and leave them with us. You can take them home with you, fill them out, fold them over, fix them up and put a stamp on them, and they'll get to us as well. And as Jesse mentioned, there's also the ability to send them in on line. Also, there are too actual physical copies. I know that we have everything on the computer now, but if you read this thing, your eyes will fall out of your head after a while. We do actually have some physical copies that you can look at, one's here, one's at the library, and the other one is at the MGAC offices, so if you want to stop by and actually look at a copy, you can fill it out.

MR. CHANNELL: We have about 20 copies on CD.

Documents, you can take those home and look at them as well.

UNIDENTIFIED MEMBER OF THE AUDIENCE: Where were these meetings advertised?

MR. CLERICI: The meetings were advertised in the local paper twice. In fact, both the newspapers here in this region, Merced and the Atwater newspaper. One was put out at the time when the draft was made available back at the 29th, I think it was, of February, and the other one was about a week or so ago. For this particular meeting, there were two notices. There was also a mail out notice, that was done through the MGAC mailing list, so there was a mail out and two newspaper.

UNIDENTIFIED MEMBER OF THE AUDIENCE: I just find it really interesting. This involves a lot of people, that there are some few people here.

MR. CLERICI: We used the same mediums as we used we previously, very similar types of advertising for similar meetings and there were more people. I believe the meeting back about a year or so, maybe a little bit more than a year, I think had almost 90, the one before that also had 90 people and we used the exact same mediums.

UNIDENTIFIED MEMBER OF THE AUDIENCE: That one I knew about. If you really look in the crowd, there are a lot more chiefs here than there are Indians.

MR. CLERICI: That is an interesting thing when you do public meetings and sometimes there's no particular rhyme or reason to it.

As I mentioned, we did use the same exact notification.

UNIDENTIFIED MEMBER OF THE AUDIENCE: There should be mail-outs of some sort. Aren't they -- whatever you represent.

MR. CLERICI: You can find it on our website and you can always call Jesse.

UNIDENTIFIED MEMBER OF THE AUDIENCE: I heard it on the radio.

UNIDENTIFIED MEMBER OF THE AUDIENCE: I was just curious. You have some very interesting questions addressed tonight. When will those be responded to, parcel splits and the drainage irrigation?

MR. CHANNELL: We'll be collecting those comments along with anything we get in writing, and comments that we get from agencies. This is also going out to all state agencies and some local agencies as well. All of those will be incorporated into the final EIR that will be a formal response to comments. We'll try to address anything that people felt was lacking in the EIR.

MR. SIMS: I would strongly urge you, for those who actually spoke today to also send in the written comments too. I would urge you to do that just to make sure your points are getting across and gets into the written record.

MR. CLERICI: We did have a court reporter here, and they're very efficient at taking down every word that you say.

Please eat the cookies and drink the water. Otherwise I have to take that back to my office, although the office staff would like the cookies. And have a good evening and drive home carefully.

STATE OF CALIFORNIA,)
: ss.
COUNTY OF MERCED)

I, Christine M. Cradit, do hereby certify:

That I am a licensed, Certified Shorthand Reporter, duly qualified and certified as such by the State of California;

That the said foregoing was by me recorded stenographically at the time and place first therein mentioned; and the foregoing pages constitute a full, true, complete and correct record made;

That I am a disinterested person, not being in any way interested in the outcome of said action, nor connected with, nor related to any of the parties in said action, or to their respective counsel, in any manner whatsoever.

Dated this 15th day of April, 2008.

_____

C.M. CRADIT, CSR No. 3805

Response to Comment 32 – Reporter's Transcript of Comments Received at Draft EIR Public Hearing

COMMENT 32.1. This comment is a reiteration of several of the points contained in Comment Letter 25, submitted by this same commenter.

RESPONSE 32.1. Refer to responses to Comment 25.1.

COMMENT 32.2. This comment asserts the AME DEIR does not adequately address impacts to the dairy industry.

RESPONSE 32.2. The DEIR addresses potential impacts to Farmland as defined under CEQA guidelines and statues which primarily focus on the conversion of Prime farmland, Unique Farmland or farmland of statewide importance. Dairies, while often located on prime farmland are considered agricultural businesses. The Recirculated Draft EIR adequately addresses the conversion of farmland as defined by CEQA in Section 4.2, Land Use and Agriculture. Impacts to dairies in the project area are discussed further in the Response to Comment 25 submitted by this same commenter.

COMMENT 32.3. This comment asserts the AME DEIR did not adequately address the changes in soil structure and changes in grading that would impact the fertility of the cropland soils.

RESPONSE 32.3. The temporary impacts to prime and important farmland during the construction of the AME project is addressed on page 4.2-15 of the Recirculated Draft EIR. Damage to crops or pastures may occur temporarily due to excessive dust generated by grading activities; however, these impacts are expected to be temporary in nature. Erosion potential and drainage issues are addressed in Section 4.9, Hydrology and Water Quality. With the implementation of the specific mitigation measures recommended in the Recirculated Draft EIR, impacts related to these issues would be less-then-significant.

Permanent impacts would result from conversion of prime and important farmland to non-agricultural use. These less-than-significant impacts are discussed on page 4.2-15 of the Recirculated Draft EIR. No revisions to the Recirculated Draft EIR are necessary.

COMMENT 32.4. The comment indicates that Alternative 1B would impact their residence and that they would prefer not to be impacted by the project.

RESPONSE 32.4. Refer to Response 15.3. A complete list of affected parcels (where any type of property take would be required) has been added and can be seen in Appendix D of this Final EIR. The specific number of homes and businesses affected by development of Alternative 1A or Modified Alternative 1B may slightly decrease once the final alignment is selected (the preliminary estimates are thought to be conservative) but are not anticipated to substantially increase.

COMMENT 32.5. This commenter expresses concern that their residence would be displaced by either Alternative 1A or 1B.

RESPONSE 32.5. Refer to Response 15.2, Response 22.2 and Response 32.4 above.

COMMENT 32.6. This comment express concern that the AME project will impact the properties they own in the project area.

RESPONSE 32.6. Property to be acquisition for the AME project would be govern by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and property owners that are impacted by the project would be fairly compensated for the land to be acquired. In addition, if the acquisition would result in the displacement of a residence, relocation assistance would also be provided.

Refer to Response 32.4.

COMMENT 32.7. This comment asserts the AME DEIR did not address potential impacts to displaced businesses.

RESPONSE 32.7. Refer to Response 22.2 for a discussion of impacts to displaced businesses.

COMMENT 32.8. This comment asserts the AME DEIR did not address agronomic practices and water delivery and return systems that would be affected by parcel splits.

RESPONSE 32.8. This comment is similar to the comments submitted in Comment Letter 25 from the same commenter. Please refer to responses to Comment Letter 25.

NEPA/CEQA RE-VALIDATION FORM

DIST./CO./RTE.	District 10/Merced/State Route 99
PM/PM	PM 19.3/PM 20.9
E.A. or Fed-Aid Project No.	EA 10-0G4400
Other Project No. (specify)	SCH No. 2006081138
PROJECT TITLE	Atwater-Merced Expressway (AME) Project
ENVIRONMENTAL APPROVAL TYPE	Environmental Impact Report (EIR)
DATE APPROVED	March 2009
REASON FOR CONSULTATION (23 CFR 771.129)	*Check reason for consultation:* ☐ *Project proceeding to next major federal approval* ☒ *Change in scope, setting, effects, mitigation measures, requirements* ☐ *3-year timeline (EIS only)*
DESCRIPTION OF CHANGED CONDITIONS	*The project sponsor, Merced County Association of Government (MCAG), and the California Department of Transportation (the Department) determined that a smaller-scale, stand-alone project would provide the best chance for the project to complete for scarce funding. This proposed project, named Atwater-Merced Express Phase 1A-Reduced Project focuses on the improvements related to the construction of the AME/SR 99 interchange, realignment improvements to SR 99, and the immediate connection to local roads.*

CEQA CONCLUSION:

Based on an examination of the changed conditions and supporting information, the following conclusion has been reached regarding appropriate CEQA documentation:

☐ **Original document remains valid. No further documentation is necessary.**

☒ **Only minor technical changes or additions to the previous document are necessary. An addendum has been or will be ☒ prepared and is ☒ included on the continuation sheets or ☐ will be attached. It need not be circulated for public review.** ***(CEQA Guidelines, §15164)***

☐ **Changes are substantial, but only minor additions or changes are necessary to make the previous document adequate. A Supplemental environmental document will be prepared, and it will be circulated for public review.** ***(CEQA Guidelines, §15163)***

☐ **Changes are substantial, and major revisions to the current document are necessary. A Subsequent environmental document will be prepared, and it will be circulated for public review.** ***(CEQA Guidelines, §15162)***

☐ **The CE is no longer valid. New CE is needed. Yes ☐ No ☐**

CONCURRENCE WITH CEQA CONCLUSION

I concur with the CEQA conclusion above.

Signature: Executive Director, Merced County Association of Governments — Date: 3-27-12

Signature: Project Manager — Date: 3-27-12

CONTINUATION SHEET(S)

1. CHANGES IN PROJECT DESIGN, E.G., SUBSTANTIAL SCOPE CHANGE; A NEW ALTERNATIVE; CHANGE IN PROJECT ALIGNMENT

The Atwater-Merced Expressway project ("AME project") is a proposed 7-mile long transportation corridor located in the northeast portion of Merced County. The AME project will be a new four-lane divided access controlled expressway between State Route (SR) 59 at Bellevue Road and SR 140 at Gurr Road. The expressway will include interchanges with major roadways (SR 99 and Santa Fe Drive) and signal-controlled intersections with local roads. The project will also include the realignment of some existing roads, including a portion of SR 99, and the extension of some local roads to connect with the new expressway.

The AME project was approved and an environmental impact report (EIR) was certified by the Merced County Association of Governments (MCAG) on March 19, 2009. The EIR (in particular, Chapter 3 of the Recirculated Draft EIR, November 2008) provides a detailed description of the AME project that was approved by MCAG. Modified Alternative 1B was selected as the approved alignment for the AME project. As described on page 3-27 of the Recirculated Draft EIR, the AME project is designed to be built in phases as traffic volumes increase in the region in the future. To date, the AME project is divided into three phases (or segments): Phase 1, Phase 2, and Phase 3. Due to funding constraints, Phase 1 has been further divided into three sub-phases: Phase 1A-Reduced, Phase 1A, and Phase 1B. MCAG is now moving forward with design and construction and has developed plans for the first phase of the project, Phase 1A-Reduced, the portion of the AME project located between Green Sands Avenue and State Route 99 (see **Figure 1**). Phase 1A-Reduced is the first phase of the approved Modified Alternative 1B alignment for the AME project.

In developing detailed designs for Phase 1A-Reduced, MCAG has identified several changes to the project design. These changes have been identified as necessary to reduce project costs, improve constructability, or in response to further consultation with project stakeholders, which have determined the changes are necessary to improve the overall design of the project. All of the proposed design changes are illustrated in **Figure 2**. With the exception of repaving Gurr Road and the relocation of a PG&E gas line, all of the proposed design changes would be located within the project study area analyzed in the EIR for the AME project. The repaving of Gurr Road was not included in the original AME project description but was determined to be necessary in consultation with the County to address the additional traffic that would use Gurr Road once the AME project is constructed.

Each of the design changes associated with Phase 1A-Reduced are described below in more detail:

1. **Modified SR 99 Interchange Ramp Locations.** The EIR analyzed a partial cloverleaf limited-access interchange connecting with a realigned portion of SR 99. In the northbound (NB) direction, the approved project included a diagonal off-ramp, a loop on-ramp, and a diagonal on-ramp. In the southbound (SB) direction, it included a diagonal off-ramp and a loop on-ramp, and a diagonal on-ramp. Phase 1A-Reduced would construct the diagonal off-ramp and the diagonal on-ramp in the northbound direction. The NB SR 99 loop on-ramp would not be constructed. Phase 1A-Reduced would modify the SB SR 99 ramp configuration from a diagonal off-ramp, loop on-ramp, diagonal on-ramp combination to a loop off-ramp, diagonal on-ramp combination. The original project included construction of 2-lane ramps for the AME/SR 99 interchange. It also included auxiliary lanes on SR 99 leading to the off-ramps. The Phase 1A Reduced project would construct one-lane ramps and no auxiliary lanes.

2. **Maintain Existing Buhach Road Overcrossing Structure.** The original AME project description envisioned the removal of the existing Buhach overcrossing of SR 99 and replacing it at another location. Phase 1A-Reduced would retain the existing Buhach Road overcrossing of SR 99.

3. **No Canal Creek Realignment.** The original AME project included realigning Canal Creek around the proposed interchange of the AME and SR 99. The modified ramp locations described under item 1 above result in no longer needing to realign Canal Creek. Instead clear-spanning bridge structures will be used for SR 99 and ramps to cross over the creek.

4. **Broadway Avenue and Northbound On- and Off-Ramps to Buhach Road.** The original AME project included closing the northbound SR 99 on- and off-ramps to Buhach Road and realigning Broadway Avenue to extend underneath a new Buhach Road overpass to connect with the western remnant of Ashby Road. Phase 1A-Reduced would still close the northbound on- and off-ramps to Buhach Road but would not

construct a new Buhach Road overpass (see item 2 above). As a result, Broadway Avenue would be realigned to tie into the existing Buhach Road.

5. **Green Sands Avenue and Atwater-Merced Expressway Improvements.** The original AME project included construction of four lanes on Green Sands Avenue and Atwater-Merced Expressway. The Phase 1A-Reduced would construct only two lanes on these facilities. However, sufficient right of way would be acquired to accommodate future widening to four lanes.

6. **Repaving Gurr Road between Ashby Road and Green Sands Avenue.** The original AME project included reconstructing the intersection of Gurr Road and Green Sands Avenue and a portion of Gurr Road to the south for approximately 1,500 feet. Phase 1A-Reduced includes reconstructing the intersection, and extends the pavement replacement of Gurr Road to Ashby Road. In addition, Phase 1A-Reduced would change the triangular intersection of Gurr Road and Ashby Road to a roundabout configuration.

7. **Utility Relocations.** The original AME project did not identify specific utility relocations. In developing the design for Phase 1A-Reduced, 5,000-linear feet (lf) of an existing AT&T fiber optic line and 5,000-lf of an existing 8" underground Pacific Gas & Electric (PG&E) gas transmission line will need to be relocated (see **Figure 3**). The existing AT&T fiber optic line located within Ashby Road would be relocated to a 20-foot Public Utility Easement (PUE) along the northern right-of-way line of SR 99. The existing PG&E gas transmission line located along the outside shoulder of southbound SR 99 would be relocated to a 50-foot exclusive easement south of SR 99, adjacent to Southern Pacific Avenue. These alignments would cross under Canal Creek.

   Construction to install pipelines under roadways (including SR 99 and North Buhach Road) and Canal Creek would utilize horizontal directional drilling[1] (HDD), a trenchless construction method. In other areas, trenching and open-cut methods would be used to install the pipelines. Because the utilities would be routed underneath Canal Creek via HDD, impacts to Canal Creek would be avoided. Areas disturbed due to pipeline installation (trenching and open cut areas) would be restored to their original condition following construction.

   Other utility relocations, such as overhead electric distribution lines and irrigation pipes would also occur as part of Phase 1A-Reduced. All other utility relocations would occur within the original project study area and thus do not warrant additional study.

8. **Ashby Road Cul-de-Sac at Canal Creek.** The original AME project did not include constructing a cul-de-sac on Ashby Road at Canal Creek. At the request of the County of Merced, Phase 1A-Reduced will include the construction of this cul-de-sac to provide access for the landowners of the parcels in the area.

2. CHANGES IN ENVIRONMENTAL SETTING, E.G., NEW DEVELOPMENT AFFECTING TRAFFIC OR AIR QUALITY;

There are no changes to the environmental setting of the project.

3. CHANGES IN ENVIRONMENTAL CIRCUMSTANCES, E.G., A NEW LAW OR REGULATION; CHANGE IN THE STATUS OF A LISTED SPECIES.

Changes to the project's environmental circumstances are discussed below.

2009 CEQA Guidelines Update

Since certification of the 2009 EIR, the CEQA Guidelines have been updated with regard to the analysis of forest and timberland resources, greenhouse gas emissions, and energy use associated with a project. Discussions below in **Section 4.2, Land Use and Agriculture; 4.15, Greenhouse Gas Emissions**; and **4.16, Energy**, address the project's impacts in these topic areas.

[1] Horizontal directional drilling (HDD) is a surface-launched process whereby a pilot bore is drilled by pushing a drill pipe and drill bit from the entry point along a curved pathway to the exit point. When the pilot bore is complete, the bore is reamed in one or more passes to enlarge the bore to the diameter that can accommodate the pipe. The pipe is then pulled into the bore back to the entry point. This method limits surface ground disturbances.

San Joaquin Valley Air Basin Attainment Status

On September 25, 2008, EPA re-designated the San Joaquin Valley Air Basin to attainment for the PM_{10} National Ambient Air Quality Standard (NAAQS) and approved the PM_{10} Maintenance Plan.

Per the 2009 EIR, the project would not result in a cumulatively considerable net increase of criteria pollutants (including PM_{10}) for which the project region in in nonattainment under the NAAQS or California Ambient Air Quality Standards (CAAQS). The AME is included in the MCAG's 2007 Regional Transportation Plan (RTP), which is developed in conformity with the region's air quality State Implementation Plan (SIP). As required under both federal and state law, projects included in the RTP are included in the mandatory air quality analyses, demonstrating that the RTP is in compliance with emission budgets established by the region's SIP. Thus, both construction and motor vehicle operations emissions of the AME have already been planned and accounted for.

The project would however, result in temporary increases in PM_{10} emissions during construction. **Mitigation Measure AQ-1** in the prior EIR requires compliance with the San Joaquin Air Pollution Control District's Regulation VIII which establishes best management practices to limit the generation and release of particulate matter resulting from construction activities.

Thus, the re-designation of PM_{10} from nonattainment to attainment status would not introduce new impacts. Phase 1A-Reduced would be subject to the same provisions identified in the environment document, and would not introduce any project elements that would affect the determination of the 2009 EIR.

Particulate Matter ($PM_{2.5}$) Hot Spot Analysis

The project is located in Merced County which is part of the San Joaquin Valley Air Basin; the Air Basin is in nonattainment for $PM_{2.5}$. As of December 2010, projects in areas of nonattainment that are not exempt from the project-level conformity process (generally widening projects) and seek NEPA approval are required to receive a project-level conformity determination from the Federal Highway Administration (FHWA) or California Department of Transportation (Department). These "projects of air quality concern," as defined in 40 CFR 93.123(b)(1), are required to complete a $PM_{2.5}$ hot-spot analysis pursuant to Federal Conformity Regulations and are required to engage in interagency consultation with the Merced County Association of Governments (MCAG).

The AME project however is not subject to NEPA review or approval and thus is not required to conduct a $PM_{2.5}$ hot spot analysis or obtain a project-level air quality conformity determination.

4. CHANGES TO ENVIRONMENTAL IMPACTS OF THE PROJECT, E.G., A NEW TYPE OF IMPACT, OR A CHANGE IN THE MAGNITUDE OF AN EXISTING IMPACT.

4.1 Consistency with Existing Plans and Policies

The proposed design refinements would not introduce new impacts that would result in an inconsistency with existing plans and policies. Phase 1A-Reduced would be subject to the same provisions identified in the environment document, and would not introduce any project elements that would affect the determination of the 2009 EIR.

4.2 Land Use and Agriculture

Per the 2009 CEQA Guidelines update, an analysis regarding project impacts to forest and timberland resources is required. The project study area is located within Merced County and the City of Atwater's sphere of influence and consists primarily of agricultural and suburban land uses. No part of the project study area is zoned for forest land or timber-harvesting uses. In addition, no lands adjacent to the project study area are designated for forest or timberland uses. Thus, the project would not impact any forest and timberland resources.

The proposed design refinements would not introduce new impacts to land use and agricultural resources. Phase 1A-Reduced would be subject to the same provisions identified in the environment document, and would not introduce any project elements that would affect the determination of the 2009 EIR.

4.3 Population, Housing, and Employment

The AME project evaluated in the 2009 EIR would result in the displacement of several businesses and homes. Conservative estimates for displacement due to implementation of Phase 1A are documented in the EIR. Phase 1A would displace 9 businesses, 19 homes and approximately 60 people.

Due to the reduction in scale of the project, Phase 1A-Reduced would result in fewer displacements than envisioned and evaluated in the 2009 EIR. As shown in **Table 1** and **Figure 4**, Phase 1A-Reduced would displace 3 businesses and 8 homes.

Table 1. AME Project Displacement Properties under Phase 1A-Reduced

Parcel No.*	Assessor Parcel Number (APN)	Existing Use	Type of Take
1	005-190-012	Commercial	RV Sales
2	005-190-013	Residential	Residence
3	005-190-014	Residential	Residence
4	005-190-015	Residential	Residence
5	005-190-022	Residential	Residence
6	005-190-021	Residential	Residence
7	005-190-017	Residential	Residence
8	005-190-018	Residential	Residence
10	005-120-021	Commercial	Residence
12	005-120-012	Commercial	Veterinarian Office and Kennels
13	005-120-011	Commercial	RV Repair

* Refer to Parcel Numbers of **Figure 4**.
Source: Mark Thomas & Co, 2011.

As described in the 2009 EIR, there is sufficient available housing and commercial resources to accommodate the businesses and residents that would be displaced by the project. The prior EIR discusses relocation benefits, including financial compensation and assistance for displaced residents and businesses.

The proposed design refinements would result in fewer displacements than previously evaluated and would not introduce any project elements that would affect the determination of the 2009 EIR.

4.4 Visual Resources

The proposed design refinements would not introduce new impacts to visual resources. Phase 1A-Reduced would be subject to the same provisions identified in the environment document, and would not introduce any project elements that would affect the determination of the 2009 EIR.

4.5 Traffic and Transportation

Phase 1A-Reduced would be concentrated within the portion of area bound by Green Sands Avenue to the north, Buhach Road to the west, Gurr Road to the east, and SR 99 to the south. Due to the reduction in scale of the project, a Supplemental Traffic Analysis (**Appendix A**) was prepared to evaluate the traffic and circulation implications of implementing Phase 1A-Reduced. Phase 1A-Reduced was evaluated under 2015 (opening year) and 2035 (horizon year) conditions to identify deficiencies to ascertain when capacity would be exceeded.

Seven intersections were analyzed for the operation under 2015 and 2035 (see Figure 1 of **Appendix A**). All four SR 99 freeway on- and off-ramps to AME, including NB off to AME, NB on from AME, SB loop off to AME, and SB on from AME, were evaluated for freeway merge-diverge operations. AME, between SR 99 and Green Sands Avenue/Belcher Avenue, and Green Sands Avenue/Belcher Avenue, between Buhach Road and AME, were also analyzed for two-lane segment operations.

Based on the results, for opening year 2015, all seven intersections studied would operate at acceptable level of service (LOS). Analysis of the four NB and SB on- and off-ramps at the AME would also operate at acceptable levels in the freeway merge-diverge analysis. Further, the two-lane segments of AME and Green Sands Avenue/Belcher Avenue would also operate at acceptable levels for opening year 2015 conditions.

A 20-year horizon was projected out from opening year (2015) for Phase 1A-Reduced. For year 2035, four intersections would operate at unacceptable levels. These intersections include: Ashby Road/Buhach Road

(eastbound), AME/SR 99 NB Ramps[2] (westbound right-turn), Buhach Road/Belcher Avenue (westbound left-turn and southbound left-turn), and Buhach Road/Clover Avenue (westbound). When AME/SR 99 NB Ramps intersection is analyzed as an intersection with signal control, the intersection would operate at an acceptable level.

The four SR 99 NB and SB ramps at the AME would operate at acceptable levels in the freeway merge-diverge analysis for 2035. However, the two-lane segments of AME and Green Sands/Belcher Avenue would not operate at acceptable levels for horizon year 2035 conditions.

To address the unacceptable levels of operation for the four intersections and two-lane segments, mitigation measures have been developed for horizon-year 2035 conditions (see **Section 5** below). These measures include installing signals when signal warrants are met and traffic monitoring to evaluate traffic operations.

Construction associated with Phase 1A-Reduced would require the closure of the SR 99 NB off-ramp and SR 99 SB on- and off-ramps at the Buhach Road Interchange for up to one year's time. Closures of the SR 99 on-and off-ramps will be conducted in stages; SR 99 NB off-ramps will be closed for approximately 5 months and the SR 99 SB on- and off-ramps would be closed for approximately 12 months. The two closures (NB and SB ramps) would overlap for approximately two months. Detoured traffic will shift mainly to Applegate Interchange, located approximately two miles north of the Buhach Road Interchange along SR 99. A Supplemental Traffic Analysis (attached as **Appendix B**) was prepared to evaluate the impacts resulting from the closure of both the NB and SB SR 99 on-and off-ramps and traffic implications during construction.

Eight intersections were analyzed to determine potential construction-period effects of closing the Buhach Road/SR 99 NB/SB on- and off-ramps (See Figure 1 of **Appendix B**). The four scenarios evaluated in the Supplemental Traffic Analysis are listed below:

1) Scenario 1: 2015 Baseline – Buhach Road/ SR 99 Ramps Open
2) Scenario 2: 2015 Buhach Road/ SR 99 NB Ramp Closure
3) Scenario 3: 2015 Buhach Road/ SR 99 SB Ramp Closure
4) Scenario 4: 2015 Buhach Road/ SR 99 Concurrent (both NB and SB) Ramp Closure

The analysis determined that closure of the Buhach Road and SR 99 NB on-and off-ramps (Scenario 2) would cause the least disruption to operations at adjacent ramps when compared to the closure of the SB ramps (Scenario 3) or concurrent closures (Scenario 4). Under Scenario 2, no study intersections are projected to operate at unacceptable levels. Closure of the Buhach Road and SR-99 SB on- and off-ramps (Scenario 3) is projected to result in two intersections failing during the AM/PM peak hours. Concurrent closure of both the northbound and southbound ramps (Scenario 4) will collectively cause the greatest added average control delay to study area intersections. Concurrent closure will not however increase the number of intersections operating unacceptably relative to the southbound on- and off-ramp closure scenario.

Mitigation requiring signage to be provided along SR 99 and within the City of Atwater to reroute diverted traffic during the closure of Buhach Rood/SR 99 ramps has been included in **Section 5** of this re-valuation form to address traffic implications during construction.

4.6 Noise

Implementation of Phase 1A-Reduced would be concentrated within the portion of area bound by Green Sands Avenue to the north, Buhach Road to the west, Gurr Road to the east, and SR 99 to the south. Due to the reduction in scale of the project, Phase 1A-Reduced would impact fewer noise receivers than evaluated in the 2009 EIR. However, construction of the project would result in a substantial temporary or periodic increase to ambient noise levels and groundborne vibration in the project area as described in the prior environmental document. Although Phase 1A-Reduced would be smaller in scale compared to the larger project analyzed in the 2009 EIR, construction-period noise impacts would still occur.

Mitigation measures identified in EIR to reduce adverse impacts from temporary increases in noise level and groundborne vibration in the project area during project construction include:

- Construction-related noise requirements, such as limiting the hours of construction, notifying sensitive receptors of the construction schedule, routing construction traffic through designated truck routes, etc.
- Use all available techniques, including the construction of sound walls or earthen berms, and /or use of quiet paving material, to reduce exterior noise levels at impacted noise receivers.

[2] Analyzed as an unsignalized intersection.

As evaluated in the prior EIR, the project would construct a new roadway and therefore create a new source of noise within the project area. Given the reduction in size and scale of the project, Phase 1A-Reduced would result in fewer noise receivers impacted than envisioned and evaluated in the 2009 EIR. Only one receiver would remain impacted by the project. Per the 2009 EIR, Receiver 44, located to the northeast the Green Sands Avenue/North Gurr Road intersection, would experience a permanent increase in ambient noise levels which are in excess of local standards. Even with mitigation measures to reduce the permanent noise impacts generated by the project, this permanent noise increase for the receiver remains significant and unavoidable.

Phase 1A-Reduced would be subject to the provisions identified in the prior EIR, and would not introduce any project elements that would affect the determination of the 2009 EIR.

4.7 Air Quality

The proposed design refinements would not introduce new impacts to air quality in the project area. Phase 1A-Reduced would be subject to the same provisions identified in the environmental document, and would not introduce any project elements that would affect the determination of the 2009 EIR.

4.8 Geology, Soils, and Seismicity

The proposed design refinements would not result in new impacts. Phase 1A-Reduced would be subject to the same provisions identified in the environmental document, and would not introduce any project elements that would affect the determination of the 2009 EIR.

4.9 Hydrology and Water Quality

Phase 1A-Reduced would remove two bridge structures (northbound and southbound SR 99) at Canal Creek. The removal of these bridges would also involve removal of columns within the creek which could require the placement heavy equipment in the creek during removal. These activities would be temporary and limited to the construction-period. Mitigation measures included in the prior EIR, including consistency with the National Pollutant Discharge Elimination System (NPDES) permit, preparation of a Storm Water Pollution Prevention Plan (SWPPP) including construction control measures would reduce hydrology and water quality impacts to Canal Creek to a less-than-significant level.

The proposed design refinements would not result in new impacts to hydrology or water quality. Phase 1A-Reduced would be subject to the same provisions identified in the environment document, and would not introduce any project elements that would affect the determination of the 2009 EIR.

4.10 Hazards and Hazardous Materials

The proposed design refinements would not result in new impacts. Phase 1A-Reduced would be subject to the same provisions identified in the environment document, and would not introduce any project elements that would affect the determination of the 2009 EIR.

4.11 Biological Resource and Wetlands

No Canal Creek Realignment

The EIR evaluated the realignment of Canal Creek around the proposed interchange of the AME and SR 99. Canal Creek was found to provide suitable or potentially suitable habitat for several sensitive species. However, Phase 1A-Reduced would not include ramp modifications that would result in the need to realign Canal Creek. Instead clear-span bridge structures will be used for SR 99 and ramps to cross over the creek. This modification would avoid impacts to the suitable or potentially suitable habitat within Canal Creek for several species, including the giant garter snake, hardhead, and the western pond turtle (formerly known as Pacific pond turtle). Mitigation measures provided in the EIR would reduce all impacts to biological resources, including special-status species, habitats, and jurisdictional wetlands, to a less-than-significant level.

Phase 1A-Reduced would remove two bridge structures (northbound and southbound SR 99) at Canal Creek. The removal of these bridges could require the placement heavy equipment into the creek. These activities would be temporary and limited to the construction-period. Mitigation measures included in the prior EIR, including avoidance and minimizations measures, pre-construction surveys for species, and implementation of species buffers and barriers, would reduce impacts to species in Canal Creek to a less-than-significant level.

Utility Relocations

In developing the design for Phase 1A-Reduced, 5,000-lf of an existing underground AT&T fiber optic line and 5,000-lf of an existing 8" underground PG&E gas transmission line will need to be relocated (See **Figure 3**). The existing AT&T fiber optic line located within Ashby Road would be relocated to a 20-foot PUE along the northern right-of-way line of SR 99. The relocation of the AT&T fiber optic line would be located within the original project study area for biological resources. However the original study did not evaluate potential impacts from HDD under Canal Creek. The existing PG&E gas transmission line located along the outside shoulder of southbound SR 99 would be relocated to a 50-foot exclusive easement south of SR 99, adjacent to Southern Pacific Avenue which would be outside of the original project study area for biological resources. Since the installation of the AT&T alignment via HDD under Canal Creek and the PG&E realignment would occur in areas outside the original project study area, a Biological Resources Analysis (attached as **Appendix C**) of these relocations has been prepared to determine if any biological resources would be potentially impacted. The proposed realignments would be located within and along disturbed agricultural lands and road right-of-ways. Due to the highly disturbed nature of the land, no special-status plant species are expected to occur along or near the utility alignment. Canal Creek, a "waters of the U.S," is located perpendicular to the utility alignments; however, because the utilities would be routed underneath Canal Creek via HDD, potential impacts to the creek would be avoided.

Five special-status wildlife species, including the Swainson's hawk, western burrowing owl, tricolored blackbird, western pond turtle, and the San Joaquin kit fox, were identified as potentially occurring in the vicinity of the proposed utility realignments. All five species and associated potential impacts were also identified in the 2009 EIR. The following mitigation measures included as part of the 2009 EIR would reduce potential impacts to wildlife species that may be present in the area to a less-than-significant level:

- **Mitigation Measure BIO-1f**, mitigation for the western pond turtle
- **Mitigation Measure BIO-1g**, mitigation for nesting raptors
- **Mitigation Measure BIO-1h**, mitigation for the Swainson's hawk
- **Mitigation Measure BIO-1i-1** through **BIO-1i-5**, mitigation for the western burrowing owl
- **Mitigation Measure BIO-1j**, mitigation for common and special-status nesting passerine birds
- **Mitigation Measure BIO-1k**, mitigation for the San Joaquin kit fox

Other Changes in Project Design

Other project changes discussed above in Changes in Project Design (**Section 1**), including modifying the SR 99 interchange ramp locations, maintaining the existing Buhach Road overcrossing structure, realigning Broadway Avenue to tie into the existing Buhach Road, minimizing the number of lanes constructed on Green Sands Avenue and the Atwater Merced Expressway, repaving Gurr Road between Ashby Road and Green Sands Avenue, and constructing a cul-de-sac on Ashby Road at Canal Creek would not introduce any new impacts to biological resources beyond the determination of the 2009 EIR. Because these project changes are located within the original study area and that no new construction methods beyond what was analyzed in the 2009 EIR would occur, these changes to the project design would not result in new or more significant impacts to biological resources.

4.12 Paleontological and Cultural Resources

Construction of the Buhach overpass over SR 99 evaluated as part of the 2009 EIR would occur in close proximity to the Buhach Catholic Church, which has been identified historical resource, may result in damage to or destabilization of the structure. However, Phase 1A-Reduced would not include a new overpass for Buhach Road and would retain the existing Buhach Road overcrossing of SR 99 thereby avoiding the potential impact to the Buhach Catholic Church.

In developing the design for Phase 1A-Reduced, 5,000-lf of an existing underground AT&T fiber optic line and 5,000-lf of an existing 8" underground PG&E gas transmission line will need to be relocated (See **Figure 3**). The existing AT&T fiber optic line located within Ashby Road would be relocated to a 20-foot PUE along the northern right-of-way line of SR 99. The existing PG&E gas transmission line located along the outside shoulder of southbound SR 99 would be relocated to a 50-foot exclusive easement south of SR 99, adjacent to Southern Pacific Avenue. Although the records search conducted as part of the 2009 EIR encompassed the proposed utility alignment, portions of the PG&E alignment are located outside the original survey area and required

additional field surveys. A supplemental field survey was conducted and cultural resources letter report (attached as **Appendix D**) has been prepared to determine if any paleontological or cultural resources may be potentially impacted as a result of the utility relocation activities. No archeological resources were identified in the utility realignment area. The soils underlying the utility alignment have a low to very low potential for containing buried archeological or paleontological resources. Thus, the utility realignment would not create a new or more significant impact to paleontological and cultural resources.

The proposed design refinements would avoid impacts to this historical resource and would not introduce any project elements that would affect the determination of the 2009 EIR.

4.13 Utilities and Service Systems

The prior EIR did not identify specific utility relocations. In developing the design for Phase 1A-Reduced, 5,000-lf of an existing underground AT&T fiber optic line and 5,000-lf of an existing 8" underground PG&E gas transmission line will need to be relocated (See Figure 3). The existing AT&T fiber optic line located within Ashby Road would be relocated to a 20-foot PUE along the northern right-of-way line of SR 99. The existing PG&E gas transmission line located along the outside shoulder of southbound SR 99 would be relocated to a 50-foot exclusive easement south of SR 99, adjacent to Southern Pacific Avenue. This alignment would cross under Canal Creek and SR 99 at Valley Drive and North Buhach Road. Because the utilities would be routed underneath Canal Creek via HDD, impacts to Canal Creek would be avoided. Utility work crossing Canal Creek would require a permit from the Central Valley Flood Protection Board. **Mitigation Measure UTIL-2** below in **Section 5** has been provided to address the required approvals and permits needed for utility relocations that cross Canal Creek. Areas disturbed due to pipeline installation would be restored to their original condition following construction. This utility realignment would not create a new or more significant impact on to utility and service systems. Thus, the proposed design refinements would avoid impacts to utility and service systems and would not introduce any project elements that would affect the determination of the 2009 EIR.

4.14 Public Services

The 2009 EIR concluded that the project construction may require detours and lane closures on existing roadways in the project area which may adversely affect emergency service response, as well as the Sheriff, Police, and Fire Department's response times in the project area. In developing the design for Phase 1A-Reduced, construction would require the closure of the SB on- and off-ramps at the Buhach Road Interchange for up to one year's time. This interchange closure was not evaluated in the 2009 EIR. Closures of the SR 99 on-and off-ramps will be conducted in stages; SR 99 NB off-ramps will be closed for approximately 5 months and the SR 99 SB on- and off-ramps would be closed for approximately 12 months. The two closures (NB and SB ramps) would overlap for two months. Detoured traffic will shift mainly to Applegate Interchange, located approximately two miles west of the Buhach Road Interchange along SR 99.

The closure of SR 99 on- and off-ramps for an extended period of time may delay emergency service's response times to service calls in the project area. These closures would affect how emergency service providers would travel to certain portions of the project area, and could increase response times. **Mitigation Measure PS-3** provided in the 2009 EIR required the preparation of a Traffic Management Plan to ensure coordination between construction contactor's and public safety providers to minimize or eliminate interference with provisions of police, fire, and emergency medical services. In addition, emergency service providers would receive advance notice of all necessary lane closures and detours as a result of project construction.

However, given the extended period of time associated with the SR 99 ramp closures at the Buhach Road Interchange, a Supplemental Traffic Analysis (attached as **Appendix B**) was prepared to evaluate the impacts resulting from the closure and traffic implications during construction. The Traffic Analysis recommended providing signage along SR 99 and within the City of Atwater for rerouting traffic in the project area. This recommendation has been included as a mitigation measure below in **Section 5** to address potential delays experienced by emergency service providers during project construction.

4.15 Greenhouse Gas Emissions

An individual project does not generate enough greenhouse gas (GHG) emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In California, transportation sources (passenger cars, light duty trucks, other trucks, buses and motorcycles) makeup the largest source of greenhouse gas (GHG) emitting sources. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

There are four primary strategies for reducing GHG emissions from transportation sources: (1) improve system and operation efficiencies, (2) reduce growth of vehicle miles traveled (VMT), (3) transition to lower GHG fuels, and (4) improve vehicle technologies.

One of the main strategies to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occurs at stop-and-go speeds (0-25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0-25 miles per hour. To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, GHG emissions, particularly CO_2, may be reduced.

Implementation of the project would result in improved traffic operations at the majority of study intersection when compared to the No Build Alternative. This would benefit regional transportation by reducing traffic congestion and decrease travel times during peak hours. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. Although the project would result in a temporary increase in GHG emissions during construction, the project would result in long-term GHG reduction benefits by reducing traffic congestion and decreasing travel times during peak hours.

4.16 Energy

Energy expenditures associated with a project can be divided into those used during construction and those used during operation. Construction activities would result in energy and non-renewable resource usage to power construction equipment. In addition, construction activities would also result in embedded energy requirements for the extraction, manufacturing, and delivery of building materials (e.g., metals, cement, and aggregate) for transportation facilities.

Transportation is the largest energy and non-renewable resource consumer in the state, accounting for 60 percent of total energy use.[3] On-road vehicles are estimated to consume approximately 80 percent of California's transportation energy demand, with automobiles, trucks, and buses accounting for nearly all of the on-road fuel consumption. Automobile fuel efficiency decreases considerably as travel speeds decrease below 30 miles per hour and stop-and-go traffic increases. Fuel efficiency decreases on travel corridors that are congested; thus, increasing fuel-consumption.

Although the project would result in a temporary increase in energy expenditures during construction, the project would result in long-term energy efficiency benefits by reducing traffic congestion and decreasing travel times during peak hours, thereby increasing fuel efficiency.

5. CHANGES TO AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES SINCE THE ENVIRONMENTAL DOCUMENT WAS APPROVED.

Additions, deletions, and modifications to the project's avoidance, minimization, and/or mitigation measures are discussed below.

The following mitigation measures are in addition to the

Mitigation Measures TRAF-2a through **TRAF-2c** are provided to address unacceptable level of operation for intersections and roadways in the project area for horizon-year 2035.

> **Mitigation Measure TRAF-2a:** *Two-Lane Segments−AME, between SR 99 and Green Sands Avenue, and Green Sands Avenue, between Buhach Road and AME.* The 2-lane segment of AME Phase 1A-Reduced is expected to operate at acceptable level of services (LOS D or better) until 2024 and the 2-lane segment of Green Sands Avenue is expected to operate at acceptable level of services (LOS"D") or better until 2022. It should be noted that the segment LOS for Green Sands Avenue was computed using the Highway Capacity Manual 2-Lane highway analysis procedure. Given the presence of signalized intersections at Buhach Road and the AME, the 2-lane highway measure of effectiveness (percent time spent following) may not be a valid approach under future conditions. Hence, operational performance of this county roadway is more appropriately determined by the operations of the signalized intersections at Buhach Road and the AME. Both these intersection are shown to meet operational design year requirements.

[3] California Energy Commission, 2007.

Given that the roadway's intersections are shown to meet design year requirements and the stated questionable validity of applying the rural 2-lane highway LOS procedure to this county roadway under future conditions – it is recommended that MCAG consult with the County of Merced to determine appropriate actions (if any) should be taken. At a minimum, it is recommended that these agencies implement a monitoring program to evaluate traffic conditions on this roadway after construction of the AME Phase 1A Reduced to evaluate traffic operations.

Mitigation Measure TRAF-2b: *AME/SR99 NB Off-Ramp Intersection.* The intersection of AME/SR 99 NB Off-Ramp is projected to operate acceptably as a stop controlled intersection until 2034 (one your shy of the design year). Based on 2035 volumes, this intersection would also satisfy peak hour signal warrants. However, based on simulated results, queue spill-back conditions onto the SR 99 mainline is not projected to occur throughout the design year. A traffic signal shall be considered at this intersection when signal warrants are met.

Mitigation Measure TRAF-3 is provided to address traffic implications during project construction as Phase 1A-Reduced would require the closure of the SR 99 NB off-ramp and SR 99 SB on- and off-ramps at the Buhach Road Interchange for up to one year's time.

Mitigation Measure TRAF-3: During construction, provide adequate signage along SR 99 and within the City of Atwater for the rerouting of diverted traffic consistent with the redistribution illustrated in Figure 2 through Figure 4 of the Supplemental Traffic Analysis (**Appendix B**) during the closure of Buhach Road/SR 99 ramps.

Mitigation Measure UTIL-2 has been provided to address utility relocation impacts crossing Canal Creek, as discussed above in **Section 4.13**.

Mitigation Measure UTIL-2: Prior to relocating utility lines under Canal Creek, required permits and approvals shall be obtained from the Central Valley Flood Protection Board.

Several mitigation measures included in the 2009 EIR do not apply to the project due to the reduction in project limits and scope. Mitigation measures that are not applicable to Phase 1A-Reduced and thus have been excluded from the project's mitigation monitoring and reporting program (attached as **Appendix E**) or have been modified include:

Mitigation Measures Not Applicable to Phase 1A-Reduced

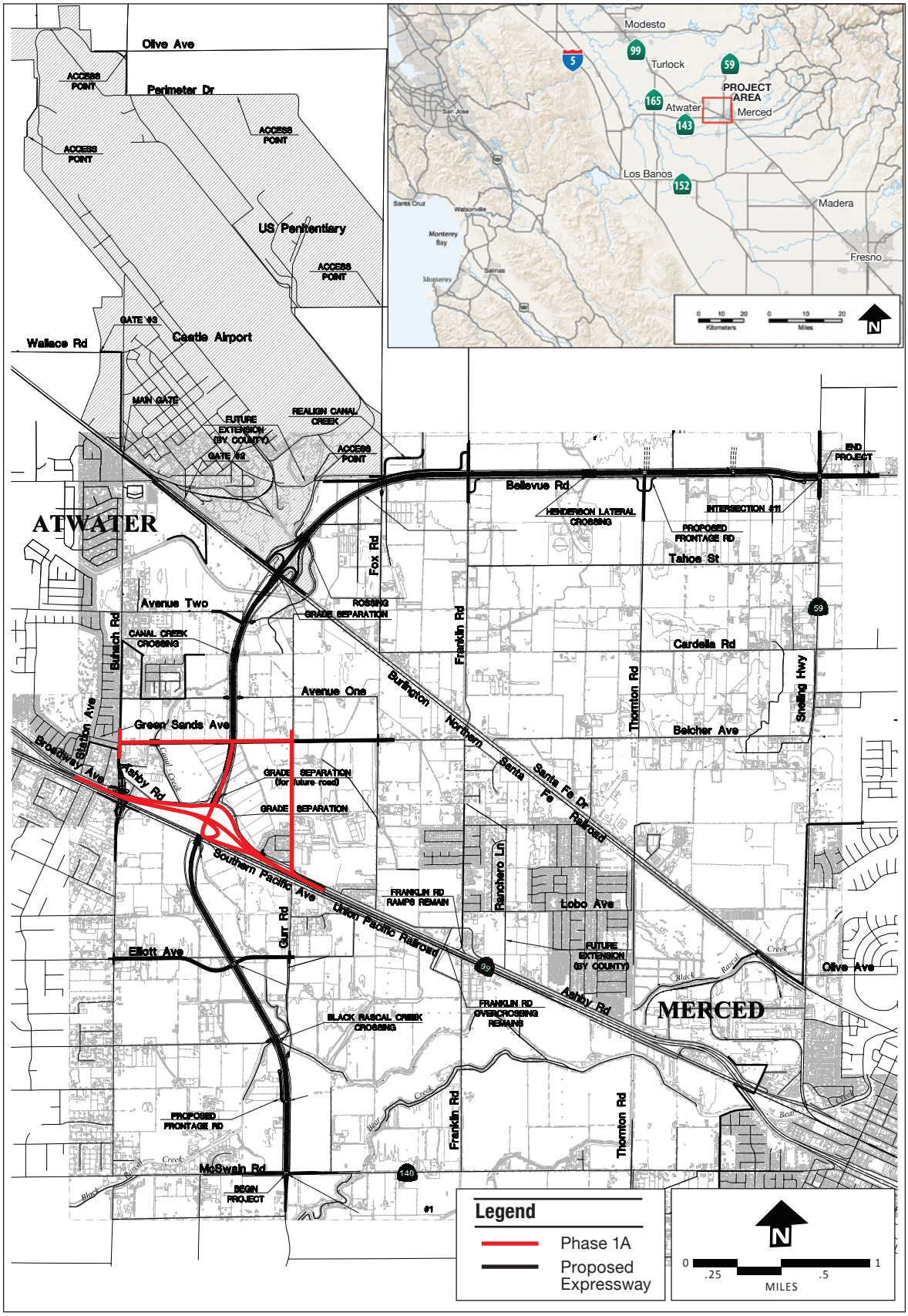
- Mitigation Measure GEO-4c
- Mitigation Measure HWQ-4b
- Mitigation Measure HWQ-6
- Mitigation Measure HWQ-7
- Mitigation Measure HAZ-6b
- Mitigation Measure HAZ-6c
- Mitigation Measure CULT-2
- Mitigation Measure CULT-3
- Mitigation Measure PS-4a
- Mitigation Measure PS-4b

Mitigation Measures Modified

- Mitigation Measure VIS-3
- Mitigation Measure HWQ-1e
- Mitigation Measure HWQ-5a
- Mitigation Measure UTIL-1
- Mitigation Measure PS-1

6. CHANGES TO ENVIRONMENTAL COMMITMENTS SINCE THE ENVIRONMENTAL DOCUMENT WAS APPROVED, E.G., THE ADDITION OF NEW CONDITIONS IN PERMITS OR APPROVALS. WHEN THIS APPLIES, APPEND A REVISED ENVIRONMENTAL COMMITMENTS RECORD (ECR) AS ONE OF THE CONTINUATION SHEETS.

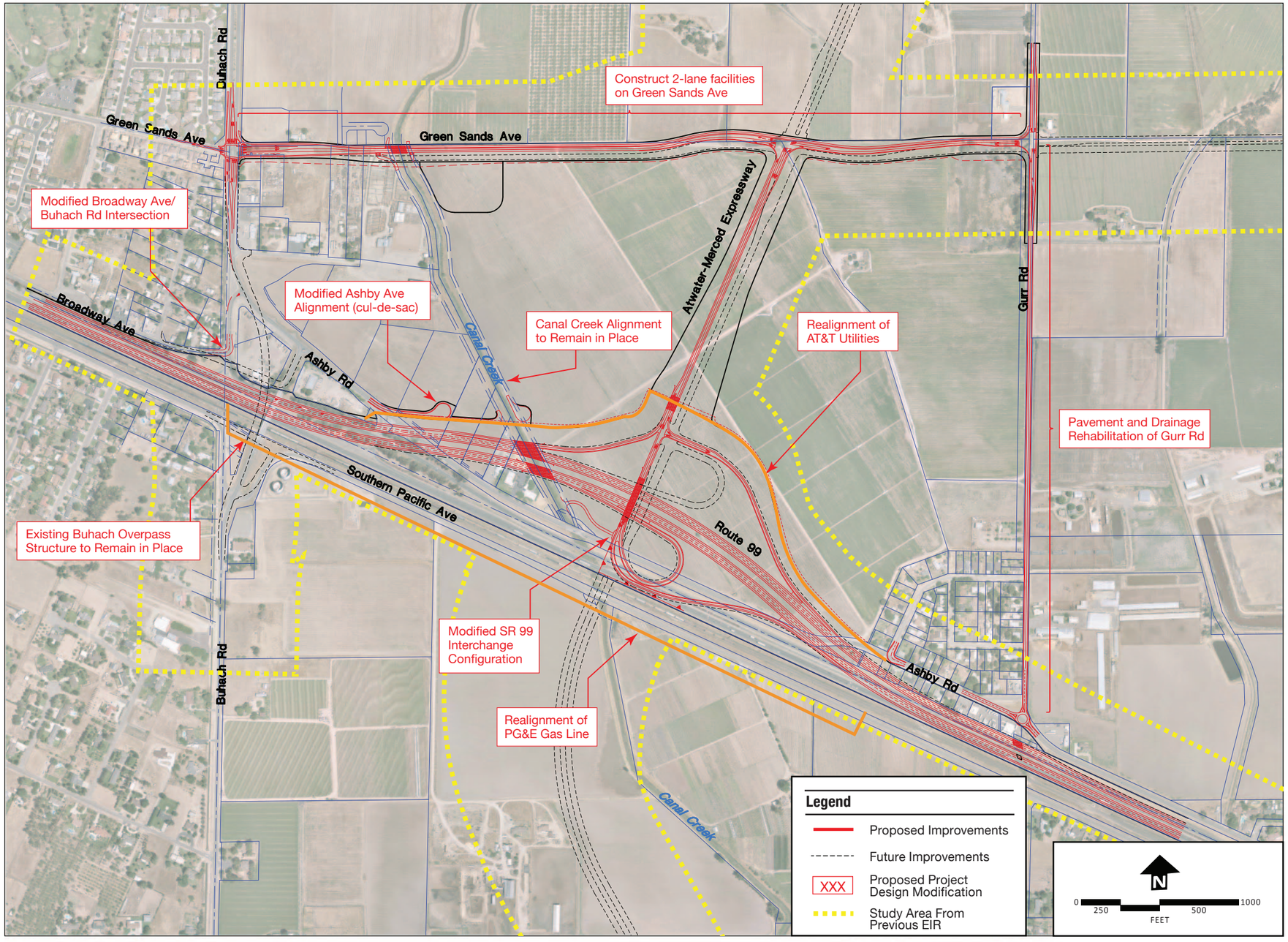
Additions and changes to the mitigation monitoring reporting program (MMRP) for the Atwater Merced Expressway Phase 1A-Reduced is attached as **Appendix E** Additional mitigation provided in **Section 5** is included and denoted in **bold underline** text. Mitigation measures that do not apply to Phase 1A-Reduced are removed and denoted in ~~strikeout~~ text.



Project Location **Figure 1**

Source: Mark Thomas & Company, Inc., 2011.

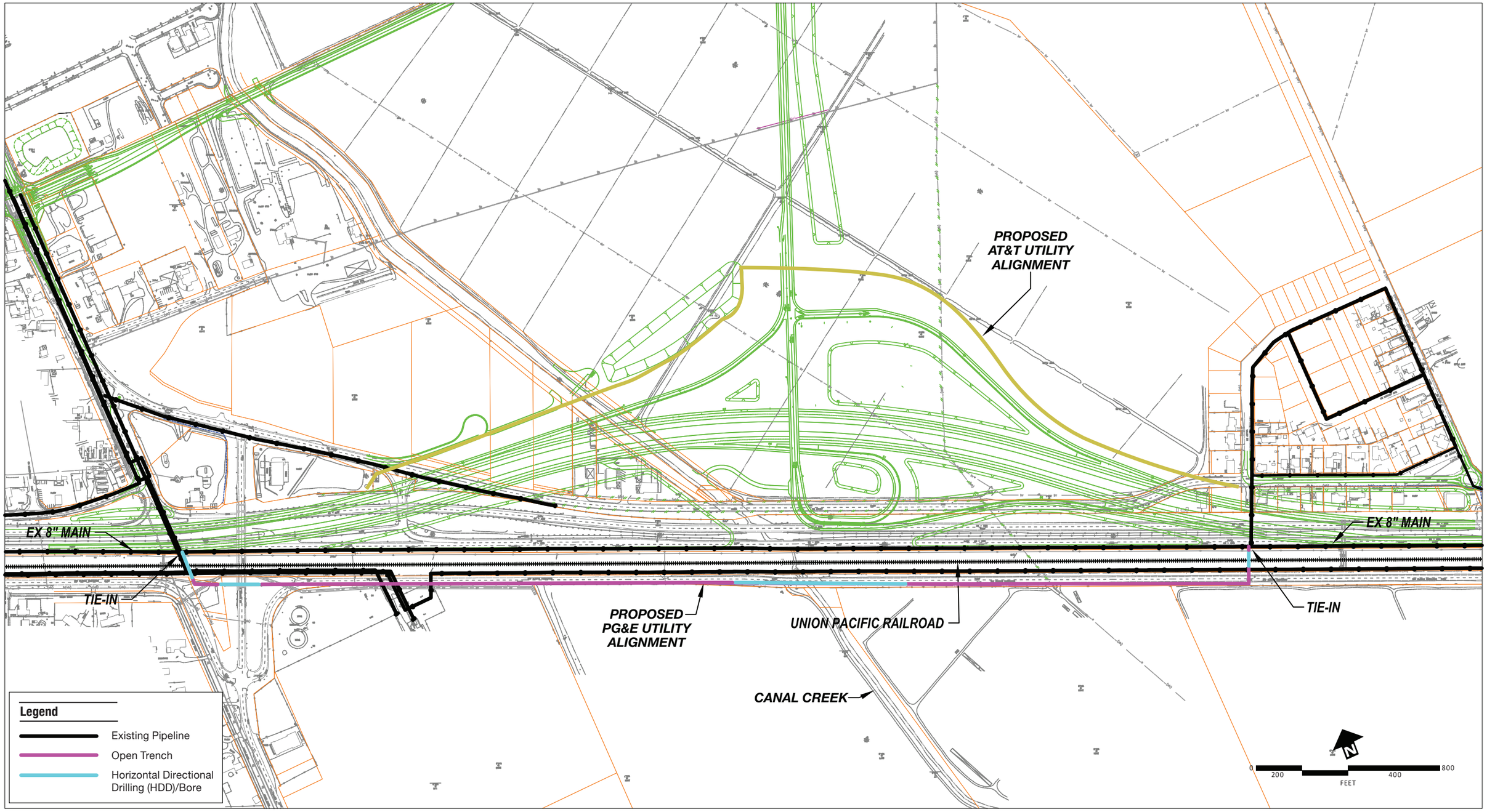
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Proposed Project Design Modifications **Figure 2**

Source: Mark Thomas & Company, Inc., 2011.

Figure 2: Proposed Project Design Modifications (back)

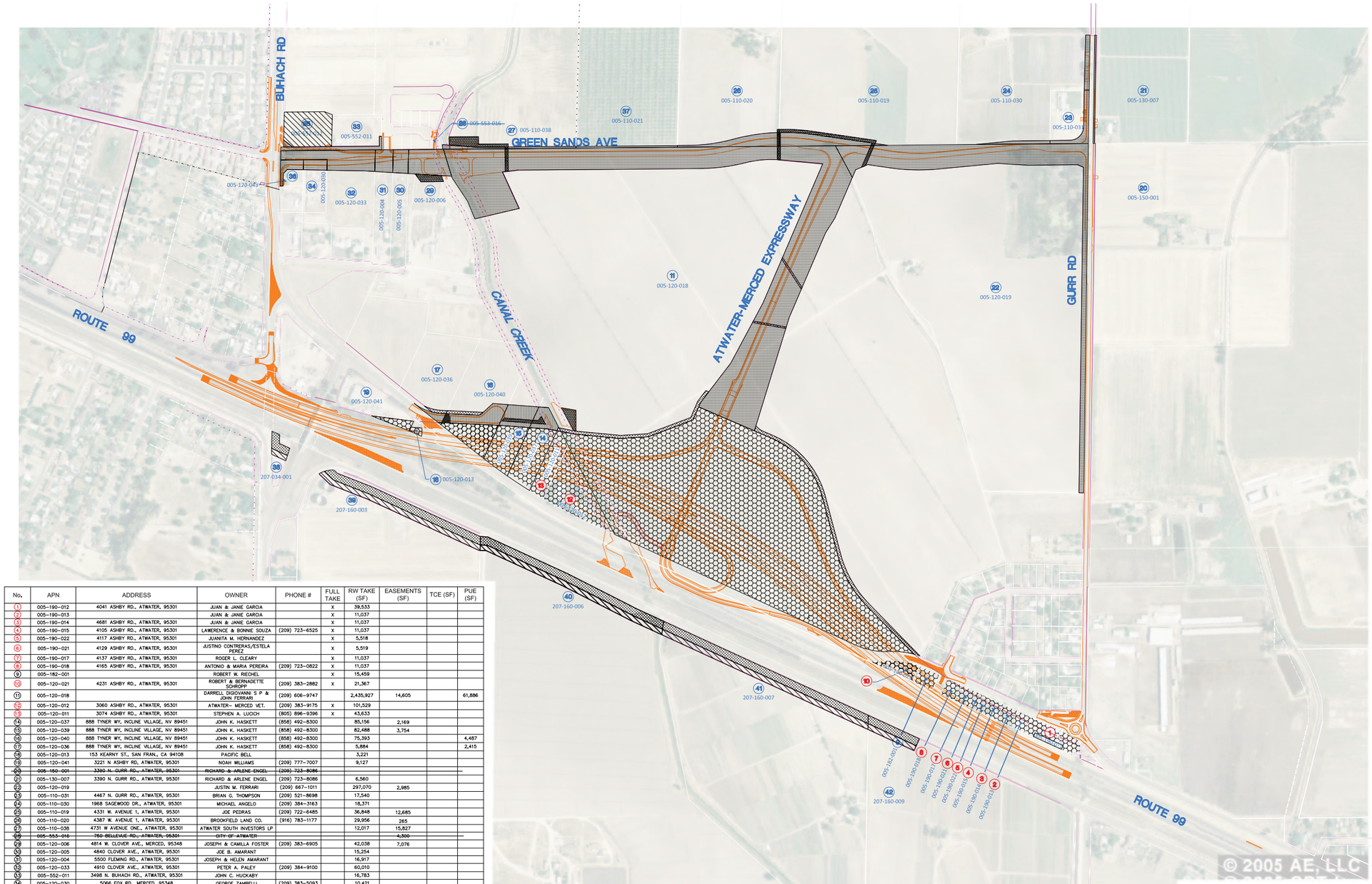


Phase 1A-Reduced Utility Relocation Option

Figure 3

Source: GTS, 2012.

Figure 3: Phase 1A-Reduced Utility Relocation Alignment (back)



Legend

- PROPOSED RIGHT OF WAY ACQUISITION FOR CALTRANS
- PROPOSED RIGHT OF WAY ACQUISITION FOR COUNTY OF MERCED
- PUBLIC UTILITY EASEMENT (PUE)
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
- PRIVATE LINE EASEMENT
- MID EASEMENT
- # PARCELS DISPLACED

N

NO SCALE

No.	APN	ADDRESS	OWNER	PHONE #	FULL TAKE	RW TAKE (SF)	EASEMENTS (SF)	TCE (SF)	PUE (SF)
1	005-190-012	4041 ASHBY RD., ATWATER, 95301	JUAN & JANIE GARCIA		x	39,533			
2	005-190-013		JUAN & JANIE GARCIA		x	11,037			
3	005-190-014	4681 ASHBY RD., ATWATER, 95301	JUAN & JANIE GARCIA		x	11,037			
4	005-190-015	4105 ASHBY RD., ATWATER, 95301	LAWERENCE & BONNIE SOUZA	(209) 723-6525	x	11,037			
5	005-190-022	4117 ASHBY RD., ATWATER, 95301	JUANITA M. HERNANDEZ		x	5,518			
6	005-190-021	4129 ASHBY RD., ATWATER, 95301	JUSTINO CONTRERAS/ESTELA PEREZ		x	5,519			
7	005-190-017	4137 ASHBY RD., ATWATER, 95301	ROGER L. CLEARY		x	11,037			
8	005-190-018	4165 ASHBY RD., ATWATER, 95301	ANTONIO & MARIA PEREIRA	(209) 723-0822	x	11,037			
9	005-182-001		ROBERT W. RIECHEL		x	15,459			
10	005-120-021	4231 ASHBY RD., ATWATER, 95301	ROBERT & BERNADETTE SCHROPP	(209) 383-2882	x	21,367			
11	005-120-018		DARRELL DIGIOVANNI S P & JOHN FERRARI	(209) 606-9747		2,435,927	14,605		61,886
12	005-120-012	3060 ASHBY RD., ATWATER, 95301	ATWATER- MERCED VET.	(209) 383-9175	x	101,529			
13	005-120-011	3074 ASHBY RD., ATWATER, 95301	STEPHEN A. LUCICH	(805) 896-9396	x	43,633			
14	005-120-037	888 TYNER WY, INCLINE VILLAGE, NV 89451	JOHN K. HASKETT	(858) 492-8300		85,156	2,169		
15	005-120-039	888 TYNER WY, INCLINE VILLAGE, NV 89451	JOHN K. HASKETT	(858) 492-8300		82,488	3,754		
16	005-120-040	888 TYNER WY, INCLINE VILLAGE, NV 89451	JOHN K. HASKETT	(858) 492-8300		75,393			4,487
17	005-120-036	888 TYNER WY, INCLINE VILLAGE, NV 89451	JOHN K. HASKETT	(858) 492-8300		5,884			2,415
18	005-120-013	153 KEARNY ST., SAN FRAN., CA 94108	PACIFIC BELL			3,221			
19	005-120-041	3221 N ASHBY RD, ATWATER, 95301	NOAH WILLIAMS	(209) 777-7007		9,127			
~~20~~	~~008-160-001~~	~~3390 N. GURR RD., ATWATER, 95301~~	~~RICHARD & ARLENE ENGEL~~	~~(209) 723-8086~~					
21	005-130-007	3390 N. GURR RD., ATWATER, 95301	RICHARD & ARLENE ENGEL	(209) 723-8086		6,560			
22	005-120-019		JUSTIN M. FERRARI	(209) 667-1011		297,070	2,985		
23	005-110-031	4467 N. GURR RD., ATWATER, 95301	BRIAN G. THOMPSON	(209) 521-8698		17,540			
24	005-110-030	1968 SAGEWOOD DR., ATWATER, 95301	MICHAEL ANGELO	(209) 384-3163		18,371			
25	005-110-019	4331 W. AVENUE 1, ATWATER, 95301	JOE PEDRAS	(209) 722-6485		36,848	12,685		
26	005-110-020	4387 W. AVENUE 1, ATWATER, 95301	BROOKFIELD LAND CO.	(916) 783-1177		29,956	265		
27	005-110-038	4731 W AVENUE ONE., ATWATER, 95301	ATWATER SOUTH INVESTORS LP			12,017	15,827		
~~28~~	~~005-553-016~~	~~750 BELLEVUE RD., ATWATER, 95301~~	~~CITY OF ATWATER~~				~~4,300~~		
29	005-120-006	4814 W. CLOVER AVE., MERCED, 95348	JOSEPH & CAMILLA FOSTER	(209) 383-6905		42,038	7,076		
30	005-120-005	4840 CLOVER AVE., ATWATER, 95301	JOE B. AMARANT			15,254			
31	005-120-004	5500 FLEMING RD., ATWATER, 95301	JOSEPH & HELEN AMARANT			16,917			
32	005-120-033	4910 CLOVER AVE., ATWATER, 95301	PETER A. PALEY	(209) 384-9100		60,010			
33	005-552-011	3498 N. BUHACH RD., ATWATER, 95301	JOHN C. HUCKABY			16,783			
34	005-120-030	5066 FOX RD., MERCED, 95348	GEORGE ZAMBELLI	(209) 383-5093		10,421			
35	005-552-012	750 BELLEVUE RD., ATWATER, 95301	CITY OF ATWATER			1,350		69,130	
36	005-120-043	5066 FOX RD., MERCED, 95348	MANDEEP & SUKDEEP KHATRA			12,028			
37	005-110-021	4591 W AVENUE 1, ATWATER, 95301	JAMES & SUZI BALESTRA			7,259			
38	207-034-001	4389 ELLIOT AVE ATWATER, CA 95301	WICKUM ELTON J 2012 LIVING TRUST	(209) 358-6152				3,772	8,941
39	207-160-003	1100 W TOWN & COUNTRY RD.,ORANGE CA 92868	SO PACIFICPIPE LINES PARTNERSHIP					40,153	54,483
40	207-160-006	2985 N SOUTHERN PACIFIC AVE ATWATER CA 95301	LINCOLN WHITE CRANE LTD					45,779	65,894
41	207-160-007	2679 N SOUTHERN PACIFIC AVE ATWATER CA 95301	CARLOS BAEZ					51,578	73,372
42	207-160-009	2551 N GURR RD, ATWATER CA 95301	4 ACRE DEVELOPMENT A PARTNERSHIP					11,802	17,798

Source: Mark Thomas & Company, Inc., 2011.

Phase 1A-Reduced Displacements

Figure 4

Figure 4: Phase 1A-Reduced Displacements (back)

APPENDIX A

Phase 1A-Reduced
Supplemental Traffic Analysis

180 Grand Avenue, Suite 250
Oakland, CA 94612
510.839.1742
510.839.0871 fax
www.dowlinginc.com
traffic@dowlinginc.com

428 J Street, Suite 500
Sacramento, CA 95814
916.266.2190
916.266.2195

Dowling Associates, Inc.

Date: February 7, 2011

Transmittal

To:	**Jim Sims**	Organization:	**Mark Thomas & Co., Inc.**
CC:	**File**	Address:	**1960 Zanker Road San Jose, CA 95112**
Phone:	**(408) 453-5373**	Fax:	**(408) 453-5390**
From:	**Jim Damkowitch Project Manager**	Reference #:	**P05-058**
Subject:	**Phase 1A-Reduced & 1A Merced-Atwater Expressway Traffic Analysis**		

☐ **Urgent** ☐ **For Review** ☐ **Reply ASAP** ☐ **For your Information** ☐ **As Requested** ☐ **Original will follow by mail**

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Please find enclosed 1 copy of the above mentioned report.

This supplemental analysis is being provided to facilitate Phase 1A-Reduced and 1A design of the Atwater-Merced Expressway (AME). As a subconsultant to Mark Thomas & Company (Prime Consultant), Dowling Associates developed this AME Phase 1A-Reduced and 1A level of service analysis in a manner consistent with the Caltrans approved Traffic Analysis for the Atwater-Merced Expressway Project for development of the AME Project Report (Approved May 24, 2007), the Atwater-Merced Expressway Phasing Analysis Supplemental Analysis (September 23, 2008) and the Phase 1A Merced-Atwater Expressway Traffic Analysis Methodology Memorandum (February 10, 2010).

A description of the anlaysis is provided on the following pages.

Introduction

This technical memorandum describes the traffic and circulation implications of implementing the Atwater-Merced Expressway Phase 1A-Reduced and 1A. The purpose of this analysis is to facilitate design concepts for the development of "stand alone" AME phases. Both the Phase 1A and Phase 1A-Reduced designs will provide sufficient right of way for the ultimate AME interchange design. The opening and design years for AME Phase 1A-Reduced are 2015 and 2035, respectively. The opening and design years for AME Phase 1A are 2025 and 2045, respectively.

Study Area and Data Collection

In September 2008, three AME phases were developed by Mark Thomas & Company in coordination with Caltrans, MCAG and Dowling Associates. The proposed Phase 1 design has been split into two distinct phases: 1A-Reduced and 1A. Phase 1A-Reduced is shown in **Figure 1** and Phase 1A is shown in **Figure 2**. A brief description for each phase is provided below.

Phase 1A-Reduced entails construction of a 2-lane AME connecting SR-99 with Belcher /Green Sands extensions. The project termini would include the full interchange with SR-99 and the at-grade intersection at Belcher/Green Sands, which would provide local access to the AME. Key future baseline assumptions include:

- SR-99 — 6 lanes within the project limits
- SR-99 Ramps — 1 lane with flaring for intersection channelization
- AME — 2-lane Expressway
- Buhach I/C — Removed (crossing of SR-99 will be retained)
- Ashby — Ashby will be "pinched" east of AME
- Green Sands Road — 2 lanes btw Gurr and Buhach
- Buhach — 4 lanes n/o freeway – 2-lanes s/o freeway
- Project Intersections — signalized with protected phasing

AME Phase 1A-Reduced was evaluated under 2015 and 2035 conditions to identify deficiencies to ascertain when capacity would be exceeded. Key Phase 1A-Reduced capacity constraints include the AME at-grade intersections with Belcher, the intersection of Belcher and Gurr Road and the intersection of Belcher-Green Sands and Buhach Road.

Phase 1A would entail widening AME Phase 1A-Reduced to 4-lane expressway connecting SR-99 with Belcher Road/Green Sands. The project termini would include the full interchange with SR-99 and an at-grade intersection at Belcher Road/Green Sands extension. To facilitate local access to the AME, portions of Belcher Road/Green Sands would be constructed between Buhach Rd. and Gurr Rd. The Belcher Road/Green Sands improvements are necessary to help accommodate the change in circulation patterns resulting from the closure of the SR-99 ramps at Buhach which will cause traffic to re-route to/from the new AME interchange at SR-99. Key future baseline assumptions include:

- SR-99 — 6 lanes within the project limits
- SR-99 Ramps — 2 lanes
- AME — 4-lane Expressway
- Buhach I/C — Removed (crossing of SR-99 will be retained)

- Ashby — Ashby will be “pinched” east of AME
- Green Sands Road — 4 lanes btw Gurr and Buhach
- Buhach — 4 lanes n/o freeway – 2-lanes s/o freeway
- Project Intersections — signalized with protected phasing

Phase 1A improvements are assumed to be completed by 2025. Key Phase 1A capacity constraints include the AME at-grade intersections with Belcher, the intersection of Belcher and Gurr Road and the intersection of Belcher-Green Sands and Buhach Road. Needed roadway design considerations for accommodating future year 2025 and 2045 travel demand were addressed. Capacity threshold analysis was applied for identified deficiencies to ascertain when capacity would be exceeded.

Travel Demand Modeling – MCAG Travel Model

The travel forecast analysis approach used to generate the peak hour turning movement volumes for this supplemental analysis is identical to the approach documented in the Caltrans approved Traffic Analysis for the Atwater-Merced Expressway Project (May 24, 2007), the Atwater-Merced Expressway Phasing Analysis Supplemental Analysis (September 23, 2008) and the Phase 1A Merced-Atwater Expressway Traffic Analysis Methodology Memorandum (February 10, 2010).

As part of the Traffic Analysis for the Atwater-Merced Expressway Project (May 24, 2007), a Project Information Fact Sheet was also submitted to and approved by Caltrans D-10. This Project Information Fact Sheet is being resubmitted for purposes of documenting the modeling framework for this Phase 1A and Phase 1A-Reduced analysis and is provided as an attachment to this report. Given that four years have passed (2006-2010) since the Project Information Fact Sheet was approved, an assessment was performed to gauge what changes have occurred in MCAG model constructs, model growth assumptions, traffic counts and project programming that may have antiquated the existing AME modeling methodology. This assessment is described below.

MCAG Model Constructs

As documented in the Traffic Analysis for the Atwater-Merced Expressway Project (May 24, 2007), the MCAG traffic model is a daily, weekday, model. All travel forecasts performed for the AME are based on this MCAG ADT model. A peak-hour component was added to the model in 2006. However, based on in-house computational experience, the veracity of the peak hour model/s was less than desired. As such, MCAG is currently not using - nor commissioning the use of – the peak hour model component for transportation planning, air quality conformity assessments, or other analysis purposes. Consequently, the existing ADT model used to perform the travel forecasts for the Traffic Analysis for the Atwater-Merced Expressway Project (May 24, 2007) remains the operable travel forecasting tool used by MCAG[1].

[1] Although not identified in its currently adopted OWP, MCAG does plan to eventually reexamine the peak hour model constructs and supplement the validation process with a requisite amount of ground count data to achieve the desired validation performance.

MCAG Socioeconomic Forecasts

MCAG develops long-range forecasts of population and employment and uses them in its transportation planning functions including the transportation demand model it maintains. The last three updates to the forecast were in 2004, 2007, and 2010. The 2007 update was a re-adoption of the 2004 forecast with no changes. The 2010 update, adopted by the MCAG Governing Board in July 2010, is a relatively minor change from the previous forecasts. It extends the forecast to 2035 and accounts for the effects of the recent recession. The forecasts for 2015 and 2020 are lower; then the long-term growth trend is predicted to reassert itself – this is consistent with historical growth and with state forecasts. **Table 1** shows a comparison of the prior and current MCAG forecasts of total county population. **Table 2** shows the annual average growth rates in five year increments.

Table 1. Comparison of MCAG Population Growth Forecasts

	2010	2015	2020	2025	2030	2035
March 2004 (2004 RTP)	276,200	307,300	340,800	377,400	417,200	n/a
April 2007 (2007 RTP)	276,200	307,300	340,800	377,400	417,200	n/a
July 2010 (2011 RTP)	260,000	287,000	331,000	372,000	417,500	465,500
difference	-6%	-7%	-3%	-1%	0%	

Table 2. Five-Year Annual Average Growth Rates (2007 RTP vs. 2011 RTP)

MCAG RTP Projections	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035
April 2007 forecast (2007 RTP)	2.2%	2.1%	2.1%	2.0%	
July 2010 forecast (2011 RTP)	2.0%	2.9%	2.4%	2.3%	2.2%

Based on the above comparison, the most recently developed 2030 growth projection control totals resident in the MCAG model travel model are practically identical to those used for the Traffic Analysis for the Atwater-Merced Expressway Project (May 24, 2007). Hence, signficant 2030 travel forecast differences would not be anticipated to result from MCAG's recent growth projections.

Given the need to extrapolate traffic volumes out to 2045 (needed as part of this AME Phase 1A analysis), a comparison between the previous projections for 2015 to 2030 relative to the "new" 2030 to 2035 projection is warranted. As shown – growth is commensurate (2.1% vs. 2.2%) between these two horizons. This suggests that extrapolation beyond 2030 based on the period between 2015 and 2030 from prior growth projections would be generally consistent with those based on MCAG's extended 2035 growth forecast.

Traffic Counts

To address for systematic modeling error during the AME forecasts analysis, post-processing adjustments were performed. The recommended procedure is based on the NCHRP Report 255, 1982. NCHRP-255 adjustments entail measuring the difference (in absolute and ratio terms) between base year model volumes and the base year traffic counts and applying this mathematical relationship to adjust model forecasts. Published Caltrans traffic volume data was used for all state highways including SR-99.

Table 3 compares the published 2005 daily traffic volume for SR-99 used as part of the NCHRP-255 process in the AME traffic study with the most recent data published for SR-99 i.e., 2008. Due to the economic downturn, no growth trend in daily traffic volumes is

apparent. Re-calculating the NCRHP-255 process using the 2008 traffic volume data would have the mathematical effect of slightly lowering the 2030 AME out-year traffic forecasts as reported in Traffic Analysis for the Atwater-Merced Expressway Project (May 24, 2007) .

Table 3. SR-99 AADT Published Volume Comparison (2005 vs. 2008)

District	Route	County	Postmile	Description	1994	2005	2008	%Growth 2005-2008	Annual Growth 2005-2008	%Growth 1994-2008	Annual Growth 1994-2008
Caltrans 2008 SR-99 ADT											
10	99	MER	13.861	MERCED, JCT. RTE. 140 EAST	38500	52000	51000	-1.92%	-0.65%	32.47%	2.03%
10	99	MER	14.686	MERCED, JCT. RTE. 59 SOUTH	42000	53000	52000	-1.89%	-0.63%	23.81%	1.54%
10	99	MER	15.799	MERCED, JCT. RTE. 140 WEST; JCT. RTE. 59 NORTH	40000	52000	52000	0.00%	0.00%	30.00%	1.89%
10	99	MER	16.538	MERCED, WEST MERCED OVERHEAD, ATWATER BLVD	47500	55000	54000	-1.82%	-0.61%	13.68%	0.92%
10	99	MER	20.521	BUHACH ROAD	39000	51000	50000	-1.96%	-0.66%	28.21%	1.79%
10	99	MER	21.612	EAST ATWATER BOULEVARD	36000	40000	39000	-2.50%	-0.84%	8.33%	0.57%
10	99	MER	23.462	ATWATER, WEST ATWATER BOULEVARD	41500	46000	45000	-2.17%	-0.73%	8.43%	0.58%

Future Programming

Based on review of the programmed improvements in the current MCAG RTP, the future baseline improvement has not changed since development of the AME travel forecasts. It should be noted that given that the Applegate Interchange and SR-99 Widening PSR has not been approved by Caltrans – this improvement must remain excluded from the future baseline per Caltrans Traffic Study guidelines.

Based on this review of MCAG model constructs, model growth assumptions, traffic counts and project programming, the current travel forecasting framework established for the Traffic Analysis for the Atwater-Merced Expressway Project (May 24, 2007) is still considered valid for this analysis of the AME Phase 1A design.

MCAG Travel Model

The Merced County Association of Governments (MCAG) regional transportation model was used to perform the traffic forecasts for this study. Model inputs (housing and employment) have been developed by MCAG to allow a 2030 forecast at 5-year increments (e.g., 2000, 2005, 2010…2030). Phasing of all future planned and programmed infrastructure improvements are coded consistent with MCAG's 2007 RTP and FTIP project implementation schedules.

A 2015, 2025, 2035, and 2045 forecast was developed for Phase 1A. A 2015 model land use file was created by interpolating between MCAG's 2010 and 2020 land use files. The 2015, 2025, and 2035 MCAG network capital improvement assumptions are consistent with assumptions used in development of the Traffic Analysis for the Atwater-Merced Expressway Project Report (Approved May 24, 2007). The Phase 1A volume sets (i.e., 2015, 2025, 2035 and 2045) were then applied to the Phase 1A-Reduced geometry to ensure a conservative assessment of facility sizing needs.

Network Assumptions

For purposes of this study, projects were included in the baseline network if any project phase (e.g., PS&E, environmental, construction etc) is currently programmed – i.e., has a formal funding commitment. This includes MCAG's regional traffic impact fee (RTIF) projects as well as projects earmarked for developer fee funding. All RTP roadway projects are listed in **Table 4**. Projects that currently are not programmed were not included in the future baseline network.

MCAG model network coding to reflect the AME Phase 1A Design was performed based on MCAG modeling conventions.

Analysis intersections are listed below:

1. Buhach Rd / Ashby Rd (#12) – Phase 1A-Reduced
2. Buhach Rd/Broadway Ave / Ashby Rd (#13) – Phase 1A-Reduced
3. AME / SR-99 NB Ramps (#34) – Phase 1A-Reduced and 1A
4. AME / Belcher Ave (#35) – Phase 1A-Reduced and 1A
5. Buhach Rd / Green Sands (#41) – Phase 1A-Reduced and 1A
6. Gurr Rd / Belcher Ave (#42) – Phase 1A-Reduced and 1A
7. Buhach Rd / Clover Ave (#43) – Phase 1A-Reduced

All study intersections were analyzed as signalized intersections. The AME/SR-99 NB-Ramp intersection (#34) was also analyzed as a stop controlled intersection for informational purposes.

Traffic Operations Parameters

Generalized operational assumptions used for this analysis are as follows:

Ideal Saturation Flow Rate:	Intersections: 1900 vehicles per hour per lane (vphpl) Freeways (6-lanes): 2,400 vehicles per hour per lane (vphpl)
Pk Hour Factor (PHF):	Field Data, No Field Data, Future Condition – HCM Default of 0.92
Pk Hour Traffic Volumes:	Existing: Field Data; Future: AM Pk 9% ADT, PM Pk 10%ADT
AADT Traffic Volumes:	Existing: Field Data; Future Condition MCAG Travel Demand Model
Pedestrian Calls:	Field Data, No Field Data – Consult District 10
Lane Width:	Field Data, No Field Data – Consult District 10
Heavy Vehicles:	Field Data, No Field Data – Consult District 10
Cycle Length	Field Data, No Field Data – Consult District 10
Right Turn On Red (RTOR)	Field Data, No Field Data – Estimate based on SYNCHRO-7
Lane Utilization Factor:	Field Data, No Field Data – Consult District 10
Signal Timing Plans:	Signal Timing Plans must be incorporated into the signalized intersection analysis. No signal timing plans – Consult District 10
Future Year Signal Timing:	Optimized based on SYNCHRO-7 software
Length of Queue	95th Percentile Queue
Turn Storage	Highway Design Manual
Project Evaluation Years	2015 (Phase 1A-Reduced Opening Day), 2025 (Phase 1A Opening Day), 2035 (Phase 1A-Reduced), and 2045 (Phase 1A)

Criteria of Significance

Consistent with the Traffic Analysis for the Atwater-Merced Expressway Project Report, the threshold level of LOS D defines acceptable LOS operations. For purposes of this analysis, a deficiency is defined as any roadway or intersection that is shown to operate at LOS E or worse. The deficiency threshold was based on MCAG's Regional Transportation Plan and the State Congestion Management Program LOS standards for state and regional facilities within urbanized counties (pop > 50,000).

Traffic Impact Study Guidelines for State Highway Facilities identify a target of LOS C for impacts to the state highway system (i.e., LOS D or worse is deficient). The Caltrans guidelines acknowledge that this may not always be feasible and for the lead agency (MCAG) consult with Caltrans to determine the appropriate LOS threshold for state facilities. For consistency, LOS D was used as significance criteria for both local and state operated facilities.

For intersection operations, the computed average delay and LOS for the intersection as a whole is considered the representative intersection LOS by MCAG and its member local agencies. For state operated intersections, this standard was applied to the average total delay (i.e., LOS) per vehicle for each individual movement. Estimated 95th percentile queues are reported for each intersection movement.

State operated facilities within the study area are as follows:

1. SR-99 Mainline & Ramps (~Post Mile 18.00 to Post Mile 21.61)
2. AME/SR-99 NB Ramp (#34)
3. AME/SR-99 SB Ramp (#35)

The County of Merced has established minimum County LOS standard, which are LOS C in rural areas and LOS D in urban areas. LOS D was used in this study for the following five County operated intersections.

1. Buhach Rd / Ashby Rd (#12)
2. Buhach Rd/Broadway Ave / Ashby Rd (#13)
3. Buhach Rd / Green Sands (#41)
4. Gurr Rd / Belcher Ave (#42)
5. Buhach Rd / Clover Ave (#43)

For all non-signalized intersections (state or locally operated), LOS was determined based on the highest average delay approach.

It should be noted that based on the February 10, 2010 PDT Meeting, the future operational performance of the SR-99 mainline (i.e., basic freeway/merge-diverge/weave) as part of this Phase 1A and Phase 1A-Reduced analysis was not considered necessary given that it has been adequately addressed as part of the AME (final) and Applegate I/C traffic studies. This assessment is supported by the lower future year AME/SR-99 interchange demand projections under the Phase 1A and Phase 1A-Reduced designs relative to the ultimate build-out of the AME. However, given that single-lane on- and off-ramps are proposed as part of the Phase 1A-Reduced interchange design, an analysis of the SR-99 merge-diverge operations is considered warranted. For the on-ramps, this includes a metering analysis to determine an acceptable metering rate that: 1) precludes queue spill-back into the adjacent upstream intersection; and, 2) provides operational benefits within the merge influence area. The metering analysis was only applied if the SR-99 merge operations were shown to be at LOS E or worse. Given that these ramps are to be widened to 2-lanes as part of Phase 1A design, a similar analysis was not performed for Phase 1A.

Figure 1 AME Phase 1A-Reduced Study Area

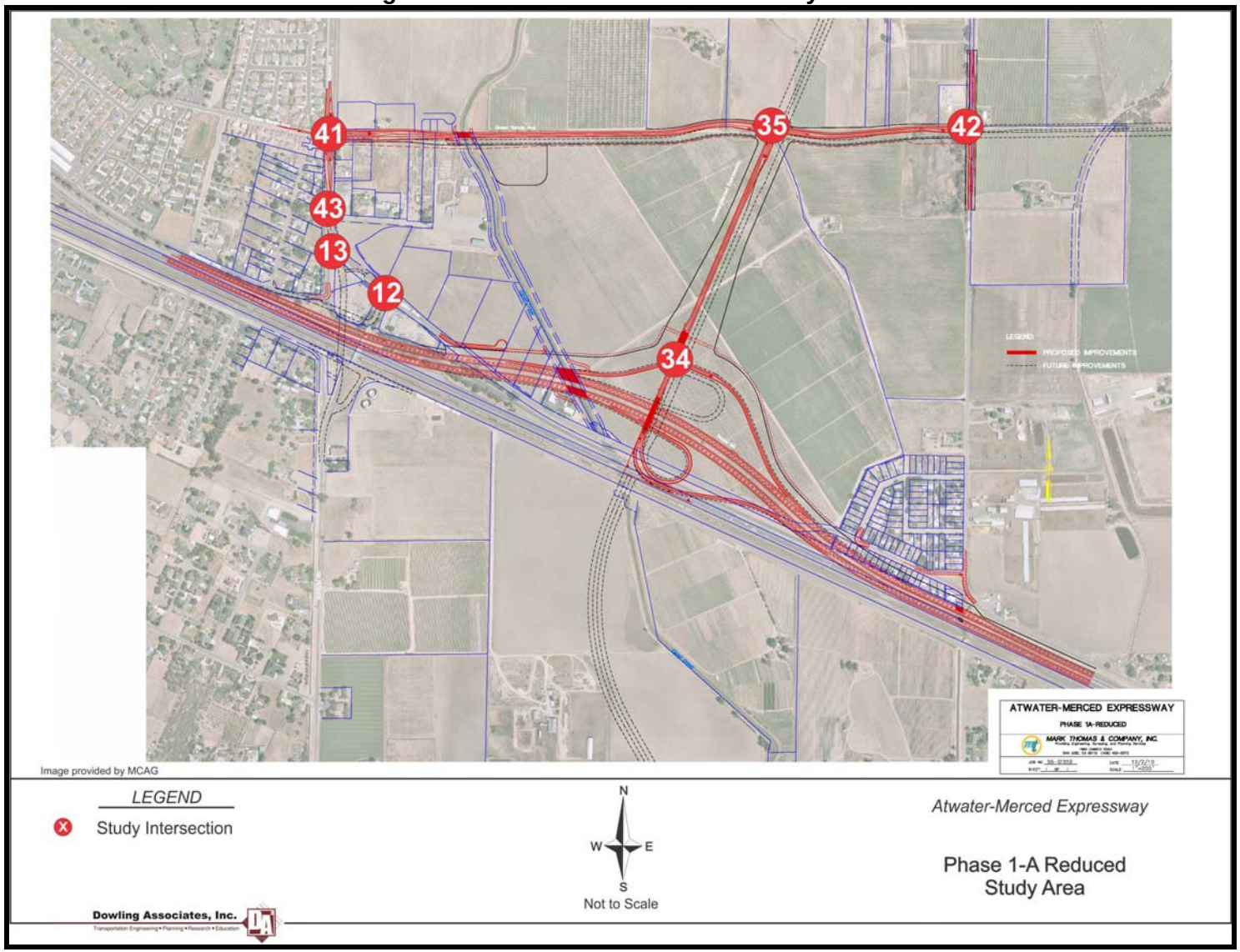
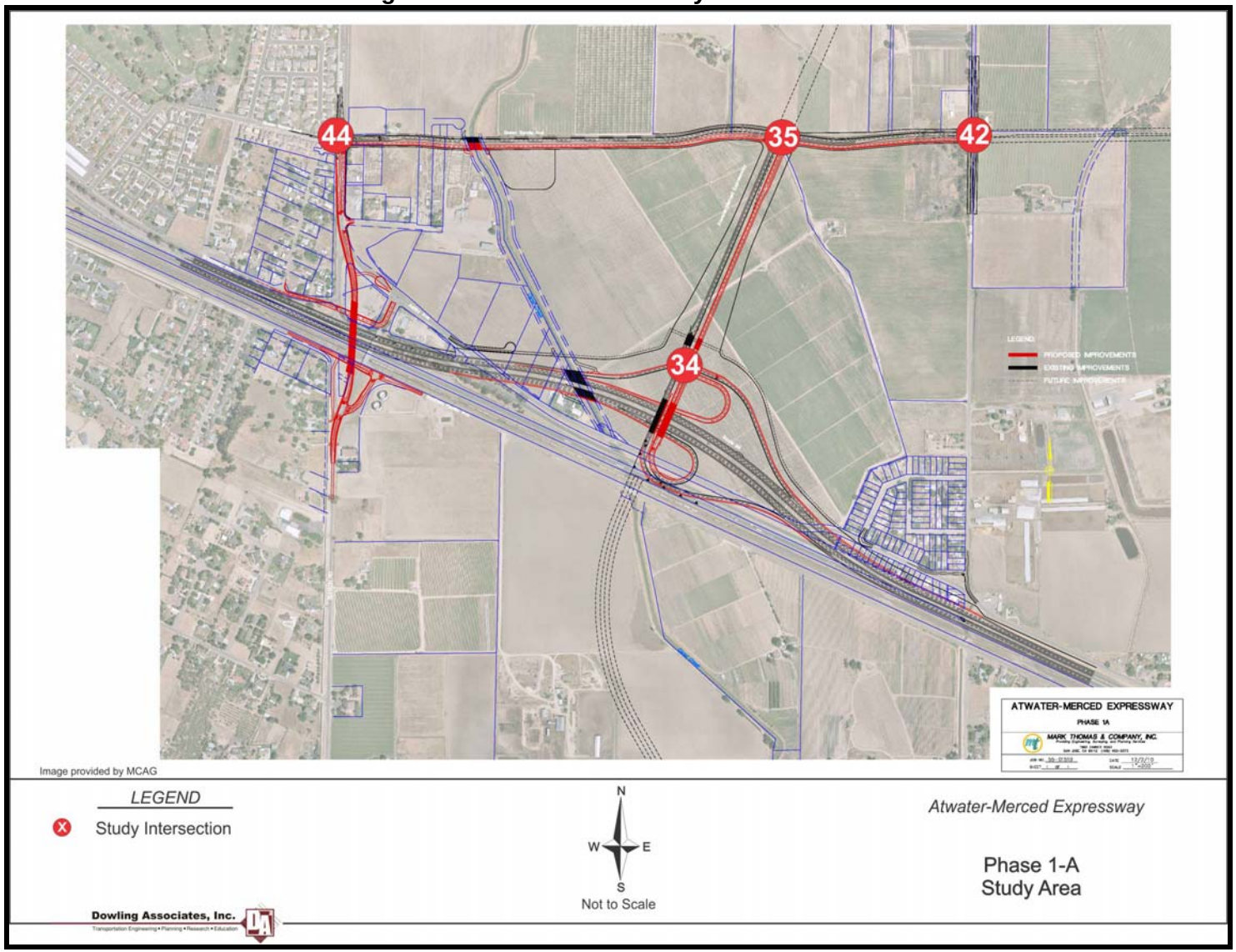


Figure 2 AME Phase 1A Study Area



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Table 4. List of Programmed Improvements included in the 2030 Baseline Forecasts

2030 BASELINE PROJECTS				
Facility	**Model Description**	**Location/Name**	**Document**	**2030 Network**
SR-59	Widen SR-59 from 4 to 5 lanes	from Mission to Childs	RTIF	yes
SR-59	Widen SR-59 from 2 to 4 lanes	from 16th to Olive/Santa Fe	FTIP	yes
SR-59	Widen SR-59 from 2 to 4 lanes	from Olive to Yosemite		no
SR-59	Widen SR-59 from 2 to 4 lanes	from Yosemite to Bellevue		no
SR-59	Reallign SR-59	Reallign SOUTH - 59/Mission to Thornton/140		no
SR-59	Reallign SR-59	Realign (Castle Highway) - multiple alternatives	RTIP/RTIF	yes
SR-99	I/C Improvement	Sandy Mush		no
SR-99	I/C Improvement	Arboleda	FTIP	yes
SR-99	I/C & Circulation Improvements	Mission	FTIP/RTIP	yes
SR-99	Increase Capacity-Flow Rate	Gerard		no
SR-99	I/C Overcrossing Improvement	Childs		no
SR-99	Widen from 4 to 6 to 8 lanes	Merced FREEWAY		no
SR-99	Widen from 4 to 6 to 8 lanes	R&V		no
SR-99	Widen from 4 to 6 to 8 lanes	Merced-Atwater FREEWAY		no
SR-99	I/C Improvement	Franklin		no
SR-99	I/C Improvement	Buhach		no
SR-99	Widen from 4 to 6 to 8 lanes	Atwater Fwy		no
SR-99	I/C Improvement	Applegate		no
SR-99	I/C & Frontage Rd Improvement	Westside	FTIP	yes
SR-99	I/C Improvement	Sultana	FTIP	yes
SR-99	O/C	Hammatt	completed	yes
SR-99	I/C Improvement	Winton Parkway	completed	yes
SR-99	I/C Improvement	Collier	completed	yes
SR-99	I/C & Circulation Improvements	South Ave	completed	yes
SR-99	I/C Improvement	Shanks	completed	yes
SR-99	I/C Improvement	Bradbury	completed	yes
SR-140	New Arterial Roadway	Gustine Bypass	RTIF	yes
SR-140	New Roadway	Bradley Overhead (Parsons to SF Ave)	FTIP/RTIP/RTIF	yes
SR-140	New Roadway	SF Ave to Campus Parkway	RTIF	yes
SR-152	I/C Improvement	152/33 Interchange	completed	yes
SR-152	New Bypass Roadway	152 Los Banos Bypass 3 Alternatives	FTIP/RTIF	yes
SR-165	Widen from 2 to 4 lanes	from Pioneer to 152	RTIF	yes
SR-165	Widen from 2 to 4 lanes	from 152 to Overland	RTIF	yes
SR-165	Widen from 2 to 4 lanes	from Overland to Henry Miller	RTIF	yes
SR-165	New Arterial Roadways	Hilmar Bypass Arterials	RTIF	yes
SR-165	New Ramps	Hilmar Bypass ramps	RTIF	yes
SR-165	Widen from 2 to 4 lanes	from Hilmar to 99	RTIF	yes
	;========ATWATER Local Projects============			
Bellevue	New Roadway - gap closure	from Orchard to		no
Bellevue	New Roadway - gap closure	from Santa Fe to Franklin		no
Bellevue		other pieces of Bellevue:		no
Castle PW				no
	;========LIVINGSTON Local Projects ==========			
Campbell Ave			completed	yes
Winton PW	New Roadway North Extension			no
Hammatt Ave.	New Roadway North Extension			no
	;========LOS BANOS Local Projects==========			
Pioneer Rd.	New Roadway Extension			no
Place Rd.	New Roadway Extension			no
	;========MERCED CITY Local Projects==========			
Mission Ave.	Upgrade to Arterial Standards	from SR-59 to SR-99	RTIF	yes
Childs Ave.	I/C Improvement (see SHW)			no
Yosemite	Upgrade to Arterial Standards	from SR-59 to R Street	DevFee	yes
Yosemite	Upgrade to Arterial Standards	from G to Campus		no
Cardella	New Roadway - gap closure	from SR-59 to G Street	DevFee	yes
Bellevue	Widening	from SR-59 to G Street		no
Bellevue	Widening	other pieces of Bellevue:		no
Bellevue	Widening	from G to Campus		no
Bellevue	Widening	other pieces of Bellevue:		no
Old Lake	New Roadway - gap closure	from SR-59 to G Street		no
R Street	New Roadway - Extension	from Yosemite to Bellevue	DevFee	yes
M Street	New Roadway - Extension	from Lehigh to Bellevue	DevFee	yes
G Street	Upgrade to 4-lane Arterial Standards	from Yosemite to Old Lake	DevFee	yes
Parsons St.	Upgrade to 4-lane Arterial Standards	from Childs to Yosemite	DevFee	yes
Gardner	New 4-lane Arterial - Extension	from Yosemite to Old Lake	DevFee	yes
	;=========COUNTY Loca Projects ==========			
Campus Park		Campus Park	RTIP	yes
UC Merced		UC		no
Santa Fe Ave	Widen Roadway 2 to 4 lanes	Santa Fe Ave.		no
Santa Fe Ave	Widen Roadway 2 to 4 lanes	from 59 to Bellevue/Buhach		no
Bellevue	Upgrade to Arterial Standards	from Franklin to 59		no
Bellevue		other pieces of Bellevue:		no

Shaded Project are excluded from the 2030 Baseline Network - all other RTP projects included.

AME Phase 1A-Reduced Operations Analysis

Peak Hour AME Volumes & Intersection Turning Movement Volumes

AME peak hour segment volumes and intersection turning movement volumes were developed for 2015 and 2035 by factoring the final (i.e., Phase 1) 2015 and 2025 peak hour volumes and turning movement volumes based on the relative change in the "raw" model daily volumes between Phase 1 and Phase 1A. To simulate worst case scenario for Phase 1A-Reduced analysis, magnitude of Phase 1A-Reduced and Phase 1A turn volumes were assumed to be equivalent for the same year. The turn volumes for 2035 were developed by extrapolating 2015 and 2025 turn volumes. For some locations, turning movement refinements were required to account for movement differences between phases. All turning movements were checked and adjusted to achieve network balance.

Phase 1A-Reduced intersection geometry and control are shown in **Figure 3**. AM/PM peak hour turning movements for 2015 and 2035 are provided in **Figure 4** and **Figure 5** respectively.

Phase 1A-Reduced 2015 and 2035 SYNCRHO, SIM-TRAFFIC, and HCS LOS worksheets are provided as an **Attachment**.

Figure 3 AME Phase 1A-Reduced Intersection Geometry and Control Type

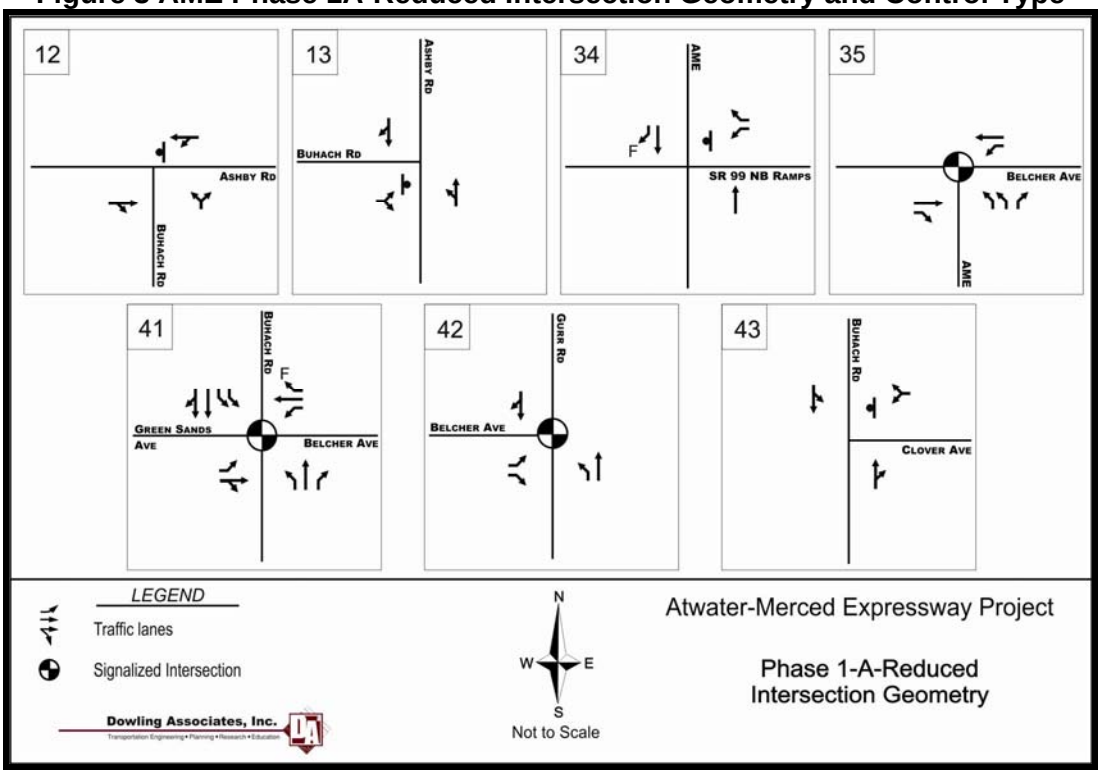


Figure 4 AME Phase 1A-Reduced 2015 AM/PM Peak Hour Turn Movements

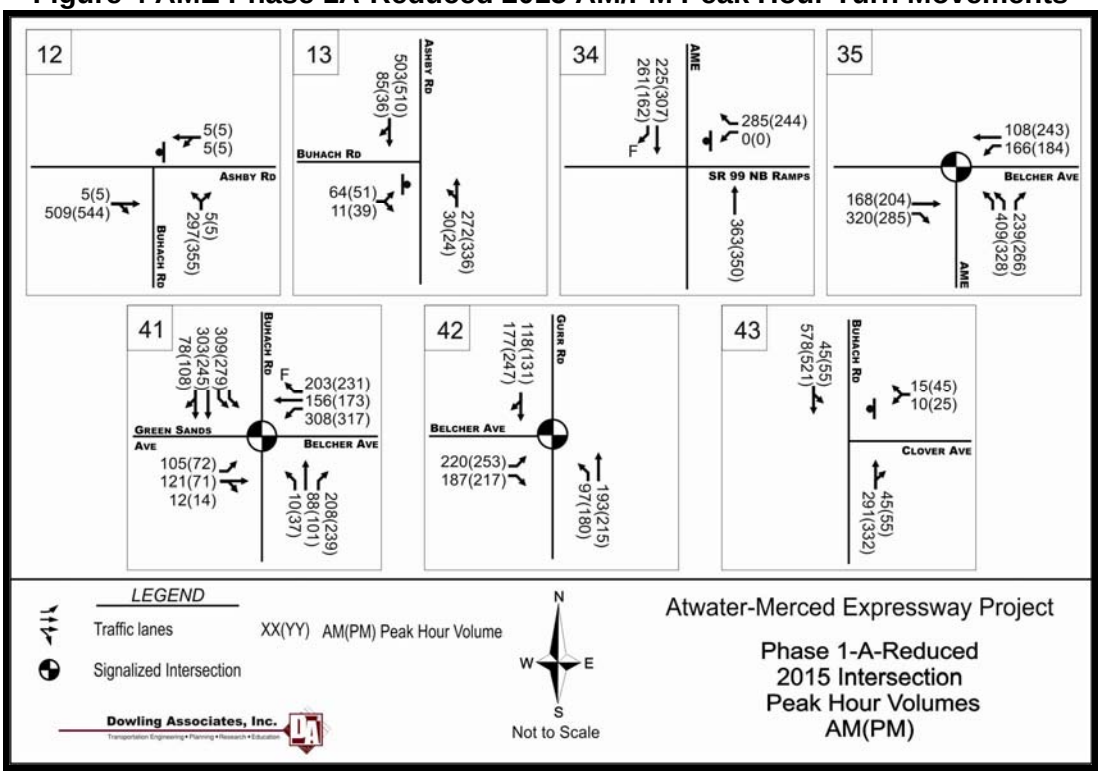
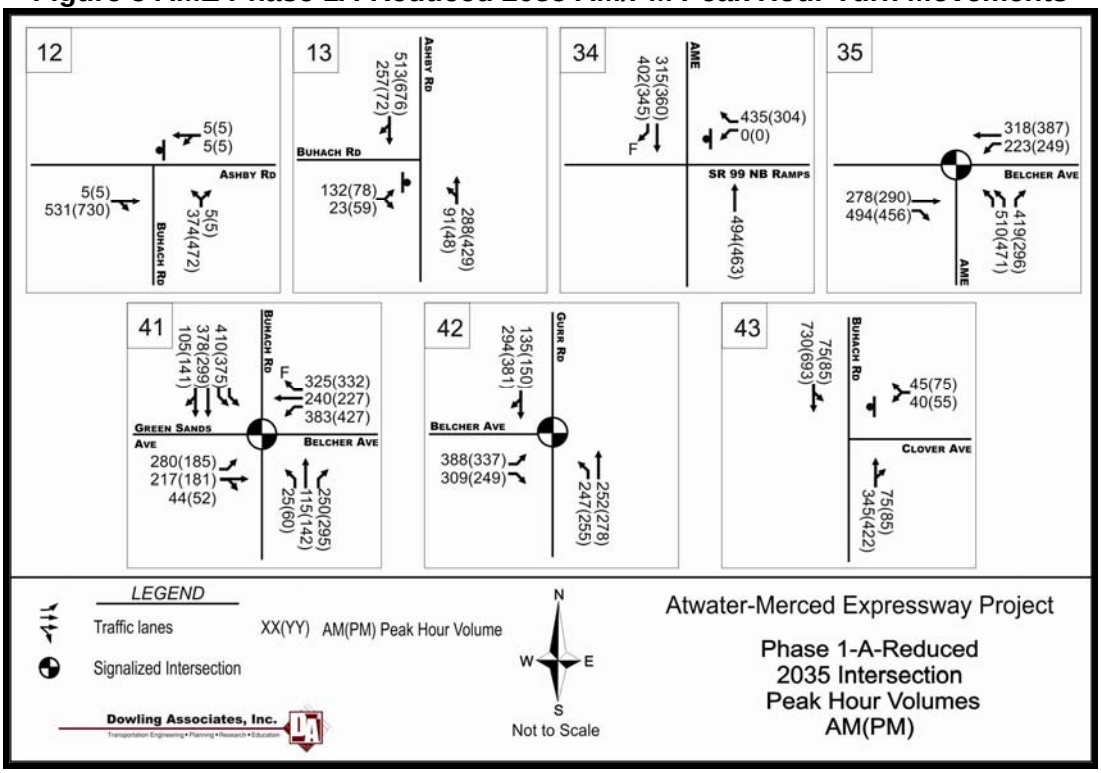


Figure 5 AME Phase 1A-Reduced 2035 AM/PM Peak Hour Turn Movements



Phase 1A-Reduced 2015 Peak Hour LOS Results

Intersection LOS results for all intersections in 2015 are shown in **Table 5**. **Table 6** shows the Phase 1A-Reduced turning queue summary. Freeway merge-diverge operations were evaluated using HCS. The analysis was based on a 1-lane on-ramp and off-ramp design. Freeway mainline and adjacent ramp volumes were based on the approved traffic analysis report for Applegate Interchange (November 17, 2010). The on-ramp and off-ramp volumes at AME are reflected the forecast volumes for AME Phase 1A and Phase 1A-Reduced. **Figure 6** shows the freeway and ramp volumes in 2015. **Table 7** shows the HCS analysis for merge-diverge operations for the Phase 1A-Reduced AME interchange. **Table 8** shows the HCS analysis for two-lane segments of AME and Green Sands/Belcher Ave.

To confirm for a performance of the study intersections in 2015, SIM-TRAFFIC simulation models were also created to measure intersection performances. The average results of 10 simulation runs are shown in **Table 5** and **Table 6**, respectively for delays and queues.

Table 5 Phase 1A-Reduced 2015 Peak Hour LOS Analysis

No.	Intersection	Control	Movement	Synchro				SimTraffic			
				Weekday AM		Weekday PM		Weekday AM		Weekday PM	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
12	Ashby / Buhach	Unsignal	Average	0.2	A	0.2	A	0.5	A	0.5	A
			Northbound	0	A	0	A	0.6	A	0.7	A
			Southbound	0.1	A	0.1	A	2.6	A	3.1	A
			Westbound	13.5	B	14.6	B	8.7	A	9.9	A
13	Ashby / Buhach	Unsignal	Average	2.1	A	2.1	A	2.4	A	1.8	A
			Northbound	1.2	A	0.8	A	5.1	A	4.7	A
			Southbound	0	A	0	A	1.8	A	1.2	A
			Eastbound	21.9	C	20.1	C	13.5	B	12	B
34	AME / SR-99 NB Ramps	Unsignal	Average	3.9	A	3.2	A	0.8	A	0.6	A
			Westbound RT	15.5	C	14.0	B	0.9	A	0.9	A
			Northbound Thru	0.0	A	0.0	A	6.6	A	5.2	A
			Sountbound Thru	0.0	A	0.0	A	1.4	A	1.2	A
			Southbound RT	0.0	A	0.0	A	0.8	A	0.6	A
35	AME / Belcher	Signal	Average	10.9	B	10.9	B	10.8	B	11.0	B
			Eastbound Thru	18.0	B	16.2	B	12.0	B	14.5	B
			Eastbound RT	7.1	A	6.7	A	4.1	A	4.3	A
			Westbound LT	14.6	B	16.4	B	17.5	B	18.1	B
			Westbound Thru	5.2	A	5.0	A	7.0	A	7.5	A
			Northbound LT	14.2	B	15.9	B	17.1	B	17.1	B
			Northbound RT	5.3	A	6.8	A	5.1	A	5.1	A
41	Buhach / Belcher	Signal	Average	22.7	C	21.9	C	21.5	C	18.9	B
			Eastbound LT	30.3	C	28.8	C	32.0	C	31.6	C
			Eastbound Thru-RT	29.4	C	26.7	C	25.7	C	27.9	C
			Westbound LT	27.8	C	25.0	C	31.9	C	27.1	C
			Westbound Thru	19.1	B	17.7	B	19.6	B	18.4	B
			Westbound RT	17.9	B	16.5	B	3.1	A	3.2	A
			Northbound LT	37.4	D	35.5	D	33.4	C	30.4	C
			Northbound Thru-RT	24.8	C	24.3	C	20.1	C	20.0	C
			Southbound LT	23.7	C	24.1	C	39.6	D	35.2	D
			Southbound Thru	16.0	B	17.4	B	17.6	B	17.6	B
42	Gurr / Belcher	Signal	Average	12.2	B	15.7	B	10.6	B	14.7	B
			Eastbound LT	15.3	B	19.6	B	16.0	B	22.3	C
			Eastbound RT	7.4	A	8.0	A	6.1	A	7.3	A
			Northbound LT	16.7	B	20.1	C	20.2	C	23.8	C
			Northbound Thru	5.5	A	5.8	A	6.7	A	7.7	A
			Southbound Thru	16.0	B	21.1	C	12.9	B	19.4	B
			Southbound RT	16.0	B	21.1	C	5.9	A	10.5	B
43	Buhach / Clover	Unsignal	Average	1.1	A	1.9	A	1.2	A	1.6	A
			Northbound	0	A	0	A	0.8	A	0.9	A
			Southbound	1.1	A	1.4	A	3.3	A	3.9	A
			Westbound	15.2	B	16.6	B	10.9	B	11.8	B

Table 6 Phase 1A-Reduced 2015 Peak Hour Turning Queues

No.	Intersection	Control	Movement	Synchro				SimTraffic	
				Weekday AM Peak		Weekday PM Peak		Weekday AM	Weekday PM
				Turning Volumes (vph)	95th Queue (ft.)	Turning Volumes (vph)	95th Queue (ft.)	95th Queue (ft.)	95th Queue (ft.)
12	Ashby / Buhach	Unsignal							
			Northbound	302	0	360	0	0	0
			Southbound	514	0	549	0	17	16
			Westbound	10	2	10	2	28	32
13	Ashby / Buhach	Unsignal							
			Northbound	302	2	360	2	64	63
			Southbound	588	0	546	0	20	12
			Eastbound	75	28	90	30	70	67
34	AME / SR-99 NB Ramps	Unsignal							
			Westbound RT	285	64	244	48	101	81
			Southbound RT	261	0	162	0	0	0
35	AME / Belcher	Signal							
			Eastbound RT	320	25	285	24	104	111
			Westbound LT	166	101	184	115	4	136
			Northbound LT	409	105	328	89	121	94
			Northbound RT	239	22	266	25	62	94
41	Buhach / Belcher	Signal							
			Eastbound LT	105	89	72	66	108	86
			Westbound LT	308	#266	317	#245	243	225
			Westbound RT	203	47	231	47	60	58
			Northbound LT	10	18	37	41	79	107
			Southbound LT	309	110	279	97	144	127
42	Gurr / Belcher	Signal							
			Eastbound LT	220	129	253	176	122	166
			Eastbound RT	187	24	217	28	56	91
			Northbound LT	97	75	180	147	90	137
			Southbound RT	177	130	247	200	135	208
43	Buhach / Clover	Unsignal							
			Northbound	336	0	387	0	4	5
			Southbound	623	3	576	4	72	89
			Westbound	25	6	70	18	43	58

# Denotes that estimated two-cycle flow rate exceeds capacity for movement. For occurrences of "#" SYNCHRO recommends checking v/c of the movement in question. If it is less than 1.00 – queue result is considered stable. If v/c is greater than 1.00, green time should reallocate until movement's v/c is less than 1.00. These checks were performed – queue results above are considered stable.

Figure 6 AME Phase 1A-Reduced 2015 Freeway and Ramp Volumes

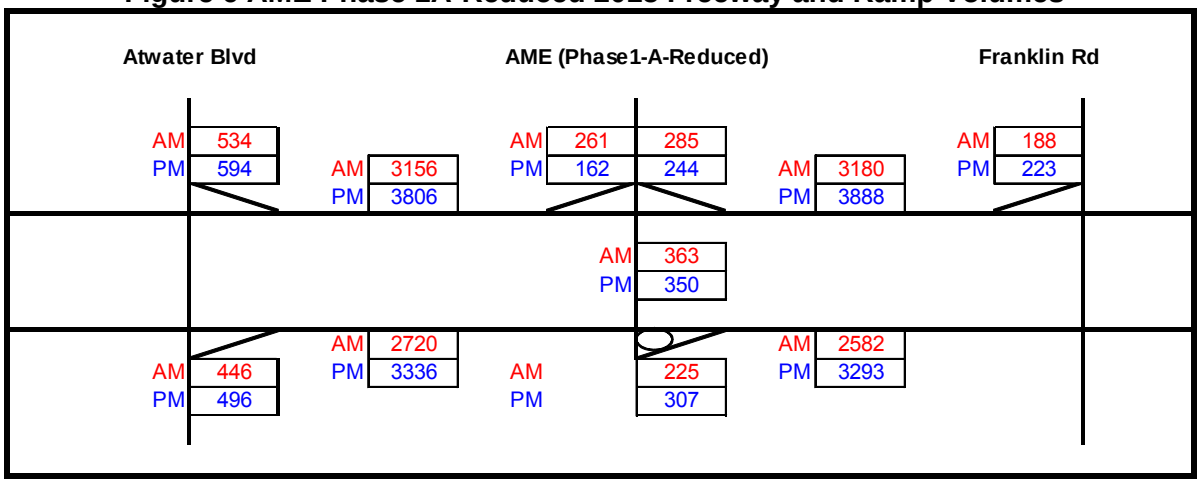


Table 7 Phase 1A-Reduced 2015 HCS Analysis for Freeway Merge-Diverge

SR-99	2015							
	AM				PM			
	Speed (S_R)	Position	Density	LOS	Speed (S_R)	Position	Density	LOS
NB off to AME	57.2	D & U	11.3	B	57.3	D & U	14.9	B
NB on from AME	63.0	D & U	13.4	B	62.0	D & U	16.5	B
SB loop off to AME	57.0	D & U	8.9	A	57.1	D & U	12.2	B
SB on from AME	63.0	D & U	10.2	B	63.0	D & U	14.2	B

Speed (SR) = Space mean speed for vehicles within ramp influence area (mph)
D = With adjacent downstream ramp
U = With adjacent upstream ramp

Table 8 Phase 1A-Reduced 2015 HCS Analysis for Two-Lane Segments

Highway	Location	AM		PM	
		v/c	LOS	v/c	LOS
AME	btw SR-99 and Green Sands/Belcher	0.39	D	0.36	D
Green Sands/Belcher	btw Buhach and AME	0.39	D	0.4	D

Phase 1A-Reduced 2035 Peak Hour LOS Results

A 20-year horizon was projected out from the opening year (2015) for Phase 1A-Reduced. Intersection LOS results for 2035 from SYNCHRO and SIM-TRAFFIC are shown in **Table 9**. **Table 10** shows the turning queue summary. **Figure 7** shows freeway and adjacent ramp volumes from the approved traffic analysis for Applegate Interchange. The on-ramp and off-ramp volumes at AME are reflected the forecast volumes for Phase 1A and Phase 1A-Reduced. The HCS merge-diverge analysis results are shown in **Table 11**. All on-ramp and off-ramp were analyzed with 1 lane ramp. **Table 12** shows the HCS analysis results for segments of AME and Green Sands/Belcher Ave.

To confirm for a performance of the study intersections in 2035, SIM-TRAFFIC simulation analysis was performed for the study intersections. **Table 9** and **Table 10** also present the average results of 10 simulation runs for delays and 95th percentile queues, respectively.

Shaded cells indicate when capacity deficient conditions are expected to occur. It is expected that, based on the standard criteria, the intersections of AME/SR-99 NB Ramps (#34) would operate deficiently with stop control in 2035. The intersection of AME and SR-99 NB Ramps is under Caltrans jurisdiction, where a deficiency is determined based on LOS by movement. The intersections of Ashby/Buhach (#13), Buhach/Belcher (#41), and Buhach/Clover (#43) are County operated intersections, where a deficiency is identified based on overall intersection LOS.

Table 9 Phase 1A-Reduced 2035 Peak Hour LOS Analysis

No.	Intersection	Control	Movement	Synchro				SimTraffic			
				Weekday AM		Weekday PM		Weekday AM		Weekday PM	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
12	Ashby / Buhach	Unsignal	Average	0.2	A	0.2	A	0.5	A	0.7	A
			Northbound	0.0	A	0.0	A	0.7	A	1	A
			Southbound	0.1	A	0.1	A	2.4	A	3.4	A
			Westbound	14.8	B	19.3	C	9.9	A	19.5	C
13	Ashby / Buhach	Unsignal	Average	12.6	B	7.0	A	12.1	B	5.1	A
			Northbound	3.0	A	1.7	A	11.1	B	8.5	A
			Southbound	0.0	A	0.0	A	4.6	A	2.3	A
			Eastbound	98.8	F	63.9	F	69.9	F	35.9	E
34	AME / SR-99 NB Ramps	Unsignal	Average	11.1	B	4.1	A	1.1	A	1.0	A
			Westbound RT	42.1	E	20.0	C	38.0	E	9.8	A
			Northbound Thru	0.0	A	0.0	A	2.5	A	1.7	A
			Sountbound Thru	0.0	A	0.0	A	1.2	A	1.2	A
			Southbound RT	0.0	A	0.0	A	1.1	A	1.0	A
35	AME / Belcher	Signal	Average	12.4	B	12.8	B	19.8	B	19.1	B
			Eastbound Thru	27.5	C	27.4	C	23.6	C	23.1	C
			Eastbound RT	7.5	A	7.6	A	9.6	A	9.4	A
			Westbound LT	13.9	B	16.0	B	25.9	C	28.2	C
			Westbound Thru	2.8	A	2.7	A	11.5	B	11.8	B
			Northbound LT	18.3	B	18.9	B	37.2	D	32.7	C
			Northbound RT	7.6	A	7.2	A	10.9	B	9.4	A
41	Buhach / Belcher	Signal	Average	33.8	C	32.9	C	41.2	D	43.8	D
			Eastbound LT	42.7	D	36.9	D	49.7	D	43.6	D
			Eastbound Thru-RT	38.8	D	36.3	D	40.0	D	36.9	D
			Westbound LT	45.4	D	43.3	D	63.1	E	71.3	E
			Westbound Thru	28.1	C	22.4	C	31.1	C	33.6	C
			Westbound RT	24.9	C	20.8	C	6.4	A	10.9	B
			Northbound LT	46.9	D	38.7	D	41.0	D	41.3	D
			Northbound Thru-RT	35.0	D	34.0	C	34.4	C	32.5	C
			Southbound LT	34.3	C	39.2	D	79.0	E	93.3	F
			Southbound Thru	24.6	C	28.5	C	43.4	D	51.0	D
42	Gurr / Belcher	Signal	Average	20.6	C	23.4	C	23.4	C	24.9	C
			Eastbound LT	21.8	C	21.5	C	30.1	C	28.4	C
			Eastbound RT	0.6	A	0.1	A	11.3	B	10.4	B
			Northbound LT	33.6	C	36.6	D	40.2	D	46.5	D
			Northbound Thru	9.3	A	8.0	A	14.6	B	14.4	B
			Southbound Thru	33.1	C	37.3	D	29.0	C	31.3	C
			Southbound RT	33.1	C	37.3	D	19.1	B	22.5	C
43	Buhach / Clover	Unsignal	Average	3.2	A	5.9	A	3.3	A	4.7	A
			Northbound	0	A	0	A	1.5	A	1.4	A
			Southbound	1.9	A	2.3	A	4.9	A	6.2	A
			Westbound	32.3	C	50.3	D	26.1	D	37.3	E

Table 10 Phase 1A-Reduced 2035 Peak Hour Turning Queues

No.	Intersection	Control	Movement	Synchro				SimTraffic	
				Weekday AM Peak		Weekday PM Peak		Weekday AM	Weekday PM
				Turning Volumes (vph)	95th Queue (ft.)	Turning Volumes (vph)	95th Queue (ft.)	95th Queue (ft.)	95th Queue (ft.)
12	Ashby / Buhach	Unsignal							
			Northbound	379	0	477	0	0	0
			Southbound	536	0	735	0	21	24
			Westbound	10	2	10	3	33	32
13	Ashby / Buhach	Unsignal							
			Northbound	379	8	477	5	162	136
			Southbound	770	0	748	0	94	31
			Eastbound	155	177	137	126	258	138
34	AME / SR-99 NB Ramps	Unsignal							
			Westbound RT	435	244	304	94	82	17
			Southbound RT	402	0	345	0	0	0
35	AME / Belcher	Signal							
			Eastbound RT	494	105	456	99	203	205
			Westbound LT	223	m85	249	m92	178	200
			Northbound LT	510	165	471	152	250	279
			Northbound RT	419	51	296	32	173	127
41	Buhach / Belcher	Signal							
			Eastbound LT	280	#303	185	183	202	183
			Westbound LT	383	#453	427	#501	399	408
			Westbound RT	325	65	332	64	246	343
			Northbound LT	25	43	60	80	51	92
			Southbound LT	410	#214	375	#212	214	217
42	Gurr / Belcher	Signal							
			Eastbound LT	388	#288	337	223	305	230
			Eastbound RT	309	0	249	1	182	129
			Northbound LT	247	#259	255	#269	194	197
			Southbound RT	294	205	381	#324	307	399
43	Buhach / Clover	Unsignal							
			Northbound	420	0	507	0	5	9
			Southbound	805	6	778	7	154	192
			Westbound	85	48	130	102	88	121

# Denotes that estimated two-cycle flow rate exceeds capacity for movement. For occurrences of "#" SYNCHRO recommends checking v/c of the movement in question. If it is less than 1.00 – queue result is considered stable. If v/c is greater than 1.00, green time should reallocate until movement's v/c is less than 1.00. These checks were performed – queue results above are considered stable.

Figure 7 AME Phase 1A-Reduced 2035 Freeway-Ramp Volumes

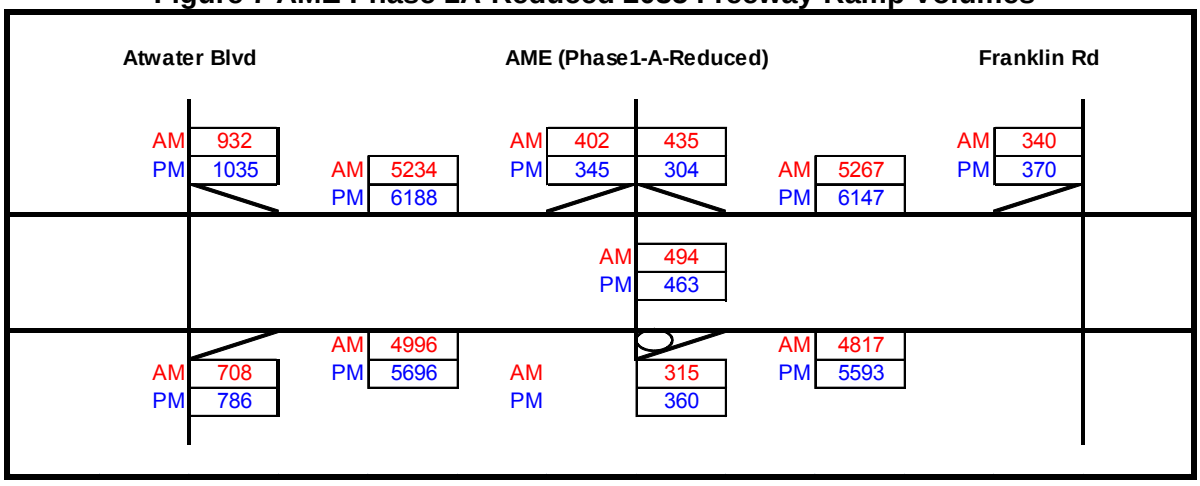


Table 11 Phase 1A-Reduced 2035 HCS Analysis for Freeway Merge-Diverge

SR-99	2035							
	AM				PM			
	Speed (S_R)	Position	Density	LOS	Speed (S_R)	Position	Density	LOS
NB off to AME	56.8	D & U	21.7	C	57.2	D & U	25.2	C
NB on from AME	59.6	D & U	24.7	C	55.8	D & U	29.5	D
SB loop off to AME	56.7	D & U	21.0	C	56.7	D & U	23.9	C
SB on from AME	61.0	D & U	22.2	C	58.5	D & U	26.4	C

Speed (SR) = Space mean speed for vehicles within ramp influence area (mph)
D = With adjacent downstream ramp
U = With adjacent upstream ramp

Table 12 Phase 1A-Reduced 2035 HCS Analysis for Two-Lane Segments

Highway	Location	AM		PM	
		v/c	LOS	v/c	LOS
AME	btw SR-99 and Green Sands/Belcher	0.56	E	0.5	E
Green Sands/Belcher	btw Buhach and AME	0.58	E	0.58	E

Phase 1A-Reduced 2035 with Signal Control at SR-99 NB Ramp Intersection

As indicated in the previous section, the unsignalized intersection of AME/SR-99 NB Ramps (#34) would be deficient for serving right turn traffic from SR-99 NB off-ramp to AME. Alternative analysis for this intersection with signal control is also considered.

Table 13 and **Table 14** provide the SYNCHRO and SIM-TRAFFIC results for delays and queues, respectively for the intersection of AME/SR-99 NB Ramp. This intersection would operate at LOS B or better for all movements.

Table 13 Phase 1A-Reduced 2035 LOS Results for Recommended Design

No.	Intersection	Control	Movement	Synchro				SimTraffic			
				Weekday AM		Weekday PM		Weekday AM		Weekday PM	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
34	AME / SR-99 NB Ramps	Signal	Average	9.0	A	7.1	A	7.0	A	5.2	A
			Westbound RT	12.2	B	10.4	B	8.4	A	6.0	A
			Northbound Thru	9.3	A	7.1	A	10.1	B	7.2	A
			Sountbound Thru	7.0	A	6.0	A	7.6	A	5.7	A
			Southbound RT	6.7	A	5.5	A	1.5	A	1.3	A

Table 14 Phase 1A-Reduced 2035 Queue Results for Recommended Design

No.	Intersection	Control	Movement	Synchro				SimTraffic	
				Weekday AM Peak		Weekday PM Peak		Weekday AM	Weekday PM
				Turning Volumes (vph)	95th Queue (ft.)	Turning Volumes (vph)	95th Queue (ft.)	95th Queue (ft.)	95th Queue (ft.)
34	AME / SR-99 NB Ramps	Signal							
			Westbound RT	435	133	304	59	141	96
			Southbound RT	402	37	345	33	45	29

Phase 1A-Reduced Capacity Threshold Analysis

This section provides the capacity threshold analysis results for AME Phase 1A-Reduced. The facility was evaluated with increment traffic volumes corresponding to each future year until its capacity is reached. All of the study intersections (with signal control at AME/SR-99 NB Ramps intersection) were identified to operate at acceptable level (LOS D or better) up to the design year (2035), thus, capacity threshold analysis was considered only for segment operations.

Table 15 shows the LOS results for a segment capacity threshold analysis for the opening year (2015), the year prior to peak hour demand exceeding capacity (2023 for AME and 2021 for Green Sands/Belcher), and the year that capacity is reached (2024 for AME and 2022 for Green Sands/Belcher).

AME and Green Sands will be widening to 4 lanes as part of the AME Phase 1A, which is expected to open in 2025. The latter improvement is expected to mitigate these segment deficiencies to acceptable LOS levels.

Table 15 Phase 1A-Reduced Capacity Threshold Analysis for 2-Lane Segments

Highway	AM		PM	
Year	v/c	LOS	v/c	LOS
AME btw SR-99 and Green Sands/Belcher				
2015	0.39	D	0.36	D
2023	0.46	D	0.42	D
2024	0.47	E	0.43	D
2025	0.47	E	0.43	D
2035	0.56	E	0.5	E
Green Sands/Belcher btwn Buhach and AME				
2015	0.39	D	0.4	D
2021	0.45	D	0.45	D
2022	0.46	D	0.46	E
2025	0.49	E	0.49	E
2035	0.58	E	0.58	E

AME Phase 1A Operations Analysis

Peak Hour AME Volumes & Intersection Turning Movement Volumes

AME peak hour segment volumes and intersection turning movement volumes for AME Phase 1A were developed using the same approach as for Phase 1A-Reduced, by factoring the final (i.e., Phase 1) 2015 and 2025 peak hour volumes and turning movement volumes based on the relative change in the "raw" model daily volumes between Phase 1 and Phase 1A. The turn volumes for 2045 were developed by extrapolating 2015 and 2025 turn volumes. For some locations, turning movement refinements were required to account for movement differences between phases. All turning movements were checked and adjusted to achieve network balance.

Phase 1A intersection geometry and control are shown in **Figure 8**. The westbound dual left turn lane was assumed in all analysis under Phase 1A. Phase 1A 2025 and 2045 SYNCRHO LOS worksheets are provided in AM/PM peak hour turning movements for 2025 and 2045 are provided in **Figure 9** and **Figure 10**, respectively. Phase 1A 2025 and 2045 SYNCRHO and HCS LOS worksheets are provided as an **Attachment**.

Figure 8 AME Phase 1A Intersection Geometry and Control Type

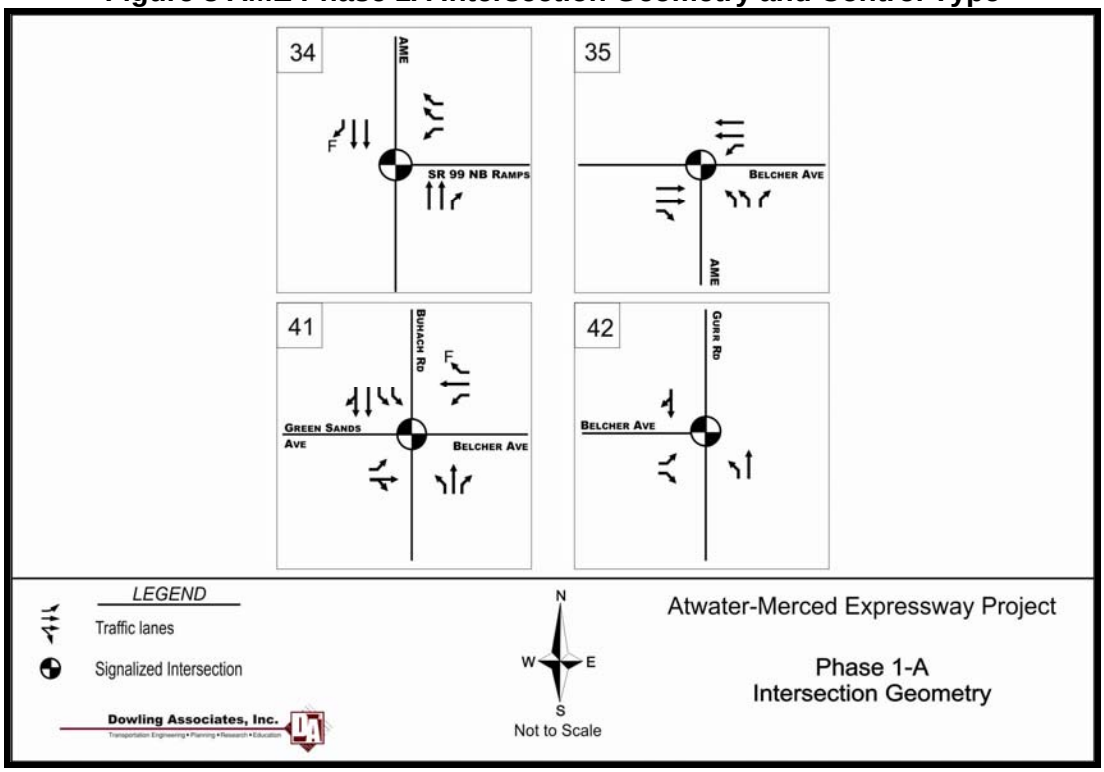


Figure 9 AME Phase 1A 2025 AM/PM Peak Hour Turn Movements

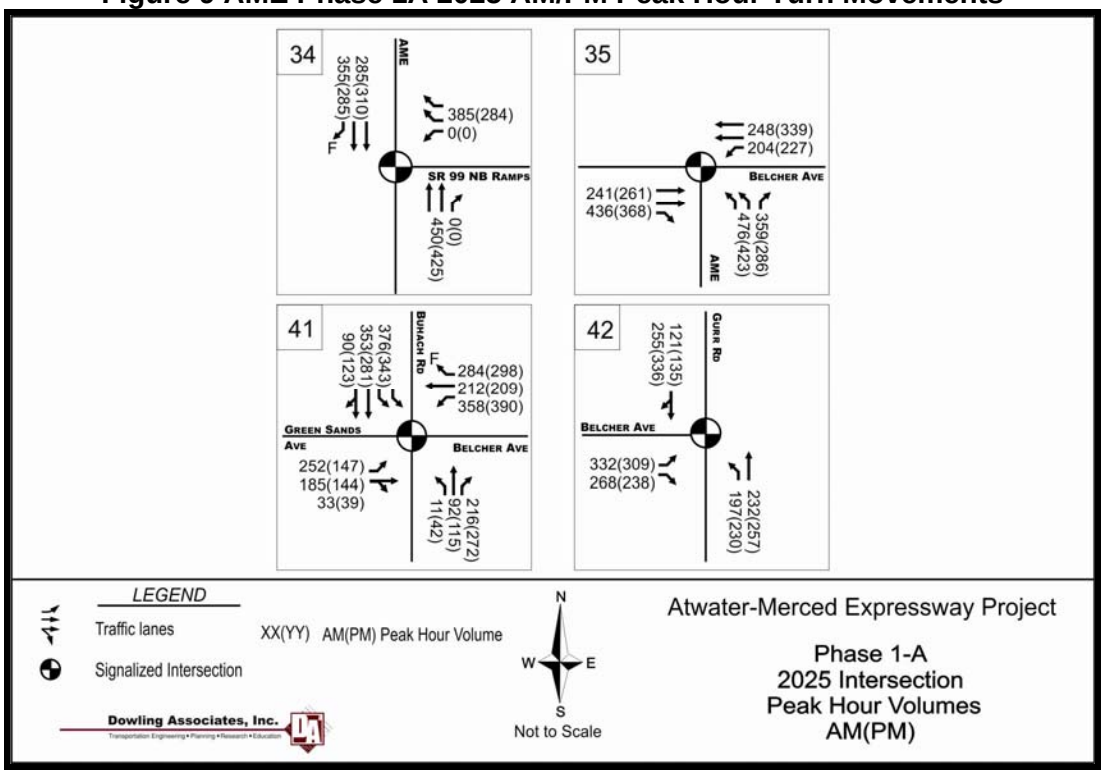
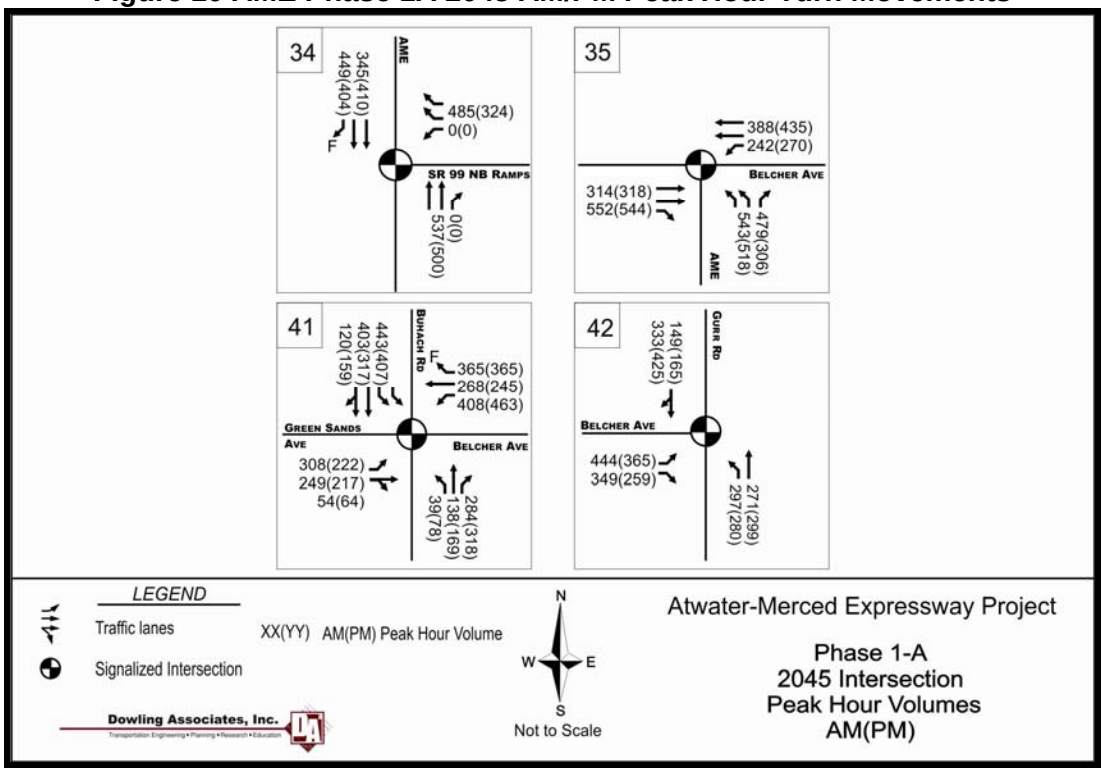


Figure 10 AME Phase 1A 2045 AM/PM Peak Hour Turn Movements



Phase 1A 2025 Peak Hour LOS Results

SYNCHRO and SIM-TRAFFIC LOS results for all intersections in 2025 are shown in **Table 16**. **Table 17** shows the Phase 1A turning queue summary. **Table 18** shows the HCS analysis for multi-lane segments of AME and Green Sands/Belcher Ave.

All of the study intersections are expected to operate at acceptable LOS (D or better) for all movements for Caltrans intersections and for overall for County operated intersections.

It should be noted that the freeway merge-diverge operations analysis was not performed for Phase 1A 2025 conditions given that the merge-diverge activities for Phase 1A-Reduced is expected to operate at acceptable LOS in 2035 as presented in the Phase 1A-Reduced section. The volumes for Phase 1A and Phase 1A-Reduced are identical and the design of Phase 1A is based on Phase 1A-Reduced with some improvements that would result in a capacity increase.

Table 16 Phase 1A 2025 Peak Hour LOS Analysis

No.	Intersection	Control	Movement	Synchro				SimTraffic			
				Weekday AM		Weekday PM		Weekday AM		Weekday PM	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
34	AME / SR-99 NB Ramps	Signal	Average	5.6	A	5.3	A	3.5	A	2.8	A
			Westbound RT	6.8	A	7.2	A	4.0	A	3.8	A
			Northbound Thru	5.3	A	4.8	A	5.1	A	3.6	A
			Sountbound Thru	4.9	A	4.6	A	3.8	A	3.1	A
			Southbound RT	5.4	A	4.9	A	0.6	A	0.5	A
35	AME / Belcher	Signal	Average	11.4	B	11.4	B	12.2	B	11.6	B
			Eastbound Thru	17.6	B	17.3	B	15.4	B	14.4	B
			Eastbound RT	7.8	A	7.7	A	4.1	A	3.6	A
			Westbound LT	17.4	B	17.4	B	22.8	C	22.0	C
			Westbound Thru	5.7	A	5.5	A	8.6	A	9.1	A
			Northbound LT	15.8	B	16.0	B	19.3	B	17.4	B
			Northbound RT	6.1	A	6.0	A	5.6	A	4.6	A
41	Buhach / Belcher	Signal	Average	29.2	C	28.3	C	30.5	C	24.7	C
			Eastbound LT	33.8	C	34.4	C	42.8	D	38.3	D
			Eastbound Thru-RT	29.6	C	33.2	C	30.9	C	31.4	C
			Westbound LT	47.2	D	31.5	C	48.8	D	35.7	D
			Westbound Thru	24.8	C	20.5	C	25.1	C	21.2	C
			Westbound RT	22.0	C	19.1	B	5.4	A	3.9	A
			Northbound LT	42.8	D	39.5	D	38.6	D	42.8	D
			Northbound Thru-RT	27.5	C	31.6	C	24.0	C	27.3	C
			Southbound LT	29.7	C	33.2	C	56.5	E	40.9	D
			Southbound Thru	19.4	B	24.6	C	20.0	C	23.2	C
42	Gurr / Belcher	Signal	Average	16.4	B	19.3	B	14.5	B	17.1	B
			Eastbound LT	21.1	C	22.5	C	21.5	C	22.8	C
			Eastbound RT	7.7	A	8.7	A	5.0	A	5.2	A
			Northbound LT	23.0	C	29.4	C	27.4	C	33.8	C
			Northbound Thru	6.7	A	6.4	A	9.1	A	10.4	B
			Southbound Thru	21.0	C	24.7	C	18.2	B	21.1	C
			Southbound RT	21.0	C	24.7	C	9.4	A	12.3	B

Table 17 Phase 1A 2025 Peak Hour Turning Queues

No.	Intersection	Control	Movement	Synchro				SimTraffic	
				Weekday AM Peak		Weekday PM Peak		Weekday AM	Weekday PM
				Turning Volumes (vph)	95th Queue (ft.)	Turning Volumes (vph)	95th Queue (ft.)	95th Queue (ft.)	95th Queue (ft.)
34	AME / SR-99 NB Ramps	Signal							
			Westbound RT	385	10	284	0	70	63
			Southbound RT	355	22	285	15	0	0
35	AME / Belcher	Signal							
			Eastbound RT	436	65	368	54	129	104
			Westbound LT	204	133	227	143	154	163
			Northbound LT	476	122	423	112	138	117
			Northbound RT	359	21	286	20	79	67
41	Buhach / Belcher	Signal							
			Eastbound LT	252	#271	147	139	192	153
			Westbound LT	358	#393	390	#382	345	308
			Westbound RT	284	57	298	57	30	76
			Northbound LT	11	22	42	57	32	71
			Southbound LT	376	149	343	#174	189	166
42	Gurr / Belcher	Signal							
			Eastbound LT	332	219	309	202	203	195
			Eastbound RT	268	32	238	30	63	61
			Northbound LT	197	#197	230	#239	149	175
			Southbound RT	255	167	336	228	200	251

# Denotes that estimated two-cycle flow rate exceeds capacity for movement. For occurrences of "#" SYNCHRO recommends checking v/c of the movement in question. If it is less than 1.00 – queue result is considered stable. If v/c is greater than 1.00, green time should reallocate until movement's v/c is less than 1.00. These checks were performed – queue results above are considered stable.
Reported turn volumes reflect lane-group volumes as estimated by SYNCHRO-7

Table 18 Phase 1A 2025 HCS Analysis for Multi-Lane Segments

Highway	Location	Direction1 (NB/EB)		Direction2 (SB/WB)	
		Density (vpmpl)	LOS	Density (vpmpl)	LOS
AM					
AME	SR-99 and Green Sands/Belcher	8.6	A	6.6	A
Green Sands/Belcher	Buhach and AME	8.7	A	6.7	A
PM					
AME	SR-99 and Green Sands/Belcher	7.3	A	6.1	A
Green Sands/Belcher	Buhach and AME	7.9	A	7.9	A

Phase 1A 2045 Peak Hour LOS Results

A 20-year horizon was projected out from the opening year (2025) for Phase 1A. SYNCHRO and SIM-TRAFFIC intersection LOS results for 2045 are shown in **Table 19**. **Table 20** shows the turning queue summary.

All of the study intersections are expected to operate at acceptable LOS (D or better) for all movements for Caltrans intersections and for overall for County operated intersections.

Table 19 Phase 1A 2045 Peak Hour LOS Analysis

No.	Intersection	Control	Movement	Synchro				SimTraffic			
				Weekday AM		Weekday PM		Weekday AM		Weekday PM	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
34	AME / SR-99 NB Ramps	Signal	Average	10.5	B	8.4	A	4.1	A	2.8	A
			Westbound RT	33.3	C	34.8	C	6.9	A	4.9	A
			Northbound Thru	2.4	A	1.6	A	5.2	A	3.1	A
			Sountbound Thru	1.7	A	1.3	A	3.1	A	2.9	A
			Southbound RT	2.2	A	2.9	A	0.8	A	0.7	A
35	AME / Belcher	Signal	Average	11.9	B	12.9	B	17.6	B	16.0	B
			Eastbound Thru	31.6	C	31.7	C	23.0	C	24.0	C
			Eastbound RT	8.6	A	9.3	A	6.6	A	6.4	A
			Westbound LT	16.7	B	17.9	B	21.5	C	27.9	C
			Westbound Thru	3.8	A	4.4	A	7.8	A	10.3	B
			Northbound LT	13.7	B	15.4	B	36.6	D	24.2	C
			Northbound RT	5.1	A	3.2	A	10.9	B	6.3	A
41	Buhach / Belcher	Signal	Average	38.8	D	40.0	D	47.2	D	39.7	D
			Eastbound LT	46.3	D	47.2	D	63.4	E	52.1	D
			Eastbound Thru-RT	41.1	D	48.7	D	47.4	D	49.4	D
			Westbound LT	67.5	E	48.7	D	97.2	F	62.6	E
			Westbound Thru	30.5	C	25.4	C	48.6	D	33.5	C
			Westbound RT	25.9	C	23.7	C	17.7	B	9.7	A
			Northbound LT	44.4	D	49.6	D	49.0	D	53.5	D
			Northbound Thru-RT	35.9	D	43.4	D	32.9	C	39.0	D
			Southbound LT	39.3	D	49.2	D	65.2	E	63.1	E
			Southbound Thru	27.0	C	34.9	C	31.4	C	36.7	D
42	Gurr / Belcher	Signal	Average	29.2	C	31.0	C	28.1	C	31.2	C
			Eastbound LT	26.9	C	26.3	C	35.6	D	31.8	C
			Eastbound RT	2.9	A	0.3	A	6.7	A	6.2	A
			Northbound LT	51.7	D	54.2	D	44.8	D	47.8	D
			Northbound Thru	10.2	B	8.4	A	19.5	B	19.5	B
			Southbound Thru	47.0	D	47.7	D	40.6	D	48.7	D
			Southbound RT	47.0	D	47.7	D	28.1	C	36.9	D

Table 20 Phase 1A 2045 Peak Hour Turning Queues

No.	Intersection	Control	Movement	Synchro				SimTraffic	
				Weekday AM Peak		Weekday PM Peak		Weekday AM	Weekday PM
				Turning Volumes (vph)	95th Queue (ft.)	Turning Volumes (vph)	95th Queue (ft.)	95th Queue (ft.)	95th Queue (ft.)
34	AME / SR-99 NB Ramps	Signal							
			Westbound RT	485	59	324	0	106	67
			Southbound RT	449	1	404	0	39	0
35	AME / Belcher	Signal							
			Eastbound RT	552	184	544	201	178	173
			Westbound LT	242	m102	270	m115	178	220
			Northbound LT	543	155	518	166	299	170
			Northbound RT	479	55	306	15	177	114
41	Buhach / Belcher	Signal							
			Eastbound LT	308	#372	222	240	204	205
			Westbound LT	408	#506	463	#580	427	415
			Westbound RT	365	68	365	72	480	334
			Northbound LT	39	59	78	109	76	121
			Southbound LT	443	#247	407	#265	200	200
42	Gurr / Belcher	Signal							
			Eastbound LT	444	#387	365	#287	335	335
			Eastbound RT	349	4	259	1	112	76
			Northbound LT	297	#303	280	#290	201	203
			Southbound RT	333	#364	425	#458	412	596

# Denotes that estimated two-cycle flow rate exceeds capacity for movement. For occurrences of "#" SYNCHRO recommends checking v/c of the movement in question. If it is less than 1.00 – queue result is considered stable. If v/c is greater than 1.00, green time should reallocate until movement's v/c is less than 1.00. These checks were performed – queue results above are considered stable.
Reported turn volumes reflect lane-group volumes as estimated by SYNCHRO-7

Table 21 and **Table 22** shows the HCS analysis results, respectively for freeway merge-diverge and segments of AME and Green Sands/Belcher Ave. Freeway and ramp volumes for 2045 were developed using 1 percent annual growth projected out from 2035. **Figure 11** shows the 2045 volumes for mainline freeway and ramps.

The freeway merge-diverge analysis (**Table 21**) indicate deficient operation for both merge and diverge operations in the northbound direction of SR-99 during the PM peak hour. An unacceptable diverge operation for SR-99 NB off-ramp would occur because a breakdown of upstream mainline entering the diverging area. The ultimate design for SR-99 (e.g. widening to 8 lanes) would improve the mainline operation. An unacceptable merge operation of SR-99 NB on-ramp from AME can be improved using a ramp metering, which the analysis is provided in the following section.

Figure 11 AME Phase 1A 2045 Freeway-Ramp Volumes

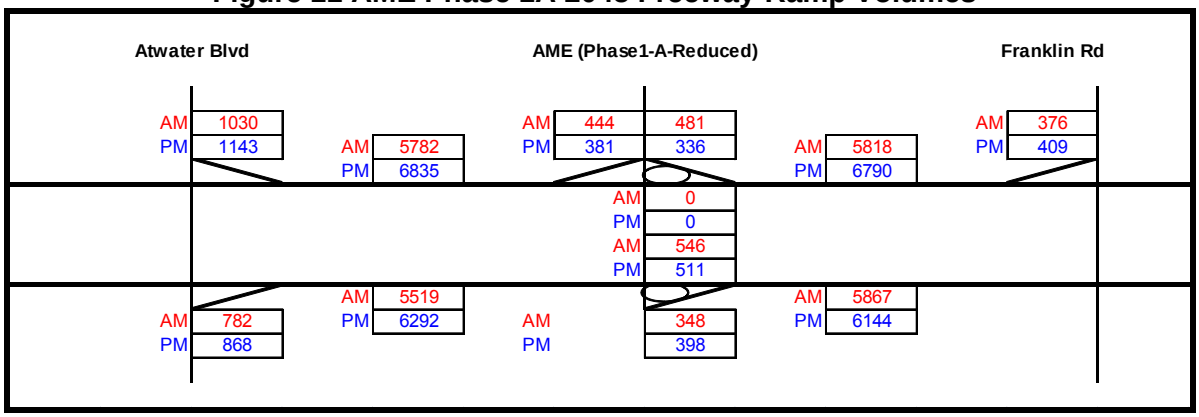


Table 21 Phase 1A 2045 HCS Analysis for Freeway Merge-Diverge

SR-99	2045							
	AM				PM			
	Speed (S_R)	Position	Density	LOS	Speed (S_R)	Position	Density	LOS
NB off to AME	56.7	D & U	7.0	A	Unstable	D & U	12.2	F
NB on from AME	57.5	D & U	27.6	C	Unstable	D & U	33.0	F
SB loop off to AME	56.5	D & U	5.4	A	56.6	D & U	9.5	A
SB on from AME	59.4	D & U	25.0	C	55.7	D & U	29.6	D

Speed (SR) = Space mean speed for vehicles within ramp influence area (mph)
D = With adjacent downstream ramp
U = With adjacent upstream ramp

Table 22 Phase 1A 2045 HCS Analysis for Segments

Highway	Location	Direction1 (NB/EB)		Direction2 (SB/WB)	
		Density (vpmpl)	LOS	Density (vpmpl)	LOS
AM					
AME	SR-99 and Green Sands/Belcher	10.6	A	8.2	A
Green Sands/Belcher	Buhach and AME	10.2	A	9.7	A
PM					
AME	SR-99 and Green Sands/Belcher	8.5	A	8.4	A
Green Sands/Belcher	Buhach and AME	9.8	A	9.9	A

Phase 1A 2045 Ramp Metering Analysis

As indicated in the previous section, the SR-99 NB on-ramp can be metered to achieve acceptable LOS operation during the PM peak hour. The merging activity for southbound on-ramp is expected to operate at acceptable LOS level during both AM and PM peak hours, thus the ramp metering analysis is not performed in this direction.

Table 23 presents the analysis results for ramp metering operation with and without HOV bypass lane. HOV volumes were assumed at 16% of on-ramp traffic for the scenario with HOV bypass lane. To maintain an acceptable LOS D, it would require an on-ramp meter with a discharge rate of 196 vph for the scenario without HOV bypass lane and a discharge rate of 126 vph for the scenario with HOV bypass lane. The discharge rate of 200 vph would not trigger a change of LOS F to LOS D operation for the given condition. By providing 760 ft. of storage capacity, the scenario without HOV bypass lane would not experience a queue spillback. **Table 24** presents the HCS analysis results for metered on-ramp for northbound SR-99.

Table 23 Phase 1A 2045 Ramp Metering Analysis Results for NB On-Ramp

Description	AME Phase 1-A Configuration PM Peak	
	Without HOV Bypass	With HOV Bypass
	NB	NB
Arrival Rate:		
Forecasted Traffic Volumes	381	381
Percentage of HOV Vehicles	0%	16%
HOV Vehicles	0	61
Adjusted Traffic Volumes [1]	381	320
Peak Hour Factor (PHF)	0.92	0.92
Proportion of Heavy Vehicle 1	4%	4%
Proportion of RVs 1	0%	0%
Factor for Heavy Vehicle and RVs	0.94	0.94
Flow Rate (vph) [2]	439	369
Average Arrival Rate (vps)	0.12	0.10
Peak 15-min Arrival Rate	110	92
Peak 5-min Arrival Rate	37	31
Discharge Rate:		
Maximum Capacity or Discharge Rate (vph) [3]	196	126
Average Discharge Rate (vps)	0.05	0.04
Peak 15-min Discharge Rate	49	32
Peak 5-min Discharge Rate	16	11
Ramp Flow Volume (vph) (Rate + HOV Vehicles)	170	170
Assumptions/Given:		
Average Car Length (ft)	25	25
Approx. Storage Length (ft per lane) [4]	760	760
Number of On-Ramp Lanes	2	1
Approx Total Storage Capacity (ft)	1,520	760
Peak 15-min Results:		
Residual Queue Length (veh) [5]	61	61
Residual Queue Length (ft)	1,519	1,517
Resultant Queue Spillback (ft) [6]	0	**757**
Resultant Queue Spillback (veh)	0	**30**
Peak 5-min Results:		
Residual Queue Length (veh) [5]	20	20
Residual Queue Length (ft)	506	506
Resultant Queue Spillback (ft) [6]	0	0
Resultant Queue Spillback (veh)	0	0

[1] - Forecasted traffic volumes were reduced by 11.5% to exclude HOV-lane traffic

[2] - Computed as traffic volumes divided by a PHF

[3] - Based on Highway Design Manual (HDM), Sixth Edition.

[4] - Based on the preliminary concept plan prepared by Mark Thomas & Company

[5] - Difference of corresponding arrival rate and departure rate

[6] - Queues in feet exceeding the available storage capacity

Shaded cell with bold letter indicates spillbacks

vph - vehicles per hour, vps - vehicles per second

Table 24 Phase 1A 2045 HCS Analysis for SR-99 NB Metered On-Ramp

SR-99	2045 PM With and Without HOV Bypass			
	Speed (S_R)	Position	Density	LOS
NB on from AME	53.8	D & U	31.3	D

Phase 1A-Reduced Findings

Based on the established design of Phase 1A, all study intersections meet their design year requirements based on SIM-TRAFFIC simulated results. For state operated intersections – this finding applies to each individual movement. For County operated intersections, this finding applies to the intersection as a whole although some individual movements are projected to incur unacceptable delay.

The following AME Phase 1A-Reduced recommendations are provided below:

Recommendation 1:

The 2-lane segment of AME Phase 1A-Reduced is expected to operate at acceptable level of services (LOS "D" or better) until 2024 and the 2-lane segment of Green Sands/Belcher is expected to operate at acceptable level of services (LOS"D") or better until 2022. It should be noted that the segment LOS for Green Sands/Belcher was computed using the Highway Capacity Manual 2-Lane highway analysis procedure. Given the presence of signalized intersections at Buhach and the AME, the 2-lane highway measure of effectiveness (percent time spent following) may not be a valid approach under future conditions. Hence, operational performance of this county roadway is more appropriately determined by the operations of the signalized intersections at Buhach and the AME. Both these intersection are shown to meet operational design year requirements.

Given that the roadway's intersections are shown to meet design year requirements and the stated questionable validity of applying the rural 2-lane highway LOS procedure to this county roadway under future conditions – it is recommended that MCAG consult with the County of Merced to determine appropriate actions (if any) should be taken. At a minimum, it is recommended that these agencies implement a monitoring program to evaluate traffic conditions on this roadway after construction of the AME Phase 1A Reduced to evaluate traffic operations.

Recommendation 2:

The intersection of AME/SR99 NB Off-Ramp (#34) is projected to operate acceptably as a stop controlled intersection until 2034 (one your shy of the design year). Based on 2035 volumes, this intersection would also satisfy peak hour signal warrants. However, based on simulated results, queue spill-back conditions onto the SR-99 mainline is not projected to occur throughout the design year. A traffic signal shall be considered at this intersection when signal warrants are met - whether it be during Phase 1A-Reduced or Phase 1A.

Additional Considerations:

For information purposes, mitigation has been identified for each intersection movement at the two intersections (#41 and #43) although as stated above they are not required for locally operated facilities. The identified mitigations do not consider potential right-of-way constraints, local agency support or the financial feasibility to implement. The identified improvements to the intersections outside of the State Right of Way would result in LOS D or better for individual movement as described below.

Intersection of Buhach and Belcher (#41)

- Provide dual left turn for WBL
- Provide dual left turn for EBL and add a receiving lane on north leg to accommodate WBR (free right) tapering down to two lanes at 500 feet.
- Provide separate right-turn channel for SBR
- Provide minimum left turn storage of 350 ft. for SBL

Intersection of Buhach and Clover (#43)

This is a two-way stop controlled T intersection within the County of Merced's ROW. For these types of intersections, it is not unusual for the minor street movement to have LOS D, E, or F conditions while the major street movements have LOS A, B, or C conditions. In such cases, the minor street traffic experiences delays that can be substantial for individual minor street vehicles, but the majority of vehicles using the intersection have very little delay. Usually in such cases the minor street traffic volumes are relatively low. If the minor street volume is large enough, improvements to reduce the minor street delay may be justified, such as channelization, widening, or signalization. At the Buhach/Clover intersection, relatively few vehicles will be subject to stop control at the side street (25 vhp and 70 vph in the AM and PM peak hours respectively). These vehicles are projected to experience significant delays waiting for acceptable gaps within the traffic stream traveling on Buhach. Conversely, motorists traveling on Buhach will experience little or no delay at this intersection. Given the relatively small amount of affected traffic - how much side street delay at two-way stopped controlled intersections is considered acceptable is typically at the discretion of the local agency's traffic engineer. Although Caltrans operational criteria does not apply at this intersection, the only improvement that allows every individual movement to operate at LOS D or better in 2035 Phase 1A-Reduced includes:

- Signalized intersection – provide SBL and WBR lane channelization

It should be noted that this intersection does not meet the peak hour signal warrant (Warrant #3). The close proximity of this intersection to the intersections of Buhach/Ashby and Buhach/Green Sands is also a concern – the potential for queue spill-back at adjacent intersections resulting from signal control on Buhach. Lastly, any improvement at this location during Phase 1A Reduced will be obsolete under Phase 1A – as this intersection would cease to exist.

Phase 1A Findings

All study intersections and segments for AME Phase 1A are expected to operate at acceptable level of service (LOS "D" or better) for the duration design year analysis i.e., 2045.

The following AME Phase 1A recommendation is as follows:

Recommendation 1:

Under Phase 1A, the proposed interchange at AME/SR-99 receives no operational benefit from providing the northbound loop on-ramp. To reduce costs, the ramp and associated lane geometry (right turn lane on northbound AME) can be deferred to AME Phase 3 (continuation of the AME south to SR-140) if desired.

Recommendation 2:

Based on a metering rate of 196 vph, installing a ramp meter at the AME northbound on-ramp will improve SR-99 merge influence area operations from LOS F to LOS D. Based on this metering rate and available storage on the ramp, queue spill-back will not occur. For design of an HOV bypass lane at the ramp, additional ramp storage of approximately 757 ft. would be required to achieve the same operational benefit based on a metering rate of 127 vph.

Additional Considerations:

Although Caltrans operational criteria do not apply at the intersections outside of the State Right of Way, the recommended improvements needed to allow every individual movements of the intersections at Buhach and Belcher (#41) to operate at LOS D or better in Phase 1A include:

Intersection of Buhach and Belcher (#41)

- Provide dual left turn for WBL
- Provide dual left turn for EBL and add a receiving lane on north leg to accommodate WBR (free right) tapering down to two lanes at 500 feet.
- Provide separate right-turn channel for SBR
- Provide minimum left turn storage of 350 ft. for SBL

The identified mitigations do not consider potential right-of-way constraints, local agency support or the financial feasibility to implement.

APPENDIX B

SR 99/Buhach Ramp Closures
Supplemental Traffic Analysis

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Dowling Associates, Inc.

Date: May 25, 2011

Transmittal

To:	**Jim Sims**	Organization:	**Mark Thomas & Co., Inc.**
CC:	**File**	Address:	**1960 Zanker Road San Jose, CA 95112**
Phone:	**(408) 453-5373**	Fax:	**(408) 453-5390**
From:	***Jim Damkowitch Project Manager***	*Reference #:*	***P05-058***
Subject:	**SR-99 / Buhach Ramp Closures – AME Phase 1A Reduced Construction**		

☐ **Urgent** ☐ **For Review** ☐ **Reply ASAP** ☐ **For your Information** ☐ **As Requested** ☐ **Original will follow by mail**

☐ **Fax** ☐ **USPS** ☐ **Fed-Ex Overnight** ☐ **Fed-Ex Two-Day** ☐ **Courier/Hand Delivery** ☐ **Pick-up**

This Buhach / SR-99 ramp closure supplemental analysis is being provided to facilitate Phase 1A-Reduced and 1A design of the Atwater-Merced Expressway (AME). As a subconsultant to Mark Thomas & Company (Prime Consultant), Dowling Associates developed this SR-99 / Buhach Ramp Closure traffic analysis in a manner consistent with the Caltrans approved documents:

- Traffic Analysis for the Atwater-Merced Expressway Project PA-ED (May 24, 2007)
- Traffic Analysis for the SR-99 Applegate Interchange PSR (December 2, 2010)
- Atwater-Merced Expressway Phase 1A-Reduced and Phase 1A Traffic Analysis (February 14, 2011)

The following four scenarios were analyzed:

- Scenario 1: 2015 Baseline – Buhach / SR-99 Ramps Open
- Scenario 2: 2015 Buhach / SR-99 Northbound Ramp Closure
- Scenario 3: 2015 Buhach / SR-99 Southbound Ramp Closure
- Scenario 4: 2015 Buhach / SR-99 Concurrent (both NB and SB) Ramp Closure

A description of the anlaysis is provided on the following pages.

Introduction

This technical memorandum describes the traffic and circulation implications of closing both the northbound and southbound on- and off-ramps at SR-99 and Buhach Road during the construction phase of the Atwater-Merced Expressway Phase 1A-Reduced project. The purpose of this analysis is to identity how traffic will be redistributed within the study area and the extent of operational degradation it will temporarily cause to adjacent SR-99 ramp intersections and key facilities – both within the City of Atwater and the unincorporated County of Merced. Recommendations for how the ramp closures should be sequenced i.e., all ramps closed concurrently or in combination is provided. Closure of the Buhach ramps during construction of the new AME interchange with SR-99 is anticipated for the duration of up to 9 months. Given that the opening day for the AME Phase 1A-Reduced project is 2015, this analysis is based on the 2015 analysis year.

Study Area

Construction of the AME Phase 1A Reduced design will entail closure of the SR-99 Buhach ramps. Analysis of the operational implications of closing the SR-99 Buhach ramps will entail analyzing the following eight intersections listed in **Table 1**.

Table 1. Study Intersections

Int ID	Location
1	SR-99 NB Ramps / Sycamore Ave
2	SR-99 SB Ramps / Commercial Driveway
3	Bell Drive / SR-99 Ramps Extension
4	Applegate / Commerce Ave
5	Applegate Rd / Sycamore Ave
6	Winton Way / Atwater Blvd
7	Shaffer Rd / Atwater Blvd
8	Franklin / Ashby

Travel Demand Modeling – MCAG Travel Model

The Merced County Association of Governments (MCAG) regional transportation model was used to perform the traffic modeling for this study. Model inputs (housing and employment) have been developed by MCAG to allow a 2030 forecast at 5-year increments (e.g., 2000, 2005, 2010…2030). Phasing of all future planned and programmed infrastructure improvements are coded consistent with MCAG's RTP and FTIP project implementation schedules.

Traffic Diversion Rules

Trip diversion distributions for each Buhach ramp closure were developed based on select link analysis using the MCAG travel model. Select link analysis was performed for each Buhach ramp to determine the origin and destination of trips using a given ramp (i.e., northbound on-ramp; northbound off-ramp; southbound on-ramp and southbound off-ramp). Model runs were then performed with and with-out the Buhach northbound and southbound ramps. Volume difference plots were developed to isolate the change in model link volumes resulting from each closure respectively. This model information was

used to develop the distributions of diverted traffic caused by the closure of each Buhach ramp shown in **Figure 1** through **Figure 4**.

The projected distribution of diverted traffic as a result of each individual Buhach ramp closure is described below.

Buhach NB On-Ramp Closure: The forecasted northbound Buhach on-ramp volume will be redistributed primarily westward with 80% diverting to Atwater Blvd to access the SR-99 northbound ramps at either Applegate (40%) or Atwater Blvd (40%). The remaining 20% will access SR-99 from the Franklin Road SR-99 NB on-ramp.

Buhach NB Off-Ramp Closure: The forecasted northbound Buhach off-ramp volume will redistribute to the Atwater Blvd NB off-ramp (60%) and to the Franklin NB off-ramp (25%). A small amount of traffic (15%) will avoid using the freeway and instead travel westward on either SR-140 (10%) or Santa Fe (5%).

Buhach SB On-Ramp Closure: The forecasted southbound Buhach on-ramp volume will be diverted westward to access SR-99 at the Atwater Blvd southbound on-ramp (65%). The remaining Buhach on-ramp volumes will avoid the freeway and divert to either Santa Fe (20%) or SR-140 (15%) to travel east (south) towards the City of Merced.

Buhach SB Off-Ramp Closure: All the forecasted southbound Buhach off-ramp volume will redistribute to the Applegate southbound off-ramp (100%). Most of this traffic will travel east on Atwater Blvd (60%) or access areas south of SR-99

To establish a closed system and ensure internal consistency, the following also applies:

- Diversion rules reflect a closed system – no net change in the study area traffic volume will result from any given construction scenario.
- Traffic diversion for concurrent ramp closures can be determined by grouping/adding individual distributions together.
- Diversion rules apply to both the AM and PM peak hours.

Diversion rules allow the magnitude of each specific ramp closure condition to be isolated and tracked.

The above distributions provide the trip diversion rules required to re-assign the following 2015 Buhach ramp volumes to other facilities (i.e., roadways and intersections) for operational analysis. The source of these 2015 turn movement projections is the Traffic Analysis for the Atwater-Merced Expressway Project for development of the AME Project Report (Approved May 24, 2007).

2015 AM/PM Peak Hour Buhach Ramp Volumes

Ramp	AM Peak Hour	PM Peak Hour
Buhach NB On-Ramp	340	365
Buhach NB Off-Ramp	385	485
Buhach SB On-Ramp	445	410
Buhach SB Off-Ramp	330	330

Figure 1. Buhach Ramp Closure Study Area

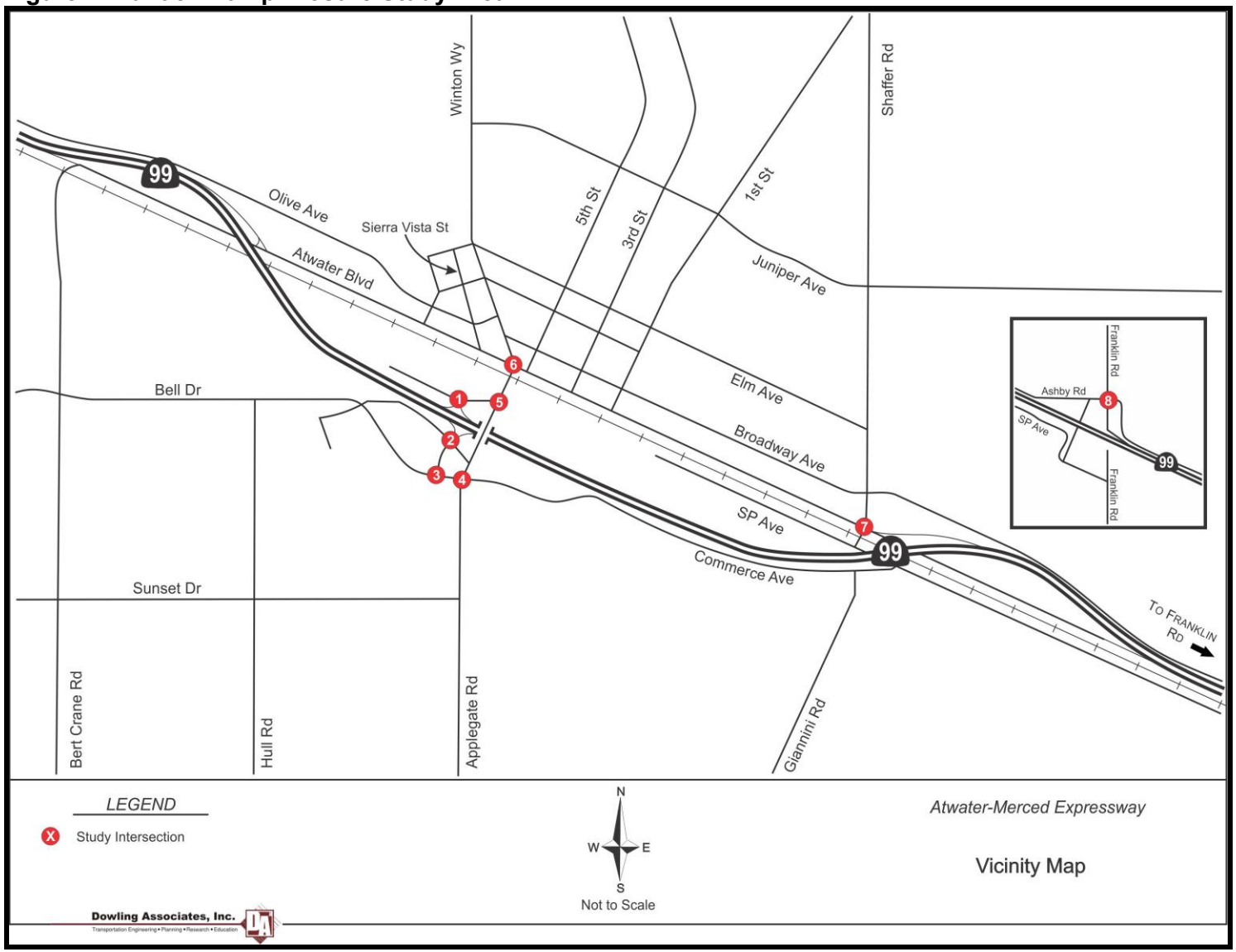


Figure 2. Buhach Northbound On-Ramp Trip Diversion

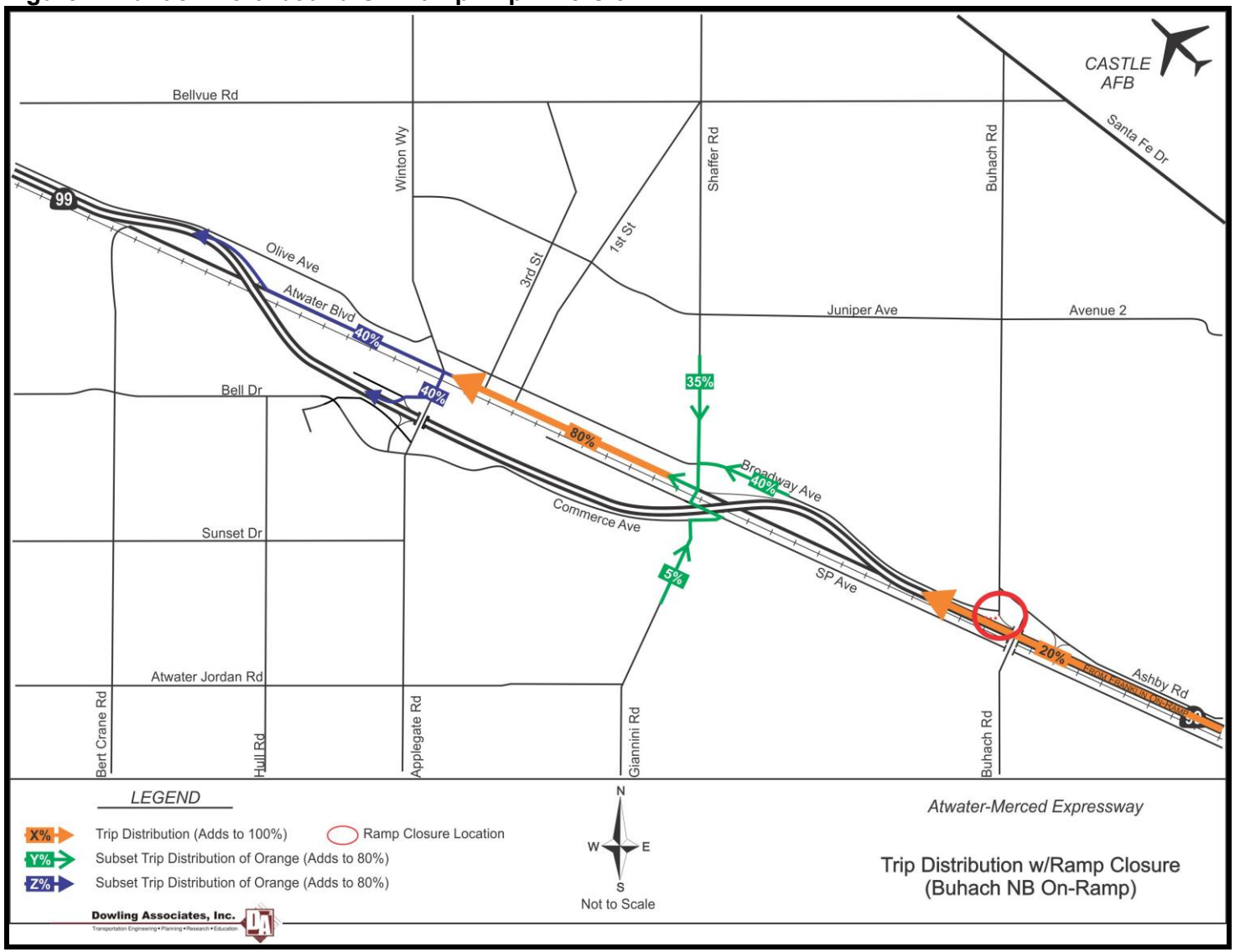


Figure 3. Buhach Northbound Off-Ramp Trip Diversion

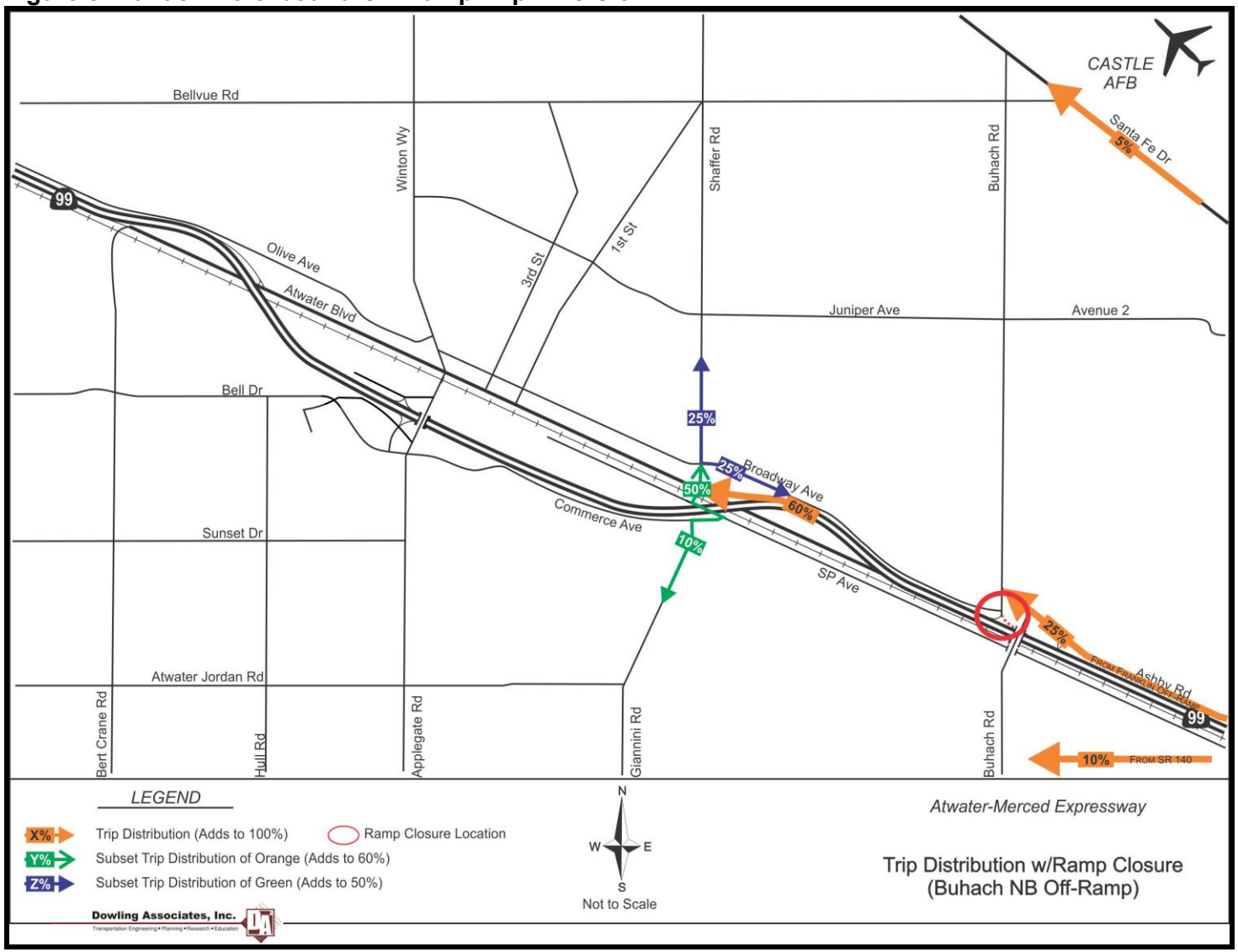


Figure 4. Buhach Southbound On-Ramp Trip Diversion

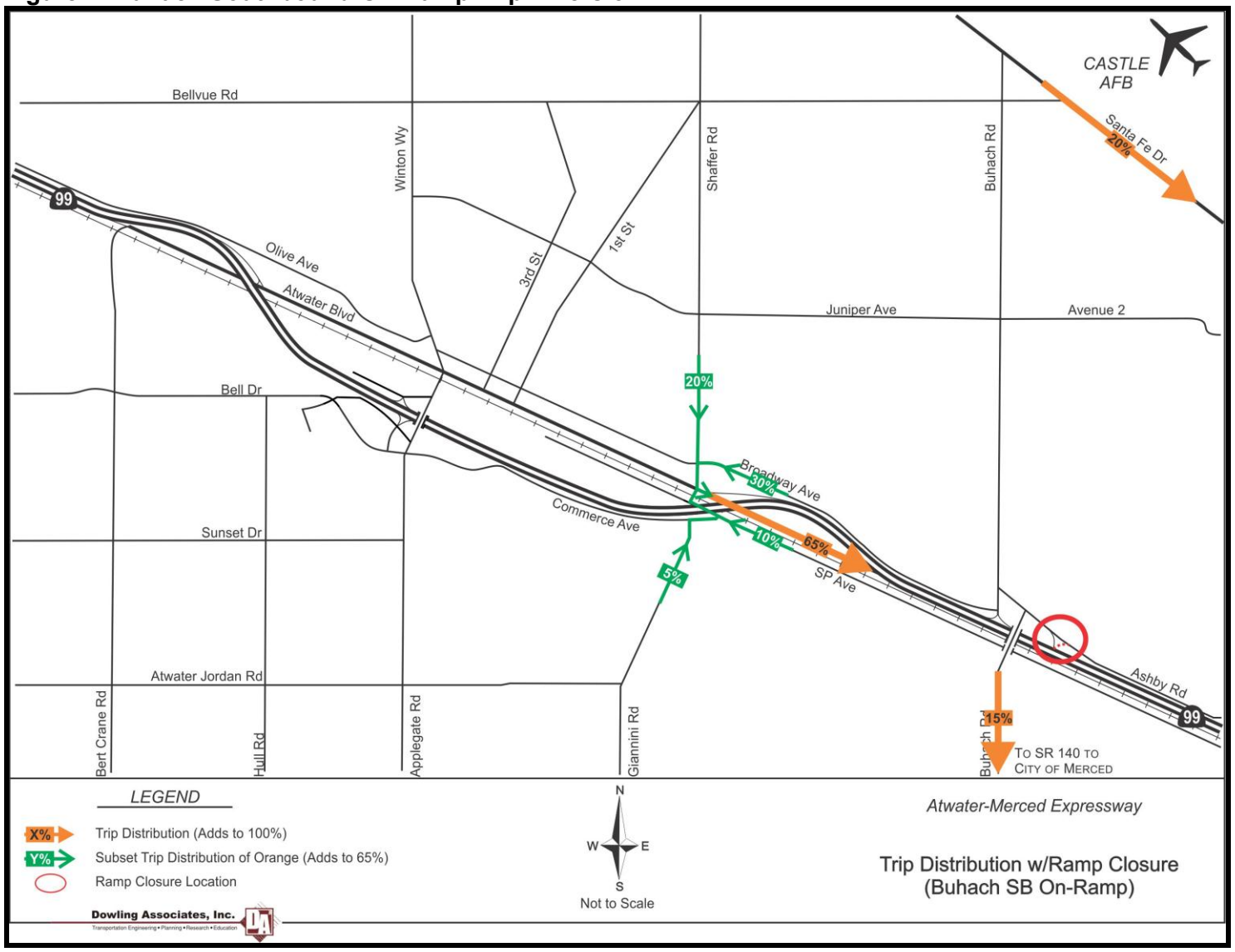
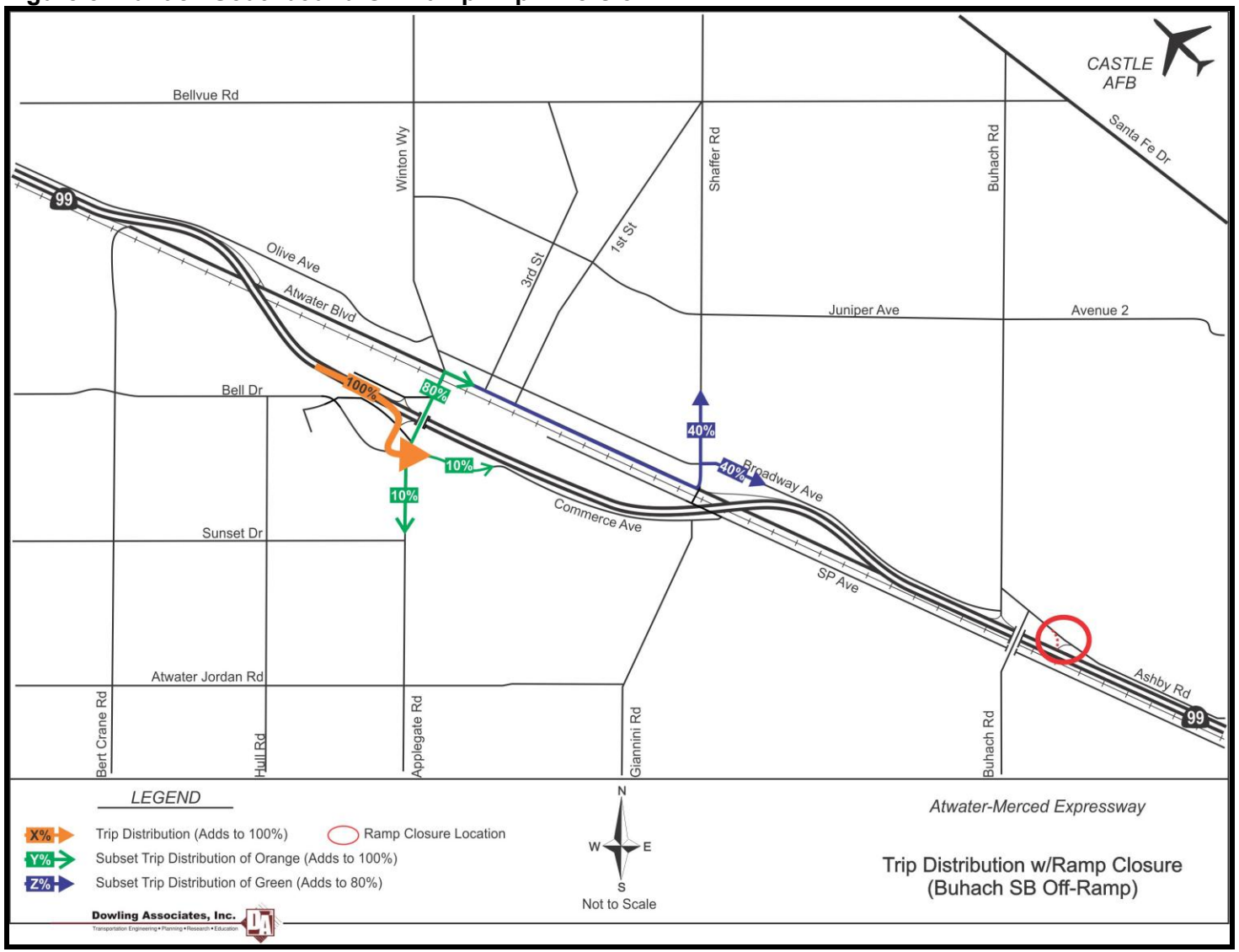


Figure 5. Buhach Southbound On-Ramp Trip Diversion



8

Traffic Operations Parameters

Generalized operational assumptions used for this analysis are as follows:

Ideal Saturation Flow Rate:	Intersections: 1900 vehicles per hour per lane (vphpl)
Pk Hour Factor (PHF):	Field Data, No Field Data, Future Condition – HCM Default of 0.92
Pk Hour Traffic Volumes:	Source Documents: AME and Applegate Traffic Studies
Pedestrian Calls:	Field Data, No Field Data – Consult District 10
Lane Width:	Field Data, No Field Data – Consult District 10
Heavy Vehicles:	Field Data, No Field Data – Consult District 10
Cycle Length	Field Data, No Field Data – Consult District 10
Right Turn On Red (RTOR)	Estimate based on SYNCHRO-7
Lane Utilization Factor:	Field Data, No Field Data – Consult District 10
Future Year Signal Timing:	Optimized based on SYNCHRO-7 software

Criteria of Significance

Consistent with the Traffic Analysis for the Atwater-Merced Expressway Project Report (May 24, 2007) and the Traffic Analysis for the SR-99 Applegate Interchange Project Study Report (December 2, 2010), the threshold level of LOS D defines acceptable LOS operations. A deficiency is defined as any intersection that is shown to operate at LOS E or worse. This threshold was based on MCAG's Regional Transportation Plan and the State Congestion Management Program LOS standards for state and regional facilities within urbanized counties (pop > 50,000).

For state facilities, Caltrans identifies a target of LOS C for impacts to the state highway system (i.e., LOS D or worse is deficient). Caltrans guidelines acknowledge that this may not always be feasible and for the lead agency (MCAG) to consult with Caltrans to determine the appropriate LOS threshold for state facilities. For consistency, LOS D was used as significance criteria for both local and state operated facilities.

At signalized intersections, LOS was determined based on the average control delay for the intersection as a whole. For all non-signalized intersections (state or locally operated), LOS was determined based on the highest average delay approach.

Scenario 1: 2015 Baseline – Buhach / SR-99 Ramps Open

The source of the 2015 turning movement volumes for each location is indicated in **Table 2** below.

Table 2. Source of Baseline Turning Movements

Int ID	Location	Source of 2015 Turning Movements
1	SR-99 NB Ramps / Sycamore Ave	SR-99 / Applegate I/C PSR
2	SR-99 SB Ramps / Commercial Driveway	SR-99 / Applegate I/C PSR
3	Bell Drive / SR-99 Ramps Extension	SR-99 / Applegate I/C PSR
4	Applegate / Commerce Ave	SR-99 / Applegate I/C PSR
5	Applegate Rd / Sycamore Ave	SR-99 / Applegate I/C PSR
6	Winton Way / Atwater Blvd	SR-99 / Applegate I/C PSR
7	Shaffer Rd / Atwater Blvd	SR-99 / Applegate I/C PSR
8	Franklin / Ashby	Atwater-Merced Expressway PA-ED

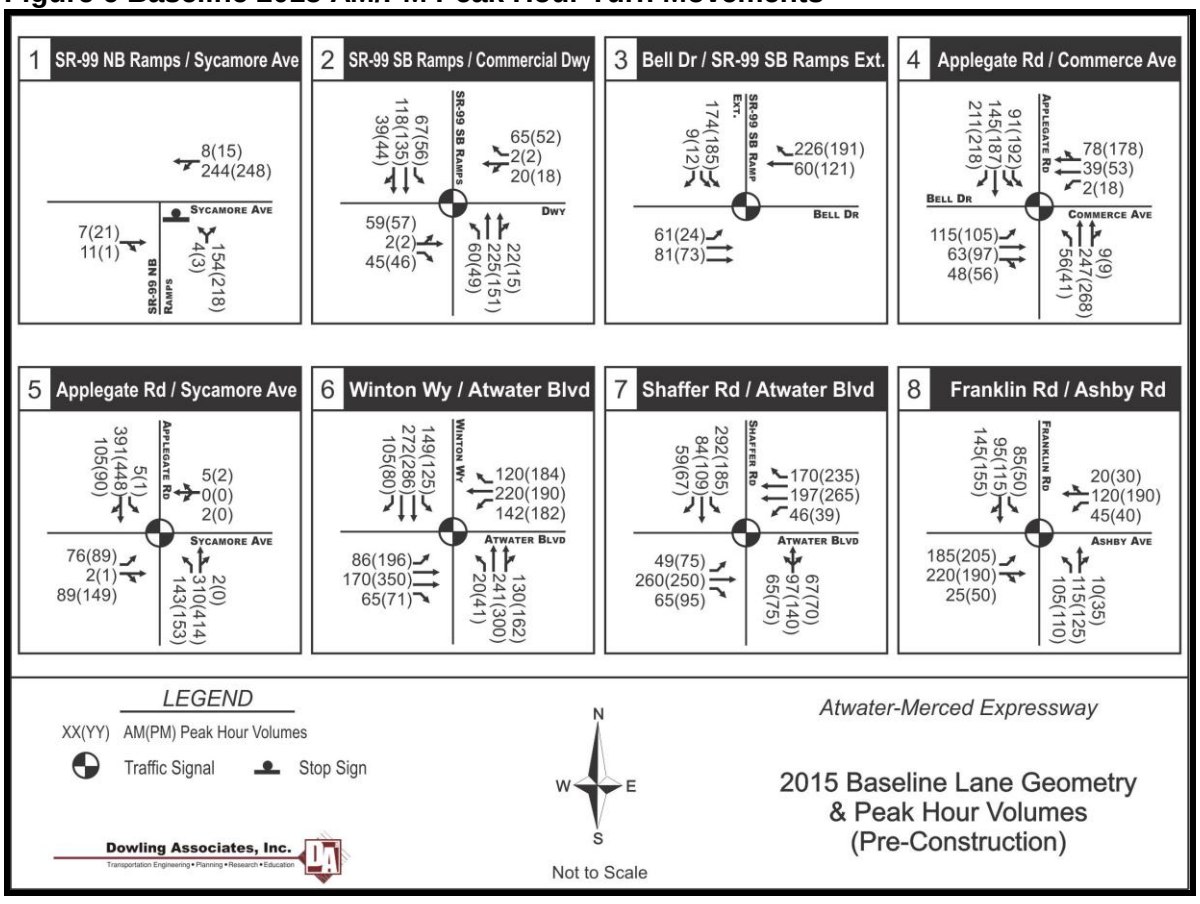
Since development of the SR-99 Applegate Interchange PSR, new access to several developments (fast food restaurant with drive through and diner) east of the SR-99 SB Ramps / Commercial Driveway (formally Bell Lane) has occurred (Int # 2). To better reflect the 2015 baseline traffic generated by these developments[1] and the new commercial access – ITE 8th Edition AM/PM peak hour trip generation estimates were used to provide ingress and egress movements from the commercial driveway access. These trips were distributed (i.e., added) to the baseline 2015 turn movements based on existing turn movement distributions and modeling results. Hence, some intersection movements may show slightly greater volume than what is reported in the Atwater-Merced Expressway PA-ED and SR-99 Applegate Interchange PSR 2015 traffic analysis sections.

All turning movements were checked and adjusted to achieve network balance.

The 2015 Baseline AM/PM peak hour intersection turn movement volumes are shown in **Figure 6**. Baseline 2015 (pre-construction of the AME interchange) LOS results are shown in **Table 3**. All intersections are shown to operate acceptably under 2015 conditions.

SYNCRHO-7 LOS worksheets are provided as an attachment to this memorandum.

Figure 6 Baseline 2015 AM/PM Peak Hour Turn Movements



[1] The 2015 SR-99 Applegate Interchange PSR analysis was based on interpolation of existing counts with 2035 travel forecasts that reflect build-out of the commercial areas near the Applegate Interchange.

Table 3 Baseline 2015 AM/PM Peak Hour LOS Results

Int ID	Location	AM Peak Hour Delay(sec)	AM Peak Hour LOS	PM Peak Hour Delay/LOS	PM Peak Hour LOS
1	SR-99 NB Ramps / Sycamore Ave	9.3	A	9.6	A
2	SR-99 SB Ramps / Commercial Driveway	29.5	C	25.7	C
3	Bell Drive / SR-99 Ramps Extension	17.5	B	17.0	B
4	Applegate / Commerce Ave	17.1	B	20.7	C
5	Applegate Rd / Sycamore Ave	26.7	C	41.0	D
6	Winton Way / Atwater Blvd	23.2	C	25.8	C
7	Shaffer Rd / Atwater Blvd	25.2	C	24.0	C
8	Franklin / Ashby	12.9	B	15.2	C

Scenario 2: 2015 Buhach / SR-99 Northbound Ramp Closure

The added diverted traffic from the closure of the Buhach SR-99 northbound ramps is provided in **Figure 7**. The 2015 Buhach Northbound Ramp Closure AM/PM peak hour intersection turn movement volumes are shown in **Figure 8**.

The 2015 Buhach Northbound Ramp Closure LOS results are shown in Table 4. All intersections are shown to operate acceptably. SYNCRHO-7 LOS worksheets are provided as an attachment to this memorandum.

Figure 7 Northbound Ramp Closure Added AM/PM Turn Movements

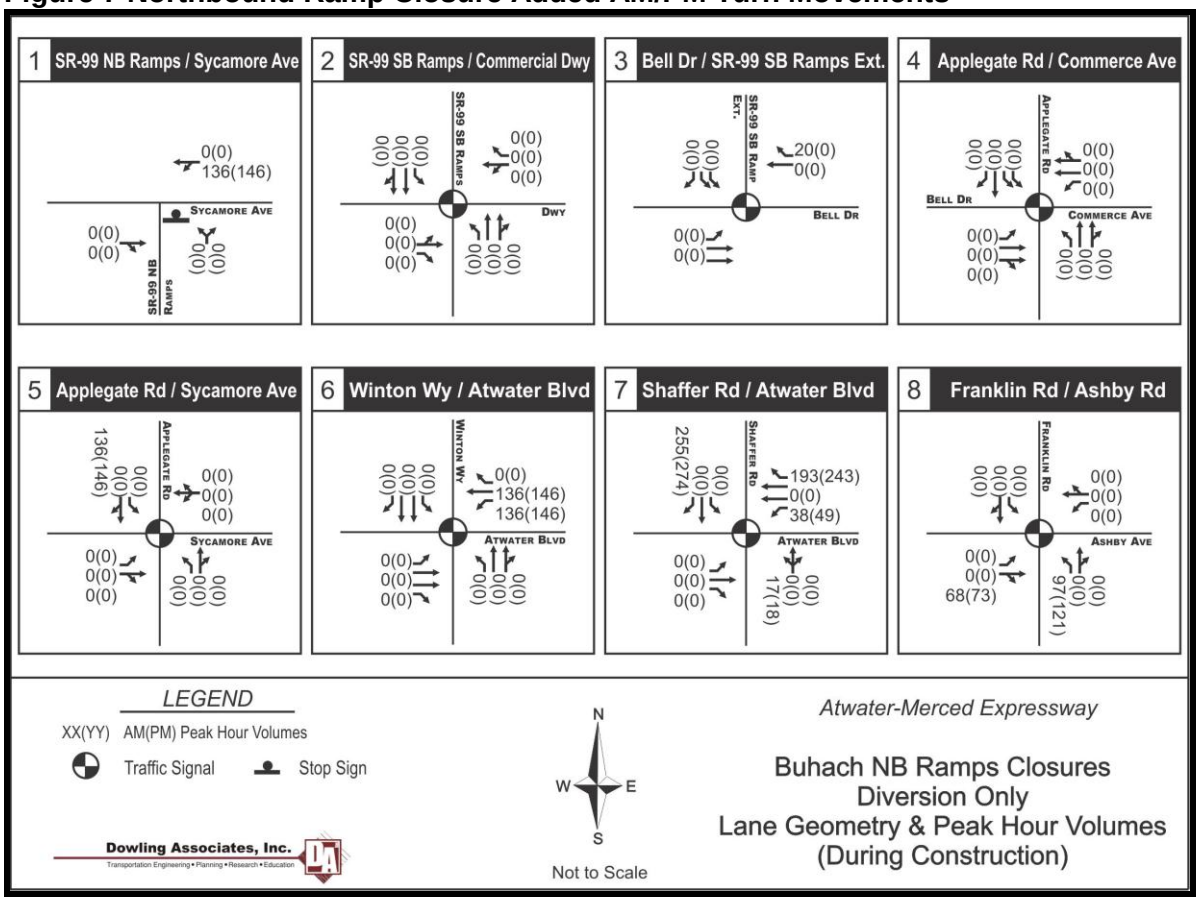


Figure 8 Northbound Ramp Closure 2015 AM/PM Peak Hour Turn Movements

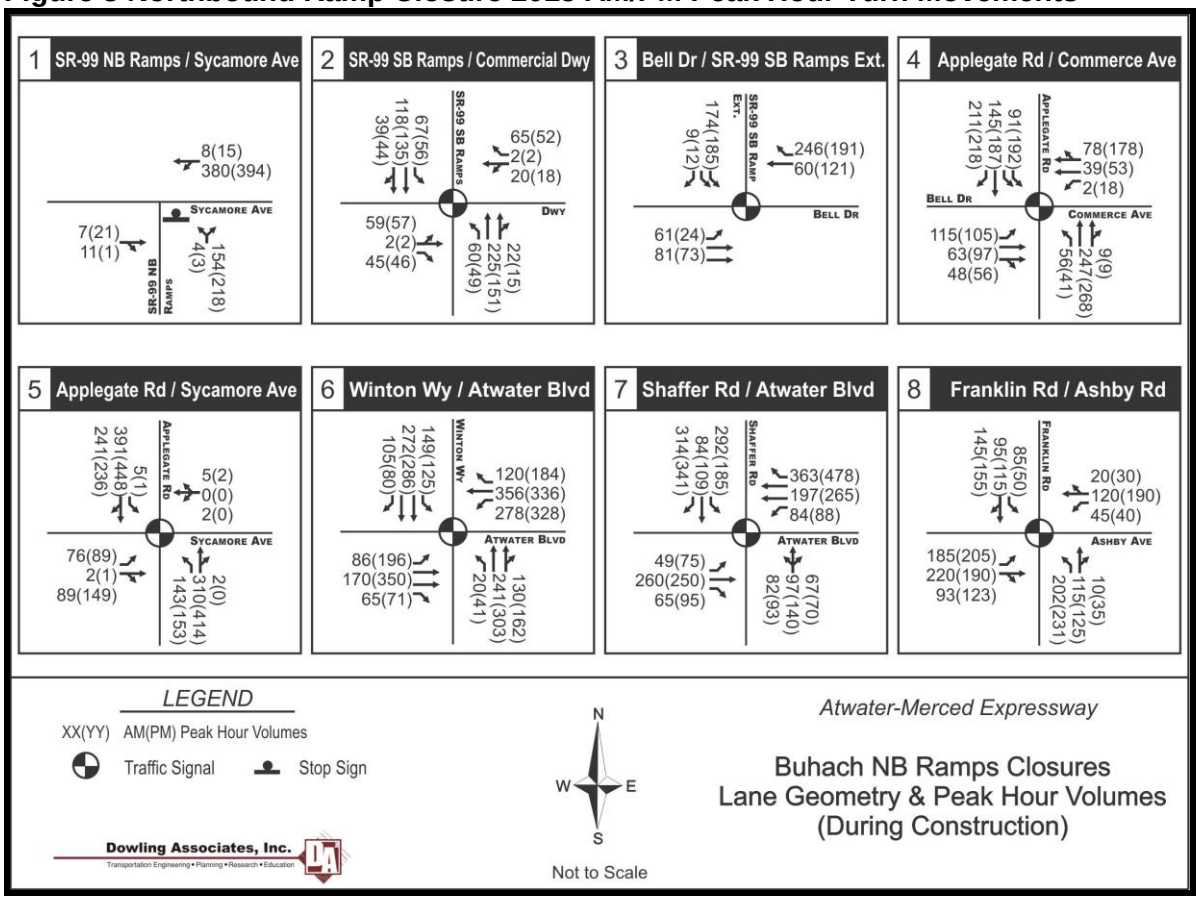


Table 4 Buhach Northbound Ramp Closure 2015 AM/PM Peak Hour LOS Results

Int ID	Location	AM Peak Hour Delay(sec)	AM Peak Hour LOS	PM Peak Hour Delay/LOS	PM Peak Hour LOS
1	SR-99 NB Ramps / Sycamore Ave	9.6	A	9.8	A
2	SR-99 SB Ramps / Commercial Driveway	22.4	C	24.4	C
3	Bell Drive / SR-99 Ramps Extension	22.2	C	23.8	C
4	Applegate / Commerce Ave	18.5	B	22.9	C
5	Applegate Rd / Sycamore Ave	29.5	C	41.4	D
6	Winton Way / Atwater Blvd	30.4	C	36.8	D
7	Shaffer Rd / Atwater Blvd	29.0	C	30.8	C
8	Franklin / Ashby	15.9	C	19.6	C

Scenario 3: 2015 Buhach / SR-99 Southbound Ramp Closure

The added diverted traffic from the closure of the Buhach SR-99 southbound ramps is provided in **Figure 9**. The 2015 Buhach Southbound Ramp Closure AM/PM peak hour intersection turn movement volumes are shown in **Figure 10**.

The 2015 Buhach Southbound Ramp Closure LOS results are shown in **Table 5**. All intersections are shown to operate acceptably except for the following two intersections:

- Applegate Rd / Sycamore Ave (LOS E: PM Peak Hour)
- Shaffer Rd / Atwater Blvd (LOS E: AM Peak Hour)

SYNCRHO-7 LOS worksheets are provided as an attachment to this memorandum.

Figure 9 Southbound Ramp Closure Added AM/PM Turn Movements

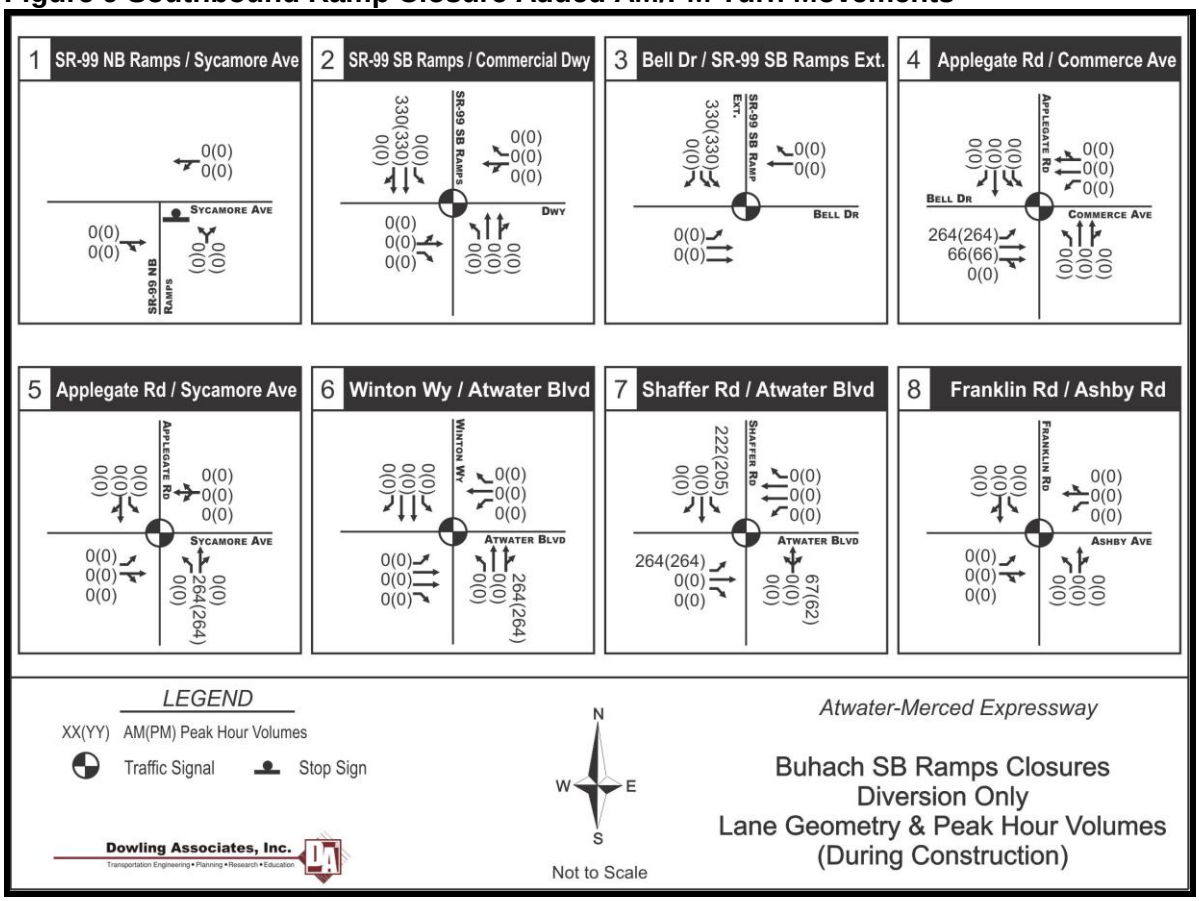


Figure 10 Southbound Ramp Closure 2015 AM/PM Peak Hour Turn Movements

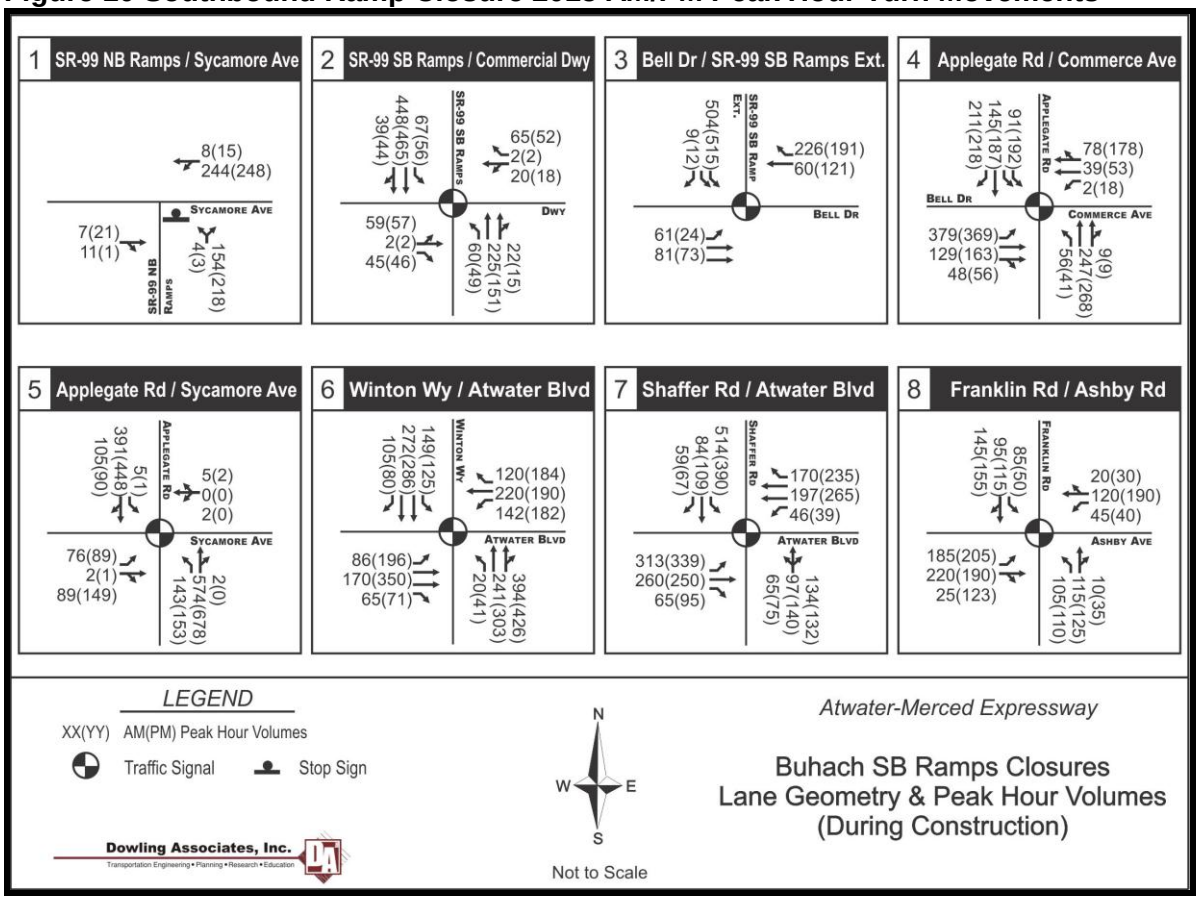


Table 5 Buhach Southbound Ramp Closure 2015 AM/PM Peak Hour LOS Results

Int ID	Location	AM Peak Hour Delay(sec)	AM Peak Hour LOS	PM Peak Hour Delay/LOS	PM Peak Hour LOS
1	SR-99 NB Ramps / Sycamore Ave	9.3	A	9.6	A
2	SR-99 SB Ramps / Commercial Driveway	27.0	C	27.5	C
3	Bell Drive / SR-99 Ramps Extension	17.6	B	12.6	B
4	Applegate / Commerce Ave	27.7	C	32.5	C
5	Applegate Rd / Sycamore Ave	37.6	D	57.5	E
6	Winton Way / Atwater Blvd	28.2	C	36.5	D
7	Shaffer Rd / Atwater Blvd	57.4	E	54.1	D
8	Franklin / Ashby	12.9	B	15.2	C

Scenario 4: 2015 Buhach / SR-99 Concurrent Ramp Closure

The AM/PM peak hour diverted traffic resulting from the concurrent closure of both the Buhach SR-99 northbound and southbound ramps is provided in **Figure 11**. The 2015 Buhach Concurrent Closure AM/PM peak hour intersection turn movement volumes are shown in in **Figure 12**.

The 2015 Buhach Concurrent Ramp Closure LOS results are shown in **Table 6**. All intersections are shown to operate acceptably except for the following two intersections:

- Applegate Rd / Sycamore Ave (LOS F: PM Peak Hour)
- Shaffer Rd / Atwater Blvd (LOS D: AM Peak Hour)[1]

[1] This intersection is shown to operate with a delay of 54.9 seconds – the cusp of LOS D and E. Given that one tenth of second separates this delay result from LOS E it is being identified as an impacted location.

SYNCRHO-7 LOS worksheets are provided as an attachment to this memorandum.

Figure 11 Concurrent Ramp Closure Added AM/PM Turn Movements

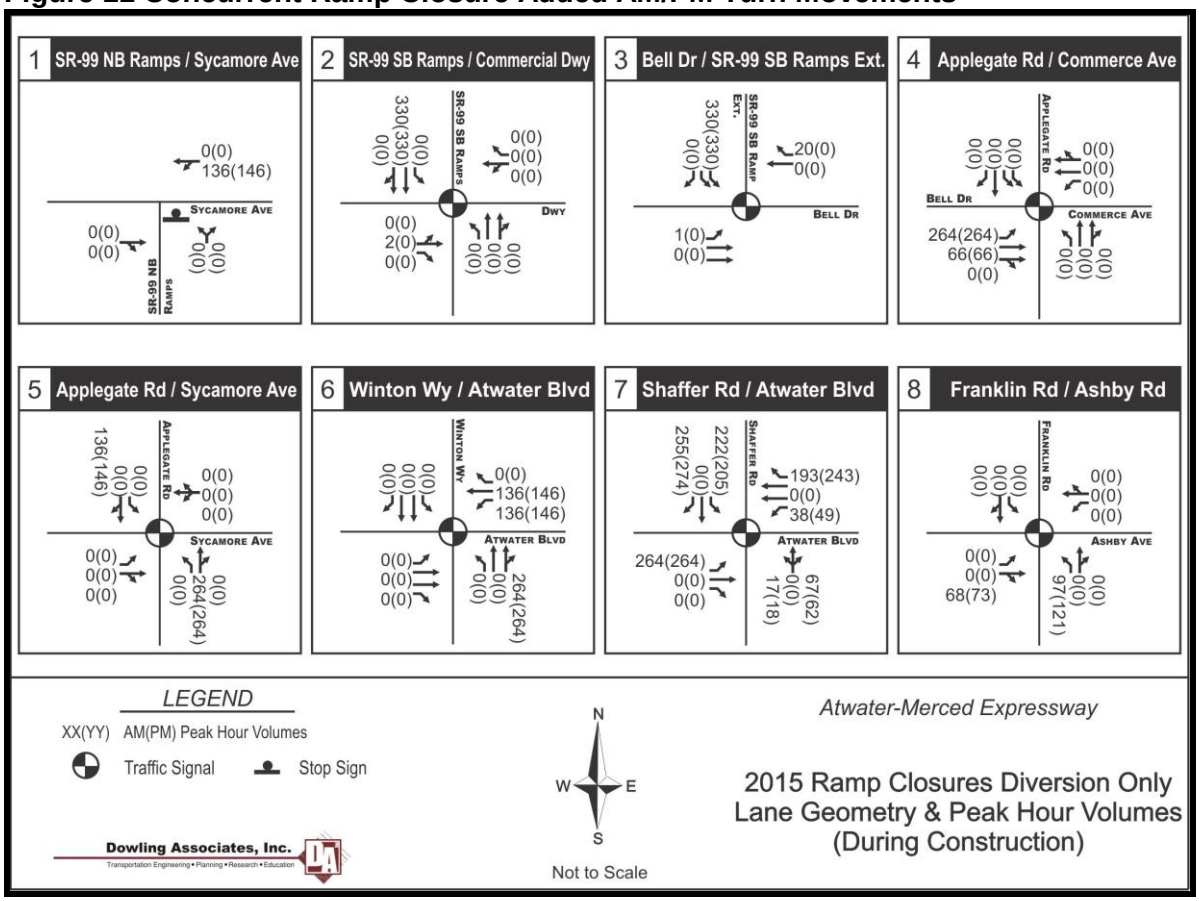


Figure 12 Buhach Concurrent Ramp Closure 2015 AM/PM Turn Movements

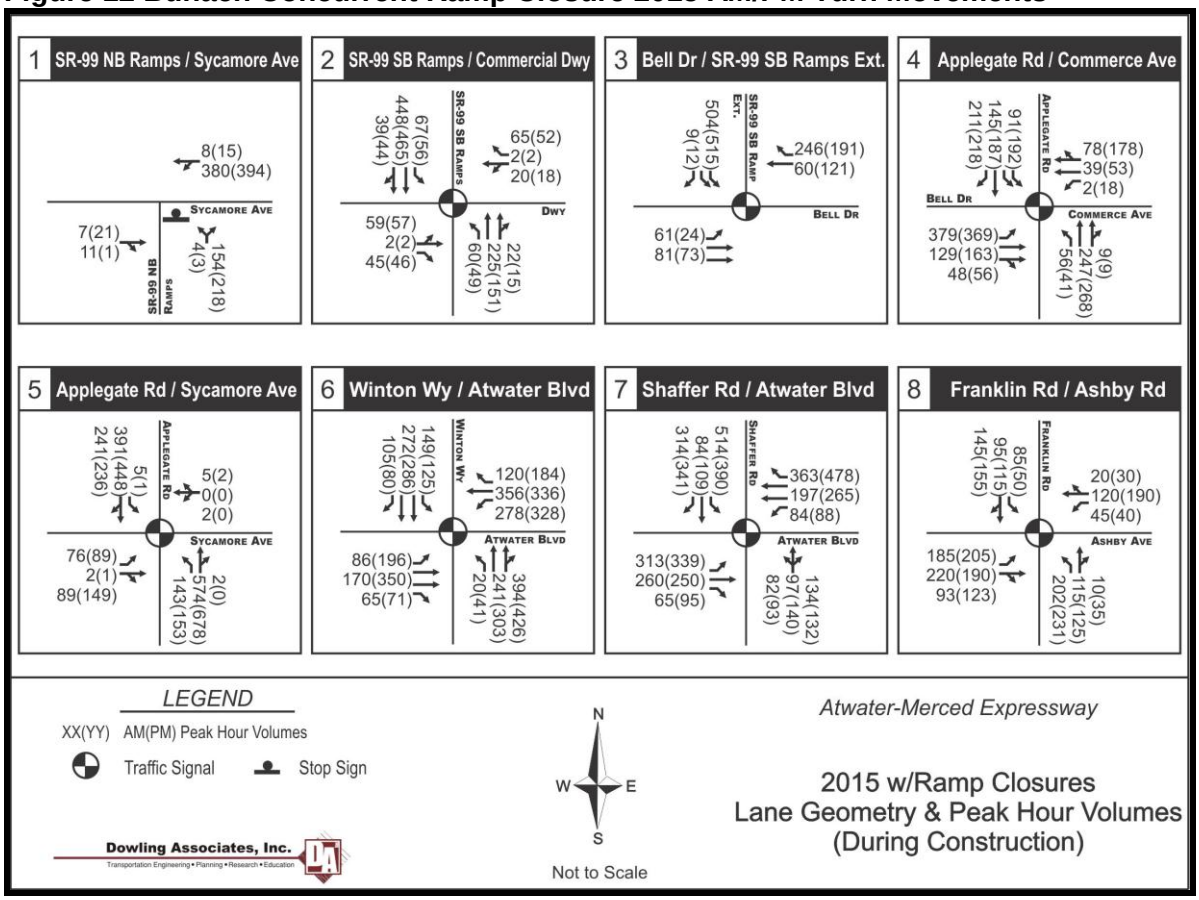


Table 6 Buhach Concurrent Ramp Closure 2015 AM/PM Peak Hour LOS Results

Int ID	Location	AM Peak Hour Delay(sec)	AM Peak Hour LOS	PM Peak Hour Delay/LOS	PM Peak Hour LOS
1	SR-99 NB Ramps / Sycamore Ave	9.6	A	9.8	A
2	SR-99 SB Ramps / Commercial Driveway	30.4	C	27.5	C
3	Bell Drive / SR-99 Ramps Extension	25.3	C	12.4	B
4	Applegate / Commerce Ave	29.1	C	31.4	C
5	Applegate Rd / Sycamore Ave	47.8	D	89.7	F
6	Winton Way / Atwater Blvd	34.9	C	41.2	D
7	Shaffer Rd / Atwater Blvd*	54.9	D	53.0	D
8	Franklin / Ashby	15.9	C	19.6	C

* Note that although more traffic was projected to divert to this intersection relative to the southbound only ramp closure scenario, average control delay slightly decreased. This is due to the diverted traffic being added primarily to non-conflicting turning movements – resulting is slightly less total average delay for the intersection as a whole.

Findings

Based on the operational analysis results, closure of the Buhach and SR-99 northbound on- and off-ramps will cause the least disruption to operations at adjacent ramps as a result of diversion relative to closure of the southbound ramps or concurrent closure. No study intersections are projected to operate at unacceptable levels under this ramp closure scenario. Closure of the Buhach and SR-99 southbound on- and off-ramps is projected to result in two intersections failing during the AM/PM peak hours. Concurrent closure of both the northbound and southbound ramps will collectively cause the greatest added average control delay to study area intersections. Concurrent closure will not however increase the number of intersections operating unacceptably relative to the southbound on- and off-ramp closure scenario.

These findings are described in more detail below.

2015 Buhach / SR-99 Northbound Ramp Closure Scenario

All study intersections are projected to operate at acceptable level of service (LOS "D" or better) during the AM/PM peak hours during closure of the Buhach / SR-99 northbound ramps.

2015 Buhach / SR-99 Southbound Ramp Closure Scenario

All study intersections are projected to operate at acceptable level of service (LOS "D" or better) during the AM/PM peak hours during closure of the Buhach / SR-99 southbound ramps with the exception of:

- Applegate Rd / Sycamore Ave (LOS E: PM Peak Hour)
- Shaffer Rd / Atwater Blvd (LOS E: AM Peak Hour)

To enable these intersections to operate acceptably, the following mitigation is suggested:

Applegate Rd / Sycamore Ave: During the construction phase it is recommended that City of Atwater staff observe operations at this intersection to consider the need to revise the intersection phasing/timing plan to provide protected northbound and southbound left turn movements (if feasible based on existing ROW). Analysis of this phasing change shows the intersection to operate at LOS C (16.2 seconds of average control delay).

Shaffer Rd / Atwater Blvd: This intersection fails due to heavy diversion caused by the southbound ramp closure at Buhach. This results in approximately 200 additional southbound left turn movements at the intersection during the AM and PM peak hours respectively. To mitigate – allow if possible, the Buhach southbound on-ramp to remain open during the construction of the AME / SR-99 interchange. If this is not possible, additional southbound left turn capacity (i.e., duel left turns) will mitigate.

The 2015 SYNCRHO-7 LOS mitigated worksheets are provided as an attachment to this memorandum.

2015 Buhach / SR-99 Concurrent Ramp Closure Scenario

All study intersections are projected to operate at acceptable level of service (LOS "D" or better) during the AM/PM peak hours during the concurrent closure of the Buhach / SR-99 northbound and southbound ramps with the exception of:

- Applegate Rd / Sycamore Ave (LOS F: PM Peak Hour)
- Shaffer Rd / Atwater Blvd (LOS D: AM Peak Hour) [1]

[1] This intersection is shown to operate with a delay of 54.9 seconds – the cusp of LOS D and E. Given that one tenth of second separates this delay result from LOS E it is being identified as an impacted location.

To enable these intersections to operate acceptably, the following mitigation is suggested:

Applegate Rd / Sycamore Ave: During the construction phase it is recommended that City of Atwater staff observe operations at this intersection to consider the need to revise the intersection phasing/timing plan to provide protected northbound and southbound left turn movements (if feasible based on existing ROW). Analysis of this phasing change shows the intersection to operate at LOS C (20.5 seconds of average control delay).

Shaffer Rd / Atwater Blvd: This intersection fails due to heavy diversion caused by the southbound ramp closure at Buhach. This results in approximately 200 additional southbound left turn movements at the intersection during the AM and PM peak hours respectively. To mitigate – allow, if possible, the Buhach southbound on-ramp to remain open during the construction of the AME / SR-99 interchange. If this is not possible, additional southbound left turn capacity (i.e., duel left turns) will mitigate.

The 2015 SYNCRHO-7 LOS mitigated worksheets are provided as an attachment to this memorandum.

Construction Phasing Recommendations

The following construction phasing recommendations should be considered.

Recommendation 1:

If possible, avoid concurrent closure of both northbound and southbound ramps at Buhach and SR-99 during construction of the AME / SR-99 interchange.

If possible, avoid closing the southbound on-ramp at Buhach during construction of the AME / SR-99 interchange.

Recommendation 2:

During construction, provide adequate signage along SR-99 and within the City of Atwater for the rerouting of diverted traffic consistent with the redistribution illustrated in **Figure 2** through **Figure 4** during closure of the Buhach Rd / SR-99 ramps.

Recommendation 3:

During the construction phase it is recommended that City of Atwater staff observe operations at the Applegate Rd / Sycamore Ave intersection to consider the need to revise the intersection phasing/timing plan to provide protected northbound and southbound left turn movements (if feasible based on existing ROW). Analysis of this phasing change shows the intersection to operate at LOS C.

Additional Considerations:

This analysis did not consider the potential for additional delays and queuing that can occur at the UPRR at-grade rail crossing at Applegate Road or Shaffer Road.

The addition of diverted traffic onto Winton|Applegate Road will exacerbate delays during UPRR rail crossings that could create queue spill back issues at the intersections of Applegate Rd / Sycamore Avenue and Winton Rd / Atwater Blvd.

The addition of diverted traffic onto Shaffer Road will exacerbate delays during UPRR rail crossings that could create queue spill back issues at SP Avenue south of the UPRR rail crossing and Broadway north of the UPRR rail crossing.

This analysis did not consider safety. The highest number of collisions in the study area from 2005 to 2007 occurred at the Shaffer Rd/Atwater Blvd. intersection (a total of 25 crashes). The second highest number of collisions occurred at Winton Way/Atwater Blvd (a total of 19 crashes) (Source: Traffic Analysis for the SR-99 Applegate Interchange PSR (December 2, 2010). Adding additional diverted traffic to both these “hot spot” collision locations could exacerbate collisions.

ATTACHMENTS

SYNCHRO-7 WORKSHEETS

BASELINE
(BUHACH RAMPS OPEN)
AM PEAK HOUR

BASELINE
(BUHACH RAMPS OPEN)
PM PEAK HOUR

BUHACH NORTHBOUND RAMPS CLOSED
AM PEAK HOUR

BUHACH NORTHBOUND RAMPS CLOSED
PM PEAK HOUR

BUHACH SOUTHBOUND RAMPS CLOSED
AM PEAK HOUR

BUHACH SOUTHBOUND RAMPS CLOSED
PM PEAK HOUR

BUHACH CONCURRENT RAMPS CLOSED
AM PEAK HOUR

BUHACH CONCURRENT RAMPS CLOSED
PM PEAK HOUR

RAMP CLOSURE MITIGATION

APPENDIX C

Phase 1A-Reduced Utility Relocation, Biological Resources Analysis

REVISED BIOLOGICAL RESOURCE ANALYSIS
ATWATER-MERCED EXPRESSWAY
UTILITIES RELOCATION FOR THE
PHASE 1A-REDUCED PROJECT
MERCED COUNTY, CALIFORNIA

March 15, 2012

Prepared for
Merced County Association of Governments
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Attention: Mr. Jesse Brown

Prepared by

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FIGURES

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Figure 1. Regional Map of the Atwater-Merced Expressway Utility Relocation Project.

Figure 2. Locational Map of the Atwater-Merced Expressway Utility Relocation Project.

Figure 3. Aerial photograph of the Atwater-Merced Expressway Utility Relocation Project.

Figure 4. Closest Known Records for Special-Status Species Within 5-Miles of the Atwater-Merced Expressway Utility Relocation Project.

TABLES

(Behind Tab at Back of Report)

Table 1. Plants Observed in the Atwater-Merced Expressway Utility Relocation Project Area in 2012.

Table 2. Wildlife Observed in the Atwater-Merced Expressway Utility Relocation Project Area in 2012.

Table 3. Special-Status Plant Species Known to Occur Within the Vicinity of the Atwater-Merced Expressway Utility Relocation Project Area.

Table 4. Special-Status Wildlife Species Known to Occur Within the Vicinity of the Atwater-Merced Expressway Utility Relocation Project Area.

1. EXECUTIVE SUMMARY

Due to the design of the Atwater-Merced Expressway Phase 1A-Reduced Project, an existing PG&E gas pipeline, as well as an existing AT&T fiber optic line will need to be relocated. The PG&E gas pipeline will be relocated to an area adjacent to Southern Pacific Avenue, south of State Route 99 (Figure 3), while the AT&T fiber optic line will be relocated into urban areas and agricultural fields north of State Route 99. Other than the Horizontal Directional Drilling (HDD) under Canal Creek, the AT&T fiber optic relocation area occurs in an area previously assessed for biological impacts in the Atwater-Merced Expressway Phase 1A-Reduced Environmental Impact Report (EIR). However, the PG&E relocation area was not evaluated under the Atwater-Merced Expressway Phase 1A-Reduced EIR. Thus, this Biological Resources Analysis was prepared to determine if any biological resources would be potentially impacted as a result of the entire PG&E gas pipeline relocation project or the AT&T fiber optic line HDD passage under Canal Creek.

The proposed utility alignments would be located within and along agricultural lands and paved road right-of-ways. Thus, no special-status plant species are expected to occur along the proposed utility alignments. Also, each proposed utility alignment will cross Canal Creek, a "water of the U.S." However, since both crossings will be routed underneath Canal Creek by means of HDD, potential impacts to Canal Creek will be avoided.

Five special-status wildlife species were identified as potentially occurring in the vicinity of the proposed utility alignments, including San Joaquin kit fox, Swainson's hawk, western burrowing owl, tricolored blackbird, and western pond turtle. All five species and associated potential impacts were also identified in the Atwater-Merced Expressway (AME) Phase 1A-Reduced EIR. The mitigation measures for these species included in the AME EIR are identical to those discussed in this Biological Resources Assessment (BRA). They are presented in Section 10 of this BRA. No further impacts to biological resources are expected from the PG&E and AT&T utility relocation projects.

2. INTRODUCTION

Monk & Associates, Inc. (M&A) has prepared this biological resource analysis for the proposed Atwater-Merced Expressway Phase 1A-Reduced Utility Relocation Project (herein referred to as the "project") located in Merced County, California (Figure 1). The purpose of this analysis is to provide a description of existing biological resources in the project area and to identify potentially significant impacts that could occur to sensitive biological resources from the proposed relocation of existing nearby utilities.

Biological resources include common plant and animal species, and special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), National Marine Fisheries Service (NMFS), and other resource organizations including the California Native Plant Society (CNPS). Biological resources also include waters of the United States and State, as regulated by the U.S. Army Corps of Engineers (Corps), California Regional Water Quality Control Board (RWQCB), and CDFG.

This biological resources analysis also provides mitigation measures for potentially significant and significant adverse impacts, if any, which could occur to biological resources from the proposed project. When implemented, the mitigation measures would, to the most practical extent, reduce impacts to levels considered less than significant pursuant to the California Environmental Quality Act (CEQA). Accordingly, this report is suitable for review and inclusion in any review being conducted by Merced County Association of Governments (lead agency) for the proposed project pursuant to CEQA.

The proposed project involves the relocation of an existing PG&E gas pipeline and an AT&T fiber optic line to new alignments. The proposed alignments for the relocation of these utilities are shown in Figure 3. With the exception of horizontal direction drilling (HDD) under Canal Creek (Figure 3), the proposed alignment for the AT&T fiber optic line relocation is within the project area evaluated under the Environmental Impact Report (EIR) for the Atwater-Merced Expressway (AME) Phase 1A-Reduced Project. However, the proposed alignment for the relocation of the PG&E gas pipeline does *not* fall within the previously examined AME Phase 1A-Reduced EIR project area. It, along with the Horizontal Directional Drilling under Canal Creek for the AT&T fiber optic line relocation, are the main subjects of this Biological Resources Assessment.

3. PROJECT LOCATION

3.1 PG&E Pipeline

The proposed PG&E natural gas pipeline relocation project is located near the southeastern limits of the City of Atwater; the pipeline will be relocated to an area immediately south of Southern Pacific Avenue (Figure 3). The western terminus of the project is approximately 200 feet west of North Buhach Road, while the eastern terminus is approximately 0.8 miles to the east. The proposed project is bordered to the north by Southern Pacific Avenue, with a railroad track right-of-way and State Highway 99 occurring just north of Southern Pacific Avenue. Agricultural lands border the project area to the south. Single-family homes occur to the west, while additional agricultural lands occur to the east.

3.2 AT&T Fiber Optic Line

The proposed AT&T fiber optic line relocation project is located near the southeastern limits of the City of Atwater; the fiber optic line will be relocated to an area north of State Route 99 (Figure 3). The western terminus of the project is along North Buhach Road, while the eastern terminus is at Valley Drive and Ashby Road. The vast majority of the proposed AT&T fiber optic line relocation site is located within agricultural lands that are proposed for new roadway construction associated with Atwater-Merced Expressway Phase 1A-Reduced Project; however, the eastern 200 feet and western 500 feet of the AT&T fiber optic line relocation project area occur in existing developed areas that consist entirely of paved roadways and single-family homes.

4. ANALYSIS METHODS

4.1 Background Research

Prior to preparing this biological resources analysis, Monk & Associates researched the most recent version of the CDFG's *Natural Diversity Database, RareFind 3.1 application* (CNDDB 2012) for historic and recent records of special-status plant and animal species (that is, threatened, endangered, rare) known to occur in the vicinity of the project area. Monk & Associates also searched the most current electronic version of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants of California* (CNPS 2001) for records of rare plants known in the vicinity of the project area. All special-status species records were compiled into tables.

4.2 Site Reconnaissance and Habitat Mapping

M&A biologists Ms. Hope Kingma and Mr. Brian Spirou conducted a general survey of the PG&E utility relocation area on January 13, 2012 to evaluate biological resources and to assess the likelihood of agency regulated areas. The AT&T fiber optic relocation area, other than the Canal Creek HDD crossing, was previously evaluated as part of the 2009 EIR project area.

The survey involved surveying all habitats within the project area and recording plant and wildlife species observed. In addition, M&A completed a preliminary land use and natural communities/ habitat types mapping of the proposed project site. The purpose of this mapping effort was to identify the land use and assign habitat categories to all the properties found within the project area in order to determine the extent of habitats that could be occupied by special-status plants and wildlife species, and the potential presence of waters of the United States, which includes wetlands, within the project area.

5. RESULTS OF RESEARCH AND PROJECT AREA ANALYSES

The results of M&A's background research combined with the field survey are provided in the sections below.

5.1 Plant Communities and Associated Wildlife Habitats

A complete list of plant species observed in the project area is presented in Table 1. Nomenclature used for plant names follows *The Jepson Manual* (Baldwin et al 2012) and changes made to this manual as published on the Jepson Interchange Project website. Table 2 is a list of wildlife species observed within the project area.

The project area is almost entirely devoted to agricultural production. Only three other land-cover types occur within the proposed project area: ruderal grassland, Canal Creek, and barren soil associated with a water storage facility and a Kinder-Morgan natural gas well station. Thus, the only plant communities found within the project area are agrestal (cropland), creek, and ruderal (weedy). It should be noted that while Canal Creek does intersect the project area, no impacts are proposed by the project. . Horizontal directional drilling (HDD) will be implemented to route the utility lines *under* Canal Creek. Lastly, since the majority of habitats within the project area are highly manipulated and disturbed, they provide habitat value only to common

wildlife species that are adapted to living in association with man. Habitats found within the project area are described below.

5.1.1 AGRESTAL (CROPLANDS)

The existing vegetation over most of the project area is classified as agrestal (Holland & Keil 1995) and is the result of long-term ground manipulation and cultivation. Plants introduced by man, generally for agricultural commodity crops, dominate these communities. The cultivation of agricultural fields continually disturbs the soil. As a result these areas typically do not support native plant species or communities.

At the time of the 2012 plant surveys, the primary crops grown within the project area were those that are typically harvested for hay crops, including oats and alfalfa. Hay crops are often rotated into corn during the summer months, thus these fields require regular ground disturbance for both cultivation (disking activities) and harvesting practices. Permanent crop fields within the project area include strawberries and other row crops.

In general, agrestal areas do not provide habitat for many wildlife species. Most farms are "clean farmed" meaning that no naturalized habitats remain outside of intended crop species. The intense cultivation and manipulation of the soil, including the application of pesticide, herbicide, and fertilizer tend to limit the number of species that occupy or use cropland habitats. Nevertheless, hay fields can provide habitat for a number of resident species, particularly small mammal populations, including California meadow vole (*Microtus californicus*), western harvest mice (*Reithrodontomys megalotis*), deer mice (*Peromyscus maniculatus*), and California ground squirrels (*Spermophilus beechyi*). These rodents in turn serve as prey for various raptors, including red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), northern harriers (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), and red-shouldered hawk (*Buteo lineatus*), all of which have been observed in the vicinity of the project area.

Migratory bird species also use agrestal communities, particularly in the winter months after crops are harvested. Waterfowl and shorebirds often alight in agricultural fields in the winter months en route to and from nesting grounds. Other birds such as the long-billed curlew (*Numenius americanus*) and the white-faced ibis (*Plegadis chihi*) also take advantage of cut over hay fields to forage for invertebrates in these fields while migrating through the area.

5.1.2 RUDERAL

Ruderal habitat consists of plant species adapted to continuous disturbance (Holland and Keil 1995) and many of the plant species are non-native species. Within the project area this habitat occurs along roads and in areas adjacent to cultivated fields. It also occurs along maintained levees and the top-of-banks of Canal Creek. Common ruderal species include milk thistle (*Silybum marianum*), yellow star-thistle (*Centaurea solstitialis*), Russian thistle (*Salsola tragus*), filarees (*Erodium cicutarium*), sunflower (*Helianthus annuus*), dove weed (*Croton setigerus*), black mustard (*Brassica nigra*), horseweed (*Erigeron canadensis*), white pigweed (*Chenopodium album*), common knotweed (*Polygonum aviculare*), bull thistle (*Cirsium vulgare*), field mustard (*Brassica rapa*), wild radish (*Raphanus sativus*), and charlock (*Sinapis*

arvensis), wild oat (*Avena fatua*) and foxtail barley (*Hordeum murinum* ssp. *leporinum*). Several gourd crop species, including watermelon *(Citrullus colocynthis* var. *lanatus*) and calabazilla (*Cucurbita foetidissima*) have naturalized in the project area and are found in fallow fields and along roadsides.

In an agricultural setting, ruderal habitats are often physically removed or sprayed with herbicides that kill undesirable plant growth. This severely limits or discourages use of these habitats by wildlife. Where ruderal habitats are left undisturbed, they can provide a varied food source for rodents and birds. Typical mammals include Botta's pocket gopher, California meadow vole, and California ground squirrel. The ruderal habitat along levees and the compacted surface of the roads provides basking sites for western fence lizard (*Sceloporus occidentalis*) and other reptile species. Black-tailed hare (*Lepus californicus*) and Audubon's cottontail (*Sylvilagus audubonii*) also feed and shelter in isolated pockets of ruderal habitat. Western meadowlark (*Sturnella neglecta*) commonly occurs in open areas around the fields.

5.1.3 CANAL CREEK

Freshwater marsh (Holland and Keil 1995) is an herbaceous community consisting of species commonly found along irrigation canals. This vegetation consists of large patches of broad-leaved cattail (*Typha latifolia*), giant reed (*Arundo donax*), hard-stem tule (*Schoenoplectus acutus occidentalis*), tall flatsedge (*Cyperus eragrostis*), water primrose (*Ludwigia* spp.), and common rush (*Juncus effusus effusus*). Although this vegetation performs a valuable function in natural wetlands (for example, filtering the water, providing wildlife with food and cover), it restricts the flow of water through the canals; hence, the growth of this vegetation is frequently controlled (i.e., mechanical and/or chemical removal). The upper banks of the creek support California button willow (*Cephalanthus occidentalis* var. *californicus*), willows (*Salix* spp.), blackberry (*Rubus* spp.), mule fat (*Baccharis salicifolius*), California mugwort (*Artemisia douglasiana*), hoary nettle (*Urtica dioica* ssp. *holosericea*), Johnsongrass (*Sorghum halepense*), common velvet grass (*Holcus lanatus*), yellow bristle grass (*Setaria pumila*) and swamp grass (*Crypsis schoenoides*).

Bird species, including mallard, great blue heron (*Ardea herodias*), great egret (*Ardea alba*), belted kingfisher (*Ceryle alcyon*), black phoebe (*Sayornis nigricans*), barn swallows (*Hirundo rustica*), northern rough-winged swallows (*Stelgidopteryx serripennis*), and cliff swallows (*Petrochelidon pyrrhonota*) are known to forage along Canal Creek. Blackberry patches and hard-stem tule along the banks of the canals provide suitable nesting habitat for red-winged blackbird (*Agelaius phoeniceus*), marsh wren (*Cistothorus palustris*), and a host of other local breeders. Other wildlife species such as western aquatic garter snakes (*Thamnophis couchii*), bullfrog, mosquito fish (*Gambusia affinis*), and other game and non-game fish species may also occur in Canal Creek.

6. SPECIAL-STATUS SPECIES

Table 3 is a list of special-status plant species, while Table 4 is a list of special-status wildlife species known to occur in the region of the Atwater-Merced Expressway Phase 1A-Reduced Utility Relocation Project area. Figure 4 provides a graphical illustration of the closest known

records for special-status species within 5 miles of the Atwater-Merced Expressway Phase 1A-Reduced Utility Relocation project area and helps readers visually understand the number of sensitive species that are known to occur in the vicinity of the project area.

6.1 Definitions

For purposes of this analysis, special-status species are plants and animals that are legally protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community (for example, the CNPS). Special-status species are defined as:

- plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq*.; 14 CCR §670.1 *et seq.*) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);

- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);

- plants and animals that meet the definition of endangered, rare, or threatened under the California Environmental Quality Act (CEQA) (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;

- Plants occurring on Lists 1A, 1B, 2, 3, and 4 of CNPS' *Electronic Inventory* (CNPS 2001). The California Department of Fish and Game (CDFG) recognizes that Lists 1A, 1B, and 2 of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and CDFG requests their inclusion in EIRs. Plants occurring on CNPS Lists 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2012). Such plants may be included as special-status species on a case by case basis due to local significance or recent biological information;

- migratory nongame birds of management concern listed by U.S. Fish and Wildlife Service (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);

- animals that are designated as "species of special concern" by CDFG (2007);

- Animal species that are "fully protected" in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

In the paragraphs below we provide further definitions of legal status as they pertain to the special-status species discussed in this report or in the attached tables.

Federal Endangered or Threatened Species. A species listed as Endangered or Threatened under the FESA is protected from unauthorized "take" (that is, harass, harm, pursue, hunt, shoot, trap) of that species. If it is necessary to take a Federal listed Endangered or Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the USFWS prior to initiating the take.

State Threatened Species. A species listed as Threatened under the state Endangered Species Act (§2050 of California Fish and Game Code) is protected from unauthorized "take" (that is, harass, pursue, hunt, shoot, trap) of that species. If it is necessary to "take" a state listed Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from CDFG prior to initiating the "take."

California Species of Special Concern. These are species in which their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation affords no legally mandated protection; however, pursuant to the CEQA Guidelines (14 CCR §15380), some species of special concern could be considered "rare." Pursuant to its rarity status, any unmitigated impacts to rare species could be considered a "significant effect on the environment" (§15382). Thus, species of special concern must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

CNPS List Species. The California Native Plant Society (CNPS) maintains an inventory of special status plant species. This inventory has four lists of plants with varying rarity. These lists are: List 1, List 2, List 3, and List 4. Although plants on these lists have no formal legal protection (unless they are also state or federal listed species), the California Department of Fish and Game requests the inclusion of List 1 species in environmental documents. In addition, other state and local agencies may request the inclusion of species on other lists as well. List 1 species have the highest priority: List 1A species are thought to be extinct, and List 1B species are known to still exist but are considered "rare, threatened, and endangered in California and elsewhere." All of the plants constituting List 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the CDFG Code, and are eligible for state listing (CNPS 2001). List 2 species are rare in California, but more common elsewhere. Lists 3 and 4 contain species about which there is some concern, and are review and watch lists, respectively. Additionally, in 2006 CNPS updated their lists to include "threat code extensions" for each list. For example, List 1B species would now be categorized as List 1B.1, List 1B.2, or List 1B.3. These threat codes are defined as follows: .1 is considered "seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)"; .2 is "fairly endangered in California (20-80% of occurrences threatened)"; .3 is "not very endangered in California (less than 20% of occurrences threatened or no current threats known)."

Under the CEQA review process only CNPS List 1 and 2 species are considered since these are the only CNPS species that meet CEQA's definition of "rare" or "endangered." Impacts to List 3 and 4 species are not regarded as significant pursuant to CEQA.

Fully Protected Birds. Fully protected birds, such as the white-tailed kite and golden eagle, are protected under California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time.

Protected Amphibians. Under Title 14 of the California Code of Regulations (14 CCR 41), protected amphibians, such as the California tiger salamander, may only be taken under special permit from California Department of Fish and Game issued pursuant to Sections 650 and 670.7 of these regulations.

6.2 Potential Special-Status Plants in the Project Area

After searching CDFG's Natural Diversity Database (CNDDB 2012) for special-status plant records within five miles of the project area and the CNPS Inventory for a list of special-status plant species known to occur in the vicinity of the utility relocation project, M&A compiled a list of 28 special-status plant species that have potential to occur in the vicinity of the project area. Table 3 discusses each special-status plant considered for this project area individually and takes into consideration their habitat requirements. Of the 28 plants listed in Table 3, none are expected to occur within the project area since the project area consists entirely of highly disturbed agricultural lands, barren utility stations, and ruderal grassland. Again, Canal Creek will be avoided by the implementation of HDD. Thus, plants occurring in Canal Creek will not be impacted. Similarly, no special-status plant species are expected to occur in the project area, and none are further considered here.

M&A conducted a thorough survey of the project area on January 13, 2012 in order to document plant communities, note site conditions, and survey for special-status plants. Table 1 lists all plants observed within the project area during this survey. Due to the highly disturbed nature of the project area, a large number of non-native species were observed during the surveys. Overall, a total of 20 plant species were observed in the project area. Of these 20 species, 4 plants (20 percent) were native, and 16 plants (80 percent) were non-native.

6.3 Potential Special-Status Wildlife Species in the Project Area

The CNDDB has records of several special-status wildlife species located within or near the project area, and a total of nine (9) special-status wildlife species are known to occur in the vicinity of the project area (Table 4). Five (5) of these special-status wildlife species have potential to occur within the project area. These species are identified in Table 4 and are discussed in text below. All other special-status wildlife species known from the region that are not expected to occur within the project area are addressed in Table 4, but are not further discussed in this report. These species are dismissed from further consideration owing to the complete absence of suitable habitat that could support these species in the project area. An example of such a species would be vernal pool fairy shrimp (*Branchinecta lynchi*), which is a federally listed species that only occurs in vernal pools, which are not within the project area. The five special-status wildlife species that have potential to occur within the project area are further discussed below.

6.3.1 SWAINSON'S HAWK

The Swainson's hawk (*Buteo swainsonii*) is a state listed threatened species pursuant to the California Endangered Species Act (CESA), Title 14, California Code of Regulations. While it has no special federal status, it is protected from direct take under the Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). Swainson's hawks, their nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, §3513, and §3800).

Swainson's hawk inhabits open to semi-open areas at low to middle elevations in valleys, dry meadows, foothills, and level uplands (Kochert 1986). It nests almost exclusively in trees, and in 2005, the CDFG reported that most nest trees were between 48 and 58 feet tall, with most nests ranging between 39 and 48 feet above the ground (Anderson et al 2005). Nests are constructed in isolated trees that are dead or alive along drainages and in wetlands, or in windbreaks in fields and around farmsteads (Palmer 1988). Swainson's hawks occasionally nest in shrubs, on telephone poles, and on the ground. In the Central Valley of California, the majority of Swainson's hawk nests and territories are associated with riparian systems. Nests are most commonly found in valley oaks (*Quercus lobata*), but cottonwood (*Populus fremontii*) and willow (*Salix* sp.) are also used frequently. (Anderson et al 2005). Other species such as eucalyptus (*Eucalyptus* sp.), black walnut (*Juglans hindsii*), black locust (*Robinia pseudoacacia*), almond (*Prunus* sp.), Osage orange (*Maclura pomifera*), Arizona cypress (*Cupressus arizonica*) and pine (*Pinus* spp.) are also known to be used (CNDDB records).

Foraging habitats include alfalfa fields, fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture, and rice land when not flooded (CDFG 1994). The Swainson's hawk generally forages in open habitats with short vegetation containing small mammals, reptiles, birds, and insects. Its primary prey in the Central Valley is California meadow vole (*Microtus californicus*). Agricultural areas are often preferred over more natural grassland habitats due to larger prey populations. In addition agricultural practices (planting, maintenance, harvesting, disking) allow for access to prey, and very likely increase foraging success of Swainson's hawks by flushing prey (personal communication between J. Estep and G. Monk 2002). During the nesting season Swainson's hawks usually forage within two miles of the nest. Swainson's hawk does not require habitats that contain many perches because it most often searches for prey aerially, therefore it can occupy habitats with few or no perches except the nest tree (James 1992).

In California, the nesting population of Swainson's hawks was thought to be declining greatly primarily due to habitat loss. While loss of habitat continues to be a conservation concern for Swainson's hawks, a population inventory conducted by the CDFG in 2005 revealed that there are more than 1800 breeding pairs in the Central Valley (a significant increase from the previous estimate of 550 breeding pairs in 1998) (Anderson et al 2005). Swainson's hawks are regular summer visitors and breeders throughout the western states. In the fall months, some Swainson's hawks migrate to Argentina before returning to the United States to breed in the late-spring (typically April). There are also small populations of Swainson's hawks that remain resident in California year-round.

Based on the California Department of Fish and Game's (CDFG) Natural Diversity Database, RareFind 3.1 application (CNDDB), the closest Swainson's hawk record to the project site is CNDDB Occurrence No. 1760, which is 0.7 miles east of the project site. This CNDDB record was of a nesting pair of Swainson's hawks in a mature stand of eucalyptus trees. Consequently, a preconstruction nesting survey will be conducted prior to the commencement of construction. Surveys will be conducted following the CDFG 2000 guidelines: *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (see Impacts and Mitigation Measures section below). **If Swainson's hawks are identified nesting within the project area or immediately adjacent to the project area, mitigation as prescribed below shall be implemented.**

6.3.2 WESTERN BURROWING OWL

Western burrowing owl (*Athene cunicularia hypugaea*) is a California species of special concern. Its nest, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, and §3800). The burrowing owl is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13).

Burrowing owl habitat can be found in annual and perennial grasslands, characterized by low-growing vegetation. Typically, the burrowing owl utilizes rodent burrows, usually ground squirrel burrows, for nesting and cover. They may also on occasion dig their own burrows, or use man-made objects such as concrete culverts or riprap piles for cover. They exhibit high site fidelity, reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of a pair of burrowing owls during the spring and summer months or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (white wash) at or near a burrow. Burrowing owls typically are not observed in grasslands with tall vegetation or wooded areas because the vegetation obscures their ability to detect avian and terrestrial predators. Since burrowing owls spend the majority of their time sitting at the mouths of their burrows, grazed grasslands seem to be their preferred habitat because it allows them an unobstructed 360 degree view of their environment.

The nearest reported occurrence of burrowing owl is approximately 0.5-mile north of the project area (CNDDB Occurrence No. 877). Since this owl and ground squirrels are known from the area, and thus could move into the project area in the future, the applicant should conduct nesting surveys in the spring of the year prior to construction. If the burrowing owl is not identified during the spring nesting surveys, preconstruction surveys would still be necessary 30 days prior to earth-moving activities to avoid impacting any owls that may have moved into the project area. Spring nesting surveys for burrowing owls should be conducted in accordance with the survey requirements detailed in the CDFG's October 17, 1995 *Staff Report on Burrowing Owl Mitigation* (see Impacts and Mitigation Measures described below). **If burrowing owls are identified nesting within the project area, mitigation as prescribed in "Impacts and Mitigation Measures" section below should be implemented. Impacts to burrowing owls from the proposed project would be regarded as potentially significant.**

6.3.3 TRICOLORED BLACKBIRD

Tricolored blackbird (*Agelaius tricolor*) is a state "species of special concern." Active nests, eggs, and young are also protected pursuant to Fish and Game Code §3503. A gregarious species, the

tricolored blackbird is typically found near freshwater, particularly near marsh habitat. Nesting colonies are typically found in stands of cattail and bulrush (*Scirpus* spp.), although they are also known to utilize blackberry (*Rubus* sp.) patches and thistle clumps (*Cirsium* spp. and *Cynara* spp.) adjacent to water. Flooded lands, margins of ponds, and grassy fields in summer and winter provide typical foraging habitat for this species.

The closest record for this species is located 1.5 miles south of the project area (CNDDB Occurrence No. 65). This species likely forages in the project area and marginal nesting habitat occurs in the cattails and bulrushes in Canal Creek. Therefore, a preconstruction survey should be conducted. This survey should be conducted no more than two weeks (14 days) prior to ground disturbance. If nesting tricolored blackbirds are found within the project area, a buffer will be established until the young have fledged. The buffer distance would have to be established by a qualified ornithologist based on the nesting location and degree of disturbance in the area (see Impacts and Mitigation Measures described below). **Impacts to nesting tricolored blackbirds from the proposed project would be regarded as potentially significant.**

6.3.4 WESTERN POND TURTLE

The western pond turtle (*Actinemys marmorata*) (formerly known as Pacific pond turtle) is a state "species of special concern." It has no federal status. The western pond turtle is a habitat generalist, inhabiting a wide range of fresh and brackish, permanent and intermittent water bodies from sea level to about 4,500 feet above sea level (USFWS 1992). Typically, this species is found in ponds, marshes, ditches, streams, and rivers that have rocky or muddy bottoms. This turtle is most often found in aquatic environments with plant communities dominated by watercress, cattail, and other aquatic vegetation. It is a truly aquatic turtle that usually only leaves the aquatic site to reproduce and to overwinter. Recent field work has demonstrated that Pacific pond turtles may overwinter on land or in water, or may remain active in water during the winter season; this pattern may vary considerably with latitude, water temperature, and habitat type and remains poorly understood (Jennings and Hayes 1994).

The pond turtle also requires upland areas for burrowing habitat where it digs nests and buries its eggs. These nests can extend from 52 feet to 1,219 feet from watercourses (Jennings and Hayes 1992), however most pond turtles nest in uplands within 250 meters of water (Bury, unpublished). Upland nest sites are usually found in areas with sparse vegetation. Sunny, barren, and undisturbed (not disked) land provides optimal habitat, while shady riparian habitat and planted agricultural fields do not provide suitable habitat (op. cit.). Eggs are typically laid from March to August (Zeiner et. al. 1988), with most eggs being laid in May and June. Hatchlings will stay in the nest until the following April (Bury, unpublished). Predators of juvenile pond turtles include the non-native bullfrog (*Rana catesbeiana*) and Centrarchid fish (sunfish). This turtle is most visible between April and July when it can be observed basking in the sun. In areas where the water is very warm during these months, however, it will bask in the warm water and will be more difficult to observe. It eats plants, insects, worms, fish and carrion (Stebbins 2003).

The closest record for this species is located 2.3 miles north of the project area (CNDDB Occurrence No. 321). This species is known to occur in Canal Creek. Although Canal Creek will not be affected by the project due to HDD, a preconstruction survey should be conducted out of an

abundance of caution (see Impacts and Mitigation Measures described below). **Impacts to western pond turtle from the proposed project would be regarded as potentially significant.**

6.3.5 SAN JOAQUIN KIT FOX

The San Joaquin kit fox (*Vulpes macrotis mutica*) is a federally listed endangered species and a California listed threatened species. This species' distribution is primarily limited to the San Joaquin Valley and adjacent regions. Because of the endangered/threatened status of this fox species, all proposed projects within the current and/or historic range of the kit fox must address potential impacts to this species.

The San Joaquin kit fox is the smallest fox species in North America, typically weighing between four and six pounds. It has large ears, long legs, and is generally a buffy tan color with a black-tipped tail. Kit fox live primarily in the lowlands of the San Joaquin Valley of California, but are also known to occur in several counties in the coast mountain ranges including Santa Barbara, San Luis Obispo, Monterey, San Benito, Santa Clara, Contra Costa and Alameda Counties.

This fox species is usually found in open grassland and shrubland communities, but has also been observed in orchards that border grassland or shrub plant communities. Kit fox are carnivorous, usually feeding on small rodents such as San Joaquin pocket mice (*Perognathus inornatus*), deer mice, western harvest mice, kangaroo rats (*Dipodomys* spp.) and larger rodents such as California ground squirrel (*Spermophilus beechyi*). Kit fox also prey upon lagomorphs such as black-tailed hare and desert cottontail (*Sylvilagus audubonii*). It relies on dens for breeding, and to provide escape cover from potential predators. Kit fox are reputedly poor diggers, so dens are excavated in loose-textured soils, generally in areas with low to moderate relief, or they will utilize holes left by other species. They will utilize burrows dug by rabbits, ground squirrels, and on occasion, badgers (*Taxidea taxus*). Man-made structures, such as well casings, culverts, and abandoned pipelines, are also occasionally used for dens. Typically, dens are small enough to discourage easy predation by coyotes. Populations of kit fox are thought to be related to the availability of denning sites, particularly natal denning sites, which are often moved several times throughout the season.

There is only one known record of kit fox in the project vicinity (CNDDB Occurrence Number 23). This record was sited in 1999 along the Livingston Canal in Atwater, approximately 2.1 miles northwest of the project area.

While there are suitable kit fox habitats in the vicinity of the project area, these habitats are surrounded by highly manipulated land that, in most cases, is under agricultural practices. The network of canals within the project area provide a potential migration corridor between ruderal and grassland habitats in the area, and the irrigated pastures, horse pastures, and rotational crops such as hay or corn provide marginal foraging habitats. Permanent crops (such as strawberry fields) provide low quality habitats for this species of fox.

As previously agreed by USFWS, the "potential San Joaquin kit fox habitats" affected by the proposed project that would require mitigation compensation would only include those habitats determined to be "high" and "medium" quality habitats. No mitigation would be required for impacts to the "low" quality and unlikely habitats. **Consequently, the proposed project would be regarded as having a potentially significant adverse impact to kit fox habitat** (see Impacts and Mitigation Measures section below).

7. REGULATORY FRAMEWORK FOR NATIVE WILDLIFE, FISH, AND PLANTS

This section provides a discussion of those laws and regulations that are in place to protect native wildlife, fish, and plants. These laws would have a certain effect on any proposal to relocate utilities within the project area. Under each law we discuss its pertinence to the proposed utility relocation.

7.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) forms the basis for the federal protection of threatened or endangered plants, insects, fish and wildlife. FESA contains four main elements, they are as follows:

Section 4 (16 USCA §1533): Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.

Section 7 (§1536): Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.

Section 9 (§1538): Prohibition on Take: prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies.

Section 10: Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit through approval of a Habitat Conservation Plan.

In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS). The USFWS enforces all other cases. Below, Sections 9, 7, and 10 of FESA are discussed since they are the sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3). A December 2001 decision by the 9th Circuit Court of Appeals (Arizona Cattle Growers' Association, Jeff Menges, vs. the U.S. Fish and Wildlife Service and Bureau of Land Management, and the Southwest Center for Biological Diversity) ruled that the USFWS must show that a threatened or endangered species is present on a project site and that it would be taken by the project activities. According to this ruling, the USFWS can no longer require mitigation based on the probability that the species could use the site. Rather they must show that it is actually present.

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed species is necessary to complete an otherwise lawful activity, this triggers the need to obtain an incidental take permit either through a Section 7 Consultation as discussed further below (for federal actions or private actions that are permitted or funded by a federal agency), or requires preparation of a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA (for state and local agencies, or individuals, and projects without a federal "nexus").

Section 7(a)(2) of the Act requires that each federal agency consult with the USFWS to ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat for listed species. Critical habitat designations mean: (1) specific areas within a geographic region currently occupied by a listed species, on which are found those physical or biological features that are essential to the conservation of a listed species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a listed species that are determined essential for the conservation of the species.

The Section 7 consultation process applies only to actions taken by federal agencies, or actions by private parties that require federal agency permits, approval, or funding (for example, a private landowner applying to the Corps for a permit). Section 7's consultation process is triggered by a determination of the "action agency" — i.e., the federal agency that is carrying out, funding, or approving a project — that the project "may affect" a listed species or critical habitat. If an action is likely to adversely affect a listed species or designated critical habitat, formal consultation with the USFWS is required. As part of the formal consultation, the USFWS prepares a Biological Opinion assessing whether the proposed action is likely to result in jeopardy to a listed species or adversely modify designated critical habitat. If the USFWS finds "no jeopardy" or adverse modification, it provides an incidental take permit which allows for the taking of a limited number of listed species or critical habitat.

Federal actions include permitting, funding, and entitlements for both federal projects, as well as private projects facilitated by federal actions (for example, a private landowner applying to the Corps for a permit). As an example, if a federally listed endangered species is present in "waters of the United States" on a project site, prior to authorizing impacts to "waters of the United States," the U.S. Army Corps of Engineers (who administers the Clean Water Act) would be required to initiate "formal consultation" with USFWS pursuant to Section 7 of FESA. As part of the formal consultation, the USFWS would then be required to prepare a Biological Opinion based on a review and analysis of the project applicant's avoidance and mitigation plan. The Biological Opinion will either state that the project will or will not result in "take" or threaten the continued existence of the species (not just that population). If an endangered species could be harmed by a proposed project, USFWS has to be in complete concurrence with the proposed avoidance and mitigation plan. If USFWS is not in complete concurrence with the mitigation plan, they will submit a Biological Opinion to the Corps containing a "jeopardy decision" and state that a Corps' permit should not be issued for the pending project. The applicant would then

have an opportunity to submit a revised mitigation plan that provides greater protection for the species.

For non-federal entities, Section 10 provides the mechanism for obtaining take authorization. Under Section 10 of FESA, the applicant for an "incidental take permit" is required to submit a "conservation plan" to USFWS or NMFS that specifies, among other things, the impacts that are likely to result from the taking, and the measures the permit applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps. Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

7.1.1 RESPONSIBLE AGENCY

FESA gives regulatory authority over terrestrial species and non-anadromous fish to the USFWS. The NMFS has authority over marine mammals and anadromous fish.

7.1.2 APPLICABILITY TO THE PROPOSED PROJECT

There are no federally-listed fish species that could be affected by the proposed utility relocation project; hence, consultation with NMFS will not be required for this project. The project area does not provide suitable habitat for any federally-listed or otherwise special-status plant species, nor does it provide suitable habitat for giant garter snake or vernal pool fairy shrimp. Low and medium quality potential San Joaquin kit fox habitat is present in the project area, and potential impacts to the kit fox are discussed elsewhere herein.

It will be necessary to obtain a federal “Incidental Take” permit from the USFWS for this project. Since a U.S. Army Corps of Engineers permit will also be required for this project, pursuant to Section 7 of the Federal Endangered Species Act, the Corps will be required to consult with the USFWS since it has been determined that the proposed project “may effect” listed species. The USFWS could then issue a Biological Opinion (Incidental Take Permit) that addresses incidental take of species protected pursuant to the Federal Endangered Species Act. The Incidental Take permit would likely come with conditions, one of which may be that the applicant purchase mitigation credits at USFWS-approved mitigation bank(s) within the project region to offset the project’s impact to federally listed species and their habitats.

7.2 Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to “take” (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Executive Order 13186 for conservation of migratory birds (January 11, 2001) requires that any project with federal involvement address impacts of federal actions on migratory birds. The order is designed to assist federal agencies in their efforts to comply with the MBTA and does not constitute any legal authorization to take migratory birds. The order also requires federal agencies to work with the USFWS to develop a memorandum of understanding (MOU). Protocols developed under the MOU must promote the conservation of migratory bird populations through the following means:

- Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- Restore and enhance habitat of migratory birds, as practicable; and prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

7.2.1 Applicability to Proposed Project

Northern harrier and western burrowing owl could nest within the project area, while red-tailed hawk, red-shouldered hawk, Swainson's hawk, white-tailed kite could nest within the project vicinity. These raptors (birds of prey) would be protected by the Migratory Bird Treaty Act. Also, the tricolored blackbird, common songbirds and wading birds that could nest within the project area would be protected pursuant to this Act. As long as there is no direct mortality of species protected pursuant to this Act caused by the proposed utility relocation project, there should be no constraints to the project with respect to the Migratory Bird Treaty Act. To comply with the Migratory Bird Treaty Act, all active nests would have to be avoided and otherwise protected while birds are nesting. Upon completion of nesting, the utility relocation project could commence as otherwise planned, without further mitigation requirements, except for the Swainson's hawk and the western burrowing owl, which would require additional mitigation (see Mitigation Measures described below).

7.3 State Endangered Species Act

7.3.1 Section 2081 of the State Endangered Species Act

In 1984, the state legislated the California Endangered Species Act (CESA) (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would jeopardize threatened or endangered species if reasonable and prudent alternatives are available.

CESA requires that all state lead agencies (as defined under CEQA) conduct an endangered species consultation with CDFG if their actions could affect a state listed species. The state lead agency and/or project applicants must provide information to CDFG on the project and its likely impacts. CDFG must then prepare written findings on whether the proposed action would jeopardize a listed species would result in the direct take of a listed species. Because CESA does not have a provision for "harm" (see discussion of FESA, above), CDFG considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If CDFG determines that a proposed project could impact a State listed threatened or endangered species, CDFG will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be threatened or endangered species impacts, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental take" permits from CDFG and/or USFWS (if it is a Federal listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State listed species, an "incidental take" permit pursuant to §2081 of the Fish and Game Code would be necessary (versus a Federal incidental take permit for Federal listed species). CDFG will issue an incidental take permit only if:

1) The authorized take is incidental to an otherwise lawful activity;
2) The impacts of the authorized take are minimized and fully mitigated;
3) The measures required to minimize and fully mitigate the impacts of the authorized take:

    a) Are roughly proportional in extent to the impact of the taking on the species;
    b) Maintain the project applicant’s objectives to the greatest extent possible; and,
    c) Capable of successful implementation; and,

4) Adequate funding is provided to implement the required minimization and mitigation measures, and to monitor compliance with, and the effectiveness of, the measures.

If an applicant is preparing a habitat conservation plan (HCP) as part of the federal 10(a) permit process, the HCP might be incorporated into the §2081 permit if it meets the substantive criteria of §2081(b). To ensure that an HCP meets the mitigation and monitoring standards in Section 2081(b), an applicant should involve CDFG staff in development of the HCP. If a final Biological Opinion (federal action) has been issued for the project pursuant to Section 7 of the federal Endangered Species Act, it might also be incorporated into the §2081 permit if it meets the standards of §2081(b).

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of “take.” These species are listed in several statutes that identify “fully protected” species and “specified birds.” *See* Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a “fully protected” species or a “specified bird” occurs, an applicant must design the project to avoid all take.

In September 1997, Assembly Bill 21 (Fish and Game Code §2080.1) was passed. This bill allows an applicant who has obtained a “non-jeopardy*” federal Biological Opinion* pursuant to Section 7, or who has received a Federal 10(a) permit (Federal incidental take permit), to submit

the federal opinion or permit to CDFG for a determination as to whether the federal document is "consistent" with CESA. If after 30 days CDFG determines that the federal incidental take permit is consistent with state law, and that there are that all state listed species under consideration have been considered in the federal Biological Opinion, then no further permit or consultation is required under CESA for the project. However, if CDFG determines that the federal opinion or permit is not consistent with CESA, or that there are state listed species that were not considered in the federal Biological Opinion, then the applicant must apply for a state permit under section 2081(b).

The process provided in Fish and Game Code §2080.1 (Assembly Bill 21) may be of use when the incidental take would occur to species that are listed under both the federal and state endangered species acts. Assembly Bill 21 is of no use if an affected species is state-listed, but not federally listed.

State and federal incidental take permits are issued on a discretionary basis, and are typically only authorized if applicants are able to demonstrate that impacts to the listed species in question are unavoidable, and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review. Typically, if there would be impacts to a listed species, mitigation that includes habitat avoidance, preservation, and creation of endangered species habitat is necessary to demonstrate that projects would not threaten the continued existence of a species. In addition, management endowment fees are usually collected as part of the agreement for the incidental take permit(s). The endowment is used to manage any lands set-aside to protect listed species, and for biological mitigation monitoring of these lands over (typically) a five-year period.

7.3.2 Applicability to Proposed Project

State listed plant and wildlife species known from the project region are presented in Tables 3 and 4 (respectively). No state-listed plant species are expected to occur in the project area.

Swainson's hawk, a state threatened species, is known to nest 0.7 miles east of the project site. This CNDDB record was of a nesting pair of Swainson's hawks in a mature stand of eucalyptus trees. Consequently, a preconstruction nesting survey will be conducted prior to the commencement of construction. Surveys will be conducted following the CDFG 2000 guidelines: *Recommended Timing and Methodology for Swainson's hawk Nesting Surveys in California's Central Valley* (see Impacts and Mitigation Measures section below).

San Joaquin kit fox is a federal and state listed species. If the USFWS issues a federal Incidental Take Permit for the project, a State (2081 Agreement) Incidental Take Permit will not likely be required. Rather, Fish and Game Code §2080.1 allows CDFG to find that a FESA Incidental Take Permit is consistent with CESA and the State's interests in protecting this species. This "consistency determination" is a 30-day review process. At the end of the 30 days, CDFG will find the project is or is not consistent with CESA. If they find it is consistent (typically the case) no Incidental Take Permit would be required by CDFG for San Joaquin kit fox for the proposed expressway project. If the USFWS finds that an incidental take permit is not warranted, but CDFG finds such a permit is warranted, then the applicant would lose the ability to use Fish and

Game Code §2080.1 and instead would be required to obtain a separate incidental take permit from CDFG pursuant to §2081 of the Fish and Game Code.

7.4 Applicable CEQA Regulations

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. "Rare" species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will "substantially affect a rare or endangered species of animal or plant or the habitat of the species." The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

7.4.1 Applicability to Proposed Project

The proposed project has been reviewed pursuant to CEQA. The Atwater-Merced Expressway Project Recirculated Draft Environmental Impact Report was prepared by CirclePoint in November 2008; the Atwater-Merced Expressway Project Final Environmental Impact Report was prepared by CirclePoint in February 2009, and the Notice of Determination was filed by Merced County Associated Governments (MCAG) (CEQA Lead Agency) in March of 2009 (see attached) (State Clearing House # 2006081138). The lead agency is in the process of revalidation of the Phase 1A-Reduced Atwater-Merced Expressway Project pursuant to CEQA.

7.5 California Fish and Game Code §§ 3503, 3503.5, 3511, 3800

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, "fully protected" birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

7.5.1 Applicability to the Project

Raptors that potentially could be impacted by the project include Swainson's hawk, red-tailed hawk, red shouldered hawk, white-tailed kite, northern harrier, and western burrowing owl. Preconstruction surveys should be conducted for these species to ensure that there is no direct take of these birds including their eggs, or young. Any active nests that were found during preconstruction surveys should be avoided. Suitable non-disturbance buffers should be

established around nest sites until the nesting cycle is complete (see Impacts Mitigation Measures described below).

7.6 Protected Amphibians

Under Title 14 of the California Code of Regulations (CCR 14, Division 1, Subdivision 1, Chapter 5, §41. Protected Amphibians), protected amphibians, such as the California tiger salamander may only be taken under special permit from California Department of Fish and Game issued pursuant to Sections 650 and 670.7 of these regulations.

7.6.1 Applicability to the Project

The project site does not provide suitable habitat for protected amphibian species.

8. REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE

This section presents an overview of the criteria used by the U.S. Army Corps of Engineers, the California Regional Water Quality Control Board, the State Water Resources Control Board, and CDFG to determine those areas within a project area that would be subject to their regulation.

8.1 U.S. Army Corps of Engineers Jurisdiction and General Permitting

8.1.1 Section 404 of the Clean Water Act

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States. In the Federal Register "waters of the United States" are defined as, "...all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce..." (33 CFR Section 328.3).

Limits of Corps' jurisdiction.

(a) Territorial Seas. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles. (See 33 CFR 329.12)

(b) Tidal Waters of the United States. The landward limits of jurisdiction in tidal waters:

> (1) Extends to the high tide line, or
> (2) When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.

(c) Non-Tidal Waters of the United States. The limits of jurisdiction in non-tidal waters:

> (1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or

(2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
(3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams, extends to the upward limit of the ordinary high water mark (OHWM) or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]). Wetlands are defined as "...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions" (33 CFR Section 328.8 [b]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded) to be regulated by the Corps pursuant to Section 404 of the Clean Water Act.

It should be noted that the extent of the Corps jurisdiction pursuant to Section 404 of the Clean Water Act was recently modified. In Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, the U.S. Supreme Court [148 L. Ed. 2d 576 (2001) (SWANCC)] ruled that the Corps exceeded its authority under the Clean Water Act when it regulated discharges of fill material into "isolated" waters used as habitat by migratory birds. Accordingly, waters (including wetlands) that are not connected hydrologically to navigable waters may now not be subject to regulation by the Corps.

A recent Supreme Court decision may also significantly change how the Corps defines waters of the United States. [Following text excerpted from a newsletter prepared by Briscoe, Ivester, and Bazel LLP] On June 19, 2006 the United States Supreme Court, in a "four-one-four" decision, addressed the extent of Clean Water Act jurisdiction over wetlands adjacent to tributaries of navigable waters. The extent to which the decision will further restrict federal regulation of wetlands remains unclear. In two consolidated cases, *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers*, a five-Justice majority of the Court remanded the case to the Sixth circuit for further consideration. The Court was unable to produce a majority vote in favor of any one jurisdictional standard for the Sixth Circuit to apply (or for the regulated community to follow). Instead, Justice Scalia authored a plurality opinion that would significantly narrow the reach of federal wetlands jurisdiction, while Justice Kennedy, concurring in the judgment only, concluded that the appropriate test for jurisdiction over wetlands was the presence of a "significant nexus" between wetlands and "navigable waters" in the traditional sense. The remaining four Justices, in a dissenting opinion by Justice Stevens, would have upheld the Corps of Engineers' assertion of jurisdiction and would have affirmed the Sixth Circuit's decision. When no opinion garners at least five votes, lower courts follow the concurrence that reached the result on the narrowest grounds. Here, that is Justice Kennedy's opinion. Unfortunately, Justice

Kennedy did not provide specific guidance about the extent of federal jurisdiction over wetlands that are adjacent to tributaries of navigable waters.

Justice Kennedy concluded that the Clean Water Act applies only to those wetlands with a "significant nexus" to "navigable waters in the traditional sense." A significant nexus exists when a wetland, "either alone or in combination with similarly situated lands in the region, significantly affect[s] the chemical, physical, and biological integrity" of factually navigable waters. Under Supreme Court precedent, wetlands adjacent to navigable waters meet this test. For wetlands located near *tributaries* of navigable waters, however, each wetland demands a case-by-case jurisdictional inquiry. We know only that a "mere hydrological connection" is not enough in all cases, and that "speculative or insubstantial" effects on water quality will not suffice to satisfy the test.

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging or otherwise impacting “waters of the United States”. In many cases, the Corps must visit a proposed project area (to conduct a “jurisdictional determination”) to confirm the extent of area falling under their jurisdiction prior to authorizing any permit for that project area. Typically, at the time the jurisdictional determination is conducted, applicants (or their representative) will discuss the appropriate permit application that would be filed with the Corps for permitting the proposed impact(s) to “waters of the United States.”

Pursuant to Section 404 of the Clean Water Act, the Corps normally provides two alternatives for permitting impacts to the type of “waters of the United States” found in the project area. The first alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an Individual Permit (33 CFR Section 235.5(2)(b)). The application process for Individual Permits is extensive and includes public interest review procedures (i.e., public notice and receipt of public comments) and must contain an “alternatives analysis” that is prepared pursuant to Section 404(b) of the Clean Water Act (33 U.S.C. 1344(b)). The alternatives analysis is also typically reviewed by the federal Environmental Protect Agency (EPA), and thus brings another resource agency into the permitting framework. Both the Corps and EPA take the initial viewpoint that there are practical alternatives to the proposed project if there would be impacts to waters of the U.S., and the proposed permitted action is not a water dependent project (e.g. a pier or a dredging project). Alternative analyses therefore must provide convincing reasons that the proposed permitted impacts are unavoidable. Individual Permits may be available for use in the event that discharges into regulated waters fail to meet conditions of NWP(s).

NWPs are a type of general permit administered by the Corps and issued on a nationwide basis that authorize minor activities that affect Corps regulated waters. Under NWP, if certain conditions are met, the specified activities can take place without the need for an individual or regional permit from the Corps (33 CFR, Section 235.5[c][2]). In order to use NWP(s), a project must meet 27 general nationwide permit conditions, and all specific conditions pertaining to the NWP being used (as presented at 33 CFR Section 330, Appendices A and C). It is also important to note that pursuant to 33 CFR Section 330.4(e), there may be special regional conditions or modifications to NWPs that could have relevance to individual proposed projects. Finally,

pursuant to 33 CFR Section 330.6(a), Nationwide permittees may, and in some cases must, request from the Corps confirmation that an activity complies with the terms and conditions of the NWP intended for use (*i.e.*, must receive "verification" from the Corps).

Prior to finalizing design plans, the applicant needs to be aware that the Corps maintains a policy of "no net loss" of wetlands (waters of the United States) from project area development. Therefore, it is incumbent upon applicants that propose to impact Corps regulated areas to submit a mitigation plan that demonstrates that impacted regulated areas would be recreated (*i.e.*, impacts would be mitigated). Typically, the Corps requires mitigation to be "in-kind" (i.e., if a stream channel would be filled, mitigation would include replacing it with a new stream channel), and at a minimum of a 1:1 replacement ratio (i.e., one acre or fraction there of recreated for each acre or fraction thereof lost). Often a 2:1 replacement ratio is required. Usually the 2:1 ratio is met by recreation or enhancement of an equivalent amount of wetland as is impacted, in addition to a requirement to preserve an equivalent amount of wetland as is impacted by the project. In some cases, the Corps allows "out-of-kind" mitigation if the compensation site has greater value than the impacted site. For example, if project designs call for filling an intermittent drainage, mitigation should include recreating the same approximate jurisdictional area (same drainage widths) at an offsite location or on a set-aside portion of the project area. Finally, there are many Corps approved wetland mitigation banks where wetland mitigation credits can be purchased by applicants to meet permitting requirements. Mitigation banks have limited distribution and the Corps typically only allows their use when projects have minimal effects on wetlands. If a project meets conditions of Nationwide Permits, and an Individual Permit is not required by the Corps, then typically the Corps allows use of wetland mitigation banks (if available) to meet its no net loss requirement and to otherwise mitigate the impacts of the project.

8.1.2 Applicability to the Proposed Project

Canal Creek is the only "waters of the U.S." that occurs in the project area. However, there will be no impacts to Canal Creek as the utilities will be routed underneath Canal Creek via horizontal directional drilling (HDD). Thus, the proposed project will not impact any "waters of the U.S."

8.2 Rivers and Harbors Act

Under Section 10 of the Rivers and Harbors Act, the Corps has jurisdiction over navigable waters of the U.S. to the historic limit of mean high water. Section 10 requires that a permit be obtained from the Corps for all activities in navigable waters that involve excavating, filling, dredging, construction or placement of an obstruction in or to a navigable water body. Section 10 jurisdiction extends to the entire surface and bed of all water bodies subject to tidal action (33 CFR 329.12[b]).

8.2.1 Applicability to The Proposed Project

There are non-navigable waters within the project area. Thus, prior authorization from the Corps pursuant to Section 10 Rivers and Harbors Act is not required.

8.3 State Water Resources Control Board (SWRCB) / California Regional Water Quality Control Board (RWQCB)

8.3.1 SECTION 401 OF THE CLEAN WATER ACT

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers permitting programs that authorize impacts to waters of the United States, including wetlands, and other waters, any Corps permit authorized for a proposed project would be invalid unless it is a NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification or waiver of water quality. Certification of NWPs requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the issued NWP (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the California Environmental Quality Act, the California Endangered Species Act, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification or waiver of water quality.

Additionally, if a proposed project would impact waters of the State, including wetlands, and the project applicant cannot demonstrate that the project is unable to avoid these adverse impacts, water quality certification will most likely be denied. Section 401 Certification may also be denied based on significant adverse impacts to waters of the United States, including wetlands. The RWQCB has also adopted the Corps' policy that there shall be "no net loss" of wetlands. Thus, prior to certifying water quality, the RWQCB will impose avoidance mitigation requirements on project proponents that impact waters of the State.

8.3.2 APPLICABILITY TO THE PROPOSED PROJECT

Canal Creek is the only "waters of the State" that occurs in the project area. However, there will be no impacts to Canal Creek as the utilities will be routed underneath Canal Creek via HDD. Thus, the proposed project will not impact any "waters of the state."

8.4 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, that could affect the waters of the State to file a report of discharge" with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). It should be noted that pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB also regulates "isolated wetlands," or those wetlands considered to be outside of the Corps' jurisdiction pursuant to the SWANCC decision (see Corps Section above).

The RWQCB generally considers filling in waters of the State to constitute "pollution." Pollution is defined as an alteration of the quality of the waters of the state by waste that unreasonably affects its beneficial uses (Water Code §13050(1)). The RWQCB litmus test for determining if a

project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any "threat" to water quality.

8.4.1 APPLICABILITY TO PROPOSED PROJECT

Prior to any ground disturbance adjacent to Canal Creek, silt fencing will be installed around the work areas to prevent sedimentation of the creek channel. The work areas, access routes, construction staging areas and equipment storage areas will be delineated with flagging to limit disturbance to adjacent areas. Upon completion of the project, all disturbed upland areas will be hydroseeded with native seed mix. Thus, the proposed project will not impact any "waters of the state."

8.5 National Pollutant Discharge Elimination System (NPDES)

In 1972 the Clean Water Act was amended to state that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the Clean Water Act added Section 402(p) which establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES Program. On November 16, 1990, the U.S. Environmental Protection Agency (EPA) published final regulations that establish stormwater permit application requirements for specified categories of industries. The regulations provide that discharges of stormwater to waters of the United States from construction projects that encompass five (5) or more acres of soil disturbance are effectively prohibited unless the discharge is in compliance with an NPDES Permit. EPA regulations that became final on December 8, 1999 (known as Phase II) expand the existing NPDES program to address stormwater discharges from small MS4s and from construction sites disturbing between 1 and 5 acres of land.

While federal regulations allow two permitting options for stormwater discharges (individual permits and General Permits), the SWRCB has elected to adopt only one statewide General Permit at this time that will apply to all stormwater discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (CalTrans). The General Permit requires all dischargers where construction activity disturbs greater than one acre of land to:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters.

2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.

3. Perform inspections of all BMPs.

This General Permit is implemented and enforced by the nine California Regional Water Quality Control Boards (RWQCBs).

Types of Construction Activity Covered by the General Permit

Construction activity subject to this General Permit includes clearing, grading, and disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre or more of total land area. Construction activity that results in soil disturbances to a smaller area would still be subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses greater than one acre of soil disturbance, or if there is significant water quality impairment resulting from the activity. Construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility, nor does it include emergency construction activities required to protect public health and safety. Project proponents (landowners) should confirm with the local RWQCB whether or not a particular routine maintenance activity is subject to this General Permit.

8.5.1 2009 Changes to the NPDES Program and Use of the General Permit

[This section excerpted in part from Morrison Foerster Legal Updates and News September 2009, by Robert L. Falk and Corinne Fratini]. The California State Water Resources Control Board ("State Water Board") has adopted a new National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities ("Construction General Permit"). The new Construction General Permit which was issued pursuant to the federal Clean Water Act and is enforceable through citizens' suits, represents a dramatic shift in the State Water Board's approach to regulating new and redevelopment sites, imposing new affirmative duties and fixed standards on builders and developers. Changes to use of the General Permit became effective on July 1, 2010.

The new Construction General Permit does not completely carry forward the former qualitative and self-selected compliance approach based on preparation of a SWPPP. Instead, developers and construction contractors must implement specific BMPs, achieve quantitatively-defined (i.e., numeric) pollutant-specific discharge standards, and conduct much more rigorous monitoring based on the project's projected risk level.

The State Water Board's new quantitative standards take a two-tiered approach, depending on the risk level associated with the site in question. Exceedance of a benchmark Numeric Action Level ("NAL") measured in terms of pH and turbidity (a measure related to both the amount of sediment in and the velocity of site runoff) triggers an additional obligation to implement additional BMPs and corrective action to improve SWPPP performance. For medium- and high-risk sites, failure to meet more stringent numeric standards for pH and turbidity, known as Numeric Effluent Limitations ("NELs"), will also automatically result in a permit violation and be directly enforceable in administrative or, in the case of a citizens' group taking up the cause, judicial forums. New minimum BMPs include Active Treatment Systems, which may be necessary where traditional erosion and sediment controls do not effectively control accelerated erosion; where site constraints inhibit the ability to construct a correctly-sized sediment basin; where clay and/or highly erosive soils are present; or where the site has very steep or long slope lengths.

In addition, the new Construction General Permit includes several "post-construction" requirements. These requirements entail that site designs provide no net increase in overall site runoff and match pre-project hydrology by maintaining runoff volume and drainage concentrations. To achieve the required results where impervious surfaces such as roofs and paved surfaces are being increased, developers must implement non-structural off-setting BMPs, such as landform grading, site design BMPs, and distributed structural BMPs (bioretention cells, rain gardens, and rain cisterns). This "runoff reduction" approach is essentially a State Water Board-imposed regulatory requirement to implement Low Impact Development ("LID") design features. Volume that cannot be addressed using non-structural BMPs must be captured in structural BMPs that are approved by the Regional Water Board.

Finally, the new Construction General Permit requires electronic filing of all Permit Registration Documents, NOIs, SWPPPs, annual reports, Notices of Termination, and NAL/NEL Exceedance Reports. This information will be readily available to the Water Boards and citizen enforcers who can then determine whether to initiate enforcement actions—actions which can result in significant penalties and legal fees.

8.5.2 Applicability to The Proposed Project

On September 2, 2009, the State Water Resources Control Board adopted Order No. 2009-0009-DWQ, which reissues the Construction General Permit (CGP) for projects disturbing one or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than one acre of land surface. Effective July 1, 2010, the requirements of this order will replace and supersede State Water Board Orders No. 99-08-DWQ.

It is the responsibility of the applicant to obtain coverage under the General Permit prior to commencement of construction activities that disturb greater than one acre of area. As the process of receiving coverage under the General Permit became considerably more involved in July 2010, the project engineer should start this permitting loop with the RWQCB at least 6 months in advance of the commencement of the proposed project.

8.6 RWQCB Municipal Storm Water Permitting Program

The Municipal Storm Water Permitting Program regulates storm water discharges from municipal separate storm sewer systems (MS4s). MS4 permits were issued in two phases. Under Phase I, which started in 1990, the RWQCBs have adopted NPDES storm water permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 people) municipalities. Most of these permits are issued to a group of co-permittees encompassing an entire metropolitan area. These permits are reissued as the permits expire.

As part of Phase II, the SWRCB adopted a General Permit for the Discharge of Storm Water from Small MS4s (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities, including non-traditional Small MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes.

The MS4 permits require the discharger to develop and implement a Storm Water Management Plan/Program (SWMP) with the goal of reducing the discharge of pollutants to the maximum

extent practicable (MEP). MEP is the performance standard specified in Section 402(p) of the Clean Water Act. The management programs specify what best management practices (BMPs) will be used to address certain program areas. The program areas include public education and outreach; illicit discharge detection and elimination; construction and post-construction; and good housekeeping for municipal operations. In general, medium and large municipalities are required to conduct chemical monitoring, though small municipalities are not.

8.6.1 Applicability to the Proposed Project

Merced County has applied to become a MS4 permittee and thus is required to enforce development of a project specific SWMP that incorporates pre- and post-construction BMPs. As such, Merced County would be the lead agency enforcing development of a SWMP containing pre and post construction BMPs and this SWMP is supposed to be consistent with the RWQCB's permitting requirements. That being said, Monk & Associates does not know to what extent Merced County enforces BMPs plans. Regardless, Monk & Associates recommends that a good SWMP be incorporated into the project design.

8.7 California Department of Fish and Game Protections

8.7.1 Section 1602 of California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code, California Department of Fish and Game (CDFG) regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream, which CDFG typically considers to include riparian vegetation. Any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, would require entering into a Streambed Alteration Agreement (SBAA) with CDFG prior to commencing work in the stream. However, prior to authorizing such permits, CDFG typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

8.7.2 Applicability to Proposed Project

Canal Creek would be regulated by CDFG pursuant to Section 1602 of the Fish and Game Code. Since the proposed project will require a SBAA from the CDFG, the proposed HDD under Canal Creek will be included in that permit application.

9. IMPACTS ANALYSIS

In this section we discuss potential impacts to sensitive biological resources including special-status animal species and waters of the United States and/or State. We follow each impact with a mitigation prescription that when implemented would reduce impacts to the greatest extent possible.

Significance Criteria

A significant impact is determined using CEQA and CEQA Guidelines. Pursuant to CEQA §21068, a significant effect on the environment means a substantial, or potentially substantial,

adverse change in the environment. Pursuant to CEQA Guideline §15382, a significant effect on the environment is further defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. Other Federal, State, and local agencies' considerations and regulations are also used in the evaluation of significance of proposed actions.

Direct and indirect adverse impacts to biological resources are classified as "significant," "potentially significant," or "less than significant." Biological resources are broken down into four categories: vegetation, wildlife, threatened and endangered species, and regulated "waters of the United States" and/or stream channels. "Significant" impacts as they pertain to these four categories are discussed under the appropriate heading below.

A "potentially significant" designation is used under circumstances where the presence of a special-status species or resource is uncertain and project construction could result in its loss. This designation is also used if it is unclear if the proposed project would result in a significant adverse impact, but the likelihood is great. "Less than significant" impacts are those impacts not put into either significant or potentially significant categories. Impacts would be generally considered less than significant if the habitats and species affected were common and widespread in the region and in the State.

9.1.1 THRESHOLDS OF SIGNIFICANCE

9.1.1.1 Plants, Wildlife, Waters

In accordance with Appendix G (Environmental Checklist Form) of the CEQA Guidelines, implementing the project would have a significant biological impact if it 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 California Department of Fish and Game or U.S. Fish and Wildlife Service.

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

- 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.

- 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.

9.1.1.2 Waters of the United States and State.

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into waters of the United States, which includes wetlands, as discussed in the bulleted item above, and also includes "other waters" (stream channels, rivers) (33 CFR Parts 328 through 330). Substantial impacts to Corps regulated areas on a project site would be considered a significant adverse impact. Similarly, pursuant to Section 401 of the Clean Water Act, and to the Porter-Cologne Water Quality Control Act, the RWQCB regulates impacts to waters of the state. Thus, substantial impacts to RWQCB regulated areas within the project area would also be considered a significant adverse impact.

9.1.1.3 Stream Channels

Pursuant to Section 1602 of the California Fish and Game Code, CDFG regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which CDFG typically considers to include riparian vegetation. Any proposed activity that would result in substantial modifications to a natural stream channel would be considered a significant adverse impact.

10. IMPACT ASSESSMENT AND PROPOSED MITIGATION

10.1 Impact 1. Potentially Significant Impacts to Western Pond Turtle

The western pond turtle (*Emys marmorata*) is a California species of special concern that is known to occur in the project vicinity. Owing to the horizontal directional drilling under Canal Creek, the proposed utility relocation project will not impact any aquatic habitat occupied by this species. However, the proposed project could result in impacts to potentially occupied upland nesting habitat adjacent to Canal Creek. Impacts to western pond turtles would be regarding as a potentially significant impact. This impact shall be mitigated to a level considered less than significant pursuant to CEQA.

10.2 Mitigation Measure 1. Mitigation for Western Pond Turtle

The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the western pond turtle. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied aquatic habitat and upland nesting habitat within the final project alignment could be impacted by the proposed project. Since avoidance of all potentially occupied habitats is not possible, mitigation would include conducting preconstruction surveys for western pond turtle and avoidance of nest sites. Preconstruction surveys for turtles and their nests shall be conducted 30 days prior to any construction in or surrounding any large primary irrigation canals, creeks, or Canal Creek. If

nest sites are located adjacent to a proposed work area, the nest site plus a 50-foot buffer around the nest site shall be fenced to avoid impacts to the eggs or hatchlings which over-winter at the nest site. In addition, if nest(s) are located during surveys, moth balls (naphthalene) should be sprinkled around the vicinity of the nest (no closer than 10 feet) to mask human scent and discourage predators.

Construction at the nest site and within the 50-foot buffer area shall be delayed until the young leave the nest (this could be a period of many months) or as otherwise advised and directed by CDFG, the agency responsible for overseeing the protection of the pond turtle. If CDFG allows translocation of any nestling pond turtles this shall be completed by a qualified biologist under the direction of CDFG. While the measures prescribed above would reduce the impacts to Pacific pond turtles to a level regarded as less than significant pursuant to the CEQA, CDFG may also require mitigation for any impacts to the turtle's habitat following completion of nesting. Any CDFG requirements would become conditions of the project that shall be implemented by the project sponsor. This mitigation is typically at a 1:1 mitigation ratio, or as otherwise determined by CDFG. Mitigation credits shall be purchased from a qualified mitigation bank if required by CDFG. This mitigation measure would reduce impacts to a level regarded as less than significant.

Significance after Mitigation: Less than significant.

10.3 Impact 2. Potentially Significant Impacts to Nesting Raptors

Suitable nesting habitats for white-tailed kite, northern harrier, red-tailed hawk, red shouldered hawk, Swainson's hawk, and western burrowing owl have been observed in the vicinity of the proposed project area. Since all of these species are mobile and often change nest sites from year to year, these raptors could nest in the vicinity of the proposed project area in the future. All raptors (that is, birds of prey) are also protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their nests, eggs, and young are protected under California Fish and Game Codes Sections 3503, 3503.5. The white-tailed kite is fully protected under the California Fish and Game Code (3511).

Since the Swainson's hawk is a state listed species which typically requires greater mitigation then non-listed raptors, the Swainson's hawk is discussed in separate impact and mitigation sections below. Similarly, since the western burrowing owl is a California species of special concern that has formal CDFG mitigation requirements, impacts and mitigations for impacts to western burrowing owl are also discussed in sections below.

Impacts to nesting raptors are regarded as potentially significant. Potential impacts to these species from the proposed project could include disturbance to nesting birds, and possibly death of adults and/or young. Impacts to nesting raptors would be a significant adverse impact. This impact shall be mitigated to a level considered less than significant. Impacts to unoccupied nesting habitats for these species would not be considered significant as there are other local and regional nesting habitats available for use by these species that could be used in subsequent nesting seasons. Consequently no mitigation is warranted for impacts to unoccupied nesting habitats.

10.4 Mitigation Measure 2. Mitigation for Nesting Raptors

Nesting surveys shall be conducted in the spring of the year prior to construction of the project and, if construction would commence between March 1 and September 1, again 30 days prior to construction of the project. The raptor nesting surveys shall include examination of all trees and shrubs within the project area and trees and shrubs within the sphere of influence of the proposed project.

If nesting raptors are identified during the surveys, the dripline of the nest tree or shrub must be fenced with orange construction fencing. In addition, a 300-foot radius buffer must be fenced with orange construction fencing where this buffer intersects the expressway alignment work areas. This 300-foot buffer may be reduced if a qualified raptor biologist determines that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. At a minimum, however, the non-disturbance buffer shall be a radius of 100 feet around the nest tree or shrub. If the nest site is on an adjacent property, the portion of the buffer that occurs on the project site shall be fenced with orange construction fencing.

When construction buffers are reduced from the 300-foot radius, a qualified raptor biologist shall monitor distress levels of the nesting birds for one week after project disturbance occurs. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the raptor biologist shall have the right to re-implement the full 300 -foot buffer. Instances when the buffer could be reduced in size would be if the raptors were well acclimated to disturbance and/or if there were physical barriers between the nest site and the construction project that would reduce disturbance to the nesting raptors. No construction or earth-moving activity should occur within the non-disturbance buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1. Regardless, the resource agencies consider September 1 the end of the nesting period unless otherwise determined by a qualified raptor biologist. Once the raptors have completed the nesting cycle, that is the young have reached independence of the nest, no further regard for the nest site shall be required. No other compensatory mitigation is required.

Significance after Mitigation: Less than significant.

10.5 Impact 3. Potentially Significant Impacts to Swainson's Hawk

The closest known occurrence of this species is located 0.7 miles east of the project area (CNDDB Occurrence No. 1760). The trees in the vicinity of the project area provide suitable nesting habitat for this species. The fallow fields and hay fields provide suitable foraging habitat for this species. Swainson's hawks were observed in the vicinity of the project area by Monk & Associates during the wildlife surveys conducted in January of 2012.

Since Swainson's hawks are known to nest in the vicinity of the proposed project area, implementation of the utility relocation project would be viewed by CDFG as a direct impact to the Swainson's hawk. Nest site disturbance which results in: (1) nest abandonment; (2) loss of

young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates), may ultimately result in the take (killing) of nestling or fledgling Swainson's hawks incidental to otherwise lawful activities. The taking of Swainson's hawks in this manner can be viewed by the CDFG as a violation of the Section 2080 of the Fish and Game Code. This interpretation of take has been judicially affirmed by the landmark appellate court decision pertaining to CESA (CDFG v. ACID, 8 CA App.4, 41554) (CDFG 1994).

Any disturbance around a Swainson's hawk nest that is not characteristic of the normal activities around the nest site that caused disruption of the nesting attempt would likely be regarded by CDFG as a violation of CESA. Typically, CDFG requires that any impact to a Swainson's hawk nest be permitted through a Fish and Game Section 2081 management authorization. If an active nest is found on or immediately adjacent to the project area (which is generally considered to be within 300 feet of the project area) "to avoid potential violation of Fish and Game Code 2080 (i.e., killing of listed species), project-related disturbance at active Swainson's hawk nesting sites should be reduced or eliminated during critical phases of the nesting cycle (March 1- September 15 annually)" (CDFG 1994). If disturbance would occur to an actual active nest site (disturbance to the nest site or within 1000 feet of the nest site), a Fish and Game Section 2081 management authorization shall be obtained as required by CDFG. Impacts to nesting Swainson's hawks would be considered a significant impact. These impacts shall be mitigated to levels considered less than significant.

The project area is within 5 miles of a known Swainson's hawk nest (CNDDB records) and is therefore considered by CDFG to be within the "defined foraging area" for this species (CDFG 1994). However, no suitable foraging habitat would be permanently impacted by the utility relocation project.

10.6 Mitigation Measure 3. Mitigation for Swainson's Hawk.

CDFG has prepared guidelines for conducting surveys for Swainson's hawk entitled: *Recommended Timing and Methodology for Swainson's hawk Nesting Surveys in California's Central Valley* (CDFG 2000). These survey recommendations were developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reduce the potential for nest failures as a result of project activities and/or disturbances. To meet the CDFG's recommendations for mitigation and protection of Swainson's hawks in this guideline, surveys should be conducted for a half-mile radius around all project activities and should be completed for at least the two survey periods immediately prior to a project's initiation. The guidelines provide specific recommendations regarding the number of surveys based on the project is scheduled to begin and the time of year the surveys are conducted.

If Swainson's hawks are found to be nesting on or within the area of influence of the project (within 1,000 feet of the project alignment), impacts to nesting Swainson's hawks would be regarded as significant and adverse, and mitigation compensation would be required.

The CDFG Mitigation Guidelines state that acceptable mitigation to offset impacts to Swainson's hawk foraging habitat can be met by Fee Title acquisition of Swainson's hawk habitat, or by

acquisition of the right to record a conservation easement over lands that can be managed for this hawk species (hereinafter Habitat Management Lands). Any land acquired through Fee Title would have to be donated to a suitable conservation organization for management. In addition to providing Habitat Management Lands, the project sponsor would be assessed a management fee for the long-term management of the Habitat Management Lands by a suitable conservation organization. In lieu of these mitigation measures, as approved by CDFG, the project sponsor may purchase mitigation credits commensurate with the acreage of impacts to foraging and/or nesting habitat at a CDFG approved Swainson's hawk mitigation bank.

Significance after Mitigation: Less than significant.

10.7 Impact 4. Potentially Significant Impacts to Western Burrowing Owl

The western burrowing owl is a California species of special concern. This owl is also protected under California Fish and Game Code §3503, §3503.5, §3513, and §3800, and the Federal Migratory Bird Treaty Act. There is a record for western burrowing owl 0.5-mile to the north of the project site (CNDDB Occurrence No. 877). Since this owl and ground squirrels are known from the area, and thus could nest or reside in the vicinity of the project area when the proposed project is implemented, impacts to western burrowing owl would be regarded as potentially significant and adverse. These impacts shall be mitigated to levels considered less than significant.

10.8 Mitigation Measure 4. Mitigation for Western Burrowing Owls

Mitigation Measure 4-A. A nesting survey shall be conducted for ground nesting raptors, such as western burrowing owl and northern harrier. The burrowing owl survey should be conducted in accordance with the survey requirements detailed in the CDFG's October 17, 1995 *Staff Report on Burrowing Owl Mitigation.* Surveys shall be conducted in both the breeding season (April 15-July 15) and non-breeding season (December-January) to assess use of the project area by this species. If burrowing owls are present on the project area during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 75 meter (276-foot) buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance within the project area. This 276-foot buffer could be removed once it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest). Typically, the young fledge by August 31. This date may be earlier than August 31, or later, and would have to be determined by a qualified raptor biologist. If northern harriers are identified nesting within the project area, mitigation measures detailed above for nesting raptors should be implemented.

Additionally, if burrowing owls are identified nesting onsite and would be affected by the proposed project, an upland mitigation area for burrowing owls shall be established offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls that would be affected by the proposed project, with a minimum of 6.5 acres preserved per pair of owls or single owl that would be affected by the proposed project. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are found to be within the project area, the mitigation requirement shall be 2 x 6.5 = 13 acres provided that no more than two pairs of owls are

observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be 3 x 6.5 = 19.5 acres). A detailed mitigation and monitoring plan shall be developed for the burrowing owl mitigation area. This plan must be prepared in coordination with CDFG, and approved by this agency. In lieu of this mitigation measure, as approved by CDFG, credit commensurate with the mitigation acreage requirements set forth above shall be purchased from a qualified burrowing owl mitigation bank.

Mitigation Measure 4-B. Preconstruction surveys of the project area shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted to non-habitat (e.g., graded and developed).

Mitigation Measure 4-C. If western burrowing owls must be passively relocated from the project area to remove them from harm's way, these activities shall be approved by CDFG in advance. Passive relocation shall not commence before September 30th and shall be completed prior to February 1st.

Mitigation Measure 4-D. If an upland mitigation site is designated for burrowing owls, it shall be approved as a suitable burrowing owl mitigation property by CDFG. The preserved area shall be preserved in perpetuity as wildlife habitat via recordation of a conservation easement that designates the CDFG, or any other qualified conservation organization as approved by CDFG as the Grantee of the easement.

Mitigation Measure 4-E: If a conservation easement is established over burrowing owl habitat, an endowment to cover the management of the mitigation area and implementation of the mitigation and monitoring plan shall be provided by the project sponsor to the Grantee of the Conservation Easement prior to issuance of the grading permit.

Significance after Mitigation: Less than significant.

10.9 Impact 5. Potentially Significant Impacts to Common and Special-Status Nesting Passerine Birds

Nesting passerine birds (that is, perching birds), and special-status birds such as loggerhead shrike or tricolored blackbirds could be impacted. Birds and their nests are protected under California Fish and Game Code (Sections 3503, 3503.5), and the Migratory Bird Treaty Act. Impacts to nesting birds, their eggs, and/or young resulting from the proposed project would be potentially significant. These impacts shall be mitigated to levels considered less than significant pursuant to CEQA. Impacts to unoccupied nesting habitats for these species would not be considered significant as there are other local and regional nesting habitats available for use by these species that could be used in subsequent nesting seasons. Consequently no mitigation is warranted for impacts to unoccupied nesting habitats.

10.10 Mitigation Measure 5. Mitigation for Common and Special-Status Nesting Passerine Birds

A nesting survey shall be conducted 15 days prior to commencing construction work if this work would commence between March 1 and September 1. If special-status birds, such as loggerhead shrike or tricolored blackbirds, are identified nesting within or near the project area, a 200-foot radius around the nest must be staked with bright orange construction fencing. No construction or earth-moving activity shall occur within this 200-foot staked buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by August 1. This date may be earlier than August 1, or later, and would have to be determined by a qualified ornithologist.

If common (that is, not special-status) passerine birds (that is, perching birds such as American robins, scrub jays, and northern mockingbird) are identified nesting within the project area, grading activities in the immediate area shall be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the area. Typically, most passerine birds can be expected to complete nesting by July 1, with young attaining sufficient flight skills by early July.

Significance after Mitigation: Less than significant.

10.11 Impact 6. Potentially Significant Impacts to San Joaquin Kit Fox

San Joaquin kit fox (SJKF), a federally-threatened species, was not identified during protocol surveys conducted by Monk & Associates in 2007. These surveys covered all of the lands included in the Atwater-Merced Expressway Phase 1A-Reduced project, as well as all of the lands included in the PG&E and AT&T utility relocation projects. Based on the results of the protocol survey conducted for this project, Monk & Associates believes that there is a very low likelihood of kit fox occurring within the project area. The extent of land manipulation and high degree of disturbance due to agricultural practices such as tilling and crop planting have drastically decreased the value of the project area for kit fox, and thus their use of the project area is less likely. Furthermore, the utility relocation project area is completely surrounded by heavily trafficked roadways and actively farmed fields. However, Canal Creek could provide marginal habitat, particularly as a migration corridor for the kit fox between ruderal and grassland habitats in the area.

As the AT&T fiber optic line relocation project is completely contained within project area evaluated under the AME EIR, there are no new impacts to SJKF habitats associated with the AT&T fiber optic line relocation. However, there are new impacts to SJKF habitats associated with the PG&E gas pipeline relocation project. These impacts include 8.41 acres of agricultural lands and 2.26 acres of urban lands. Agricultural lands are considered medium quality potential SJKF habitat, while urban lands are considered low quality potential SJKF habitat.

10.12 Mitigation Measure 6. Mitigation for San Joaquin Kit Fox

In order to offset the project's impact to high and medium quality potential San Joaquin kit fox habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation

Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation bank available for use at the time the project is constructed). The USFWS has approved use of this bank to jointly mitigate for impacts to California tiger salamander upland estivation/over-summering habitat and San Joaquin kit fox habitat. Mitigation credits that are purchased compensate for permanent impacts and for temporary impacts to high and medium quality suitable kit fox habitats. No mitigation would be required for impacts to the "low" quality and unlikely habitats. The USFWS will require a 2:1 mitigation ratio for permanent impacts to potential SJKF habitat (for medium and high quality habitat areas only), and a 0.5:1 mitigation ratio for temporary impacts to potential SJKF habitat. This mitigation requirement will be satisfied through the purchase of mitigation credits in advance of the project.

Finally, avoidance and minimization measures will be implemented by the proposed project to further reduce potential impacts to the San Joaquin kit fox. An employee training program will be conducted before groundbreaking to explain the Federal Endangered Species Act and any endangered species concerns to contractors working in the area. Qualified biologists would then conduct preconstruction den surveys no more than 14 days prior to groundbreaking to ensure that potential kit fox dens are not disrupted during construction of the project. If "potential dens" are located, infrared camera stations will be set up and maintained for 3 consecutive nights at den openings prior to initiation of groundbreaking activities to determine the status of the potential dens. If no kit fox is found to be using the den, groundbreaking activities would proceed unhindered. However, if a kit fox is found using a den site within an area of influence of the project (i.e., within 300 feet of the project boundary), the USFWS will be notified at once. Because timing is an issue, notification would be via a telephone call (and as necessary voice-mail message) to the Chief of Endangered Species in Sacramento, and the Supervisor of Environmental Services at the appropriate CDFG Regional office. If the den is a refuge site only, the project sponsor will seek permission from the USFWS (and CDFG) to passively relocate the fox(es) from the den site prior to the initiation of the groundbreaking activities. As approved, passive relocation will occur over a three day period. Should a den be found that is a natal or pupping den, and it is within an area of influence near the project, the groundbreaking activities would be delayed until such time that biologists can confirm that all kit foxes have left the den site. Once the den has been vacated, an infra-red triggered camera would be set at the den opening. The camera would then be checked over a 2-day period to confirm that kit foxes no longer use the den. Once this is verified, grading equipment could be moved into the area and the groundbreaking activities completed.

Prior to initiating groundbreaking activities, the vehicle and equipment access routes and work area will be delineated using construction fencing. This will minimize the project-related disturbance to potential San Joaquin kit fox habitat to the maximum extent possible. During the groundbreaking activities, all project-related vehicle traffic will be restricted to established roads or access routes, and will observe a 20-mile an hour speed limit within the work areas, except on County roads and highways. A biological monitor will be present during all activities that could result in injury to San Joaquin kit fox. The biologist will have the authority to halt work, if necessary, to protect the kit fox.

To prevent harm to San Joaquin kit fox, any steep-walled holes and/or trenches excavated for the project will be completely covered at the end of each workday, or escape ramps will be provided to allow any entrapped animals to escape unharmed. All pipe sections stored at the project site overnight that are four inches in diameter or greater will be inspected for San Joaquin kit fox before the pipes are moved or buried. If San Joaquin kit fox are identified in the work area at any time, the USFWS and/or CDFG will be notified and consulted before work activities resume. All trash items will be removed from the project site to reduce the potential for attracting predators of San Joaquin kit fox. Contractors will be prohibited from bringing firearms and pets to the job site.

Prior to impacting San Joaquin kit fox habitat, an "incidental take" permit (Section 7 consultation) would be required from USFWS, and an "incidental take" permit (Section 2081 permit) would be required from CDFG. In lieu of such a permit, CDFG may process a "consistency determination" pursuant to Fish and Game Code §2080.1. Such a determination would indicate that the State's interests in protecting State listed species are met by the federal biological opinion (i.e., the incidental take permit) issued by USFWS and thus no Section 2081 permit is required.

Significance after Mitigation: Less than significant.

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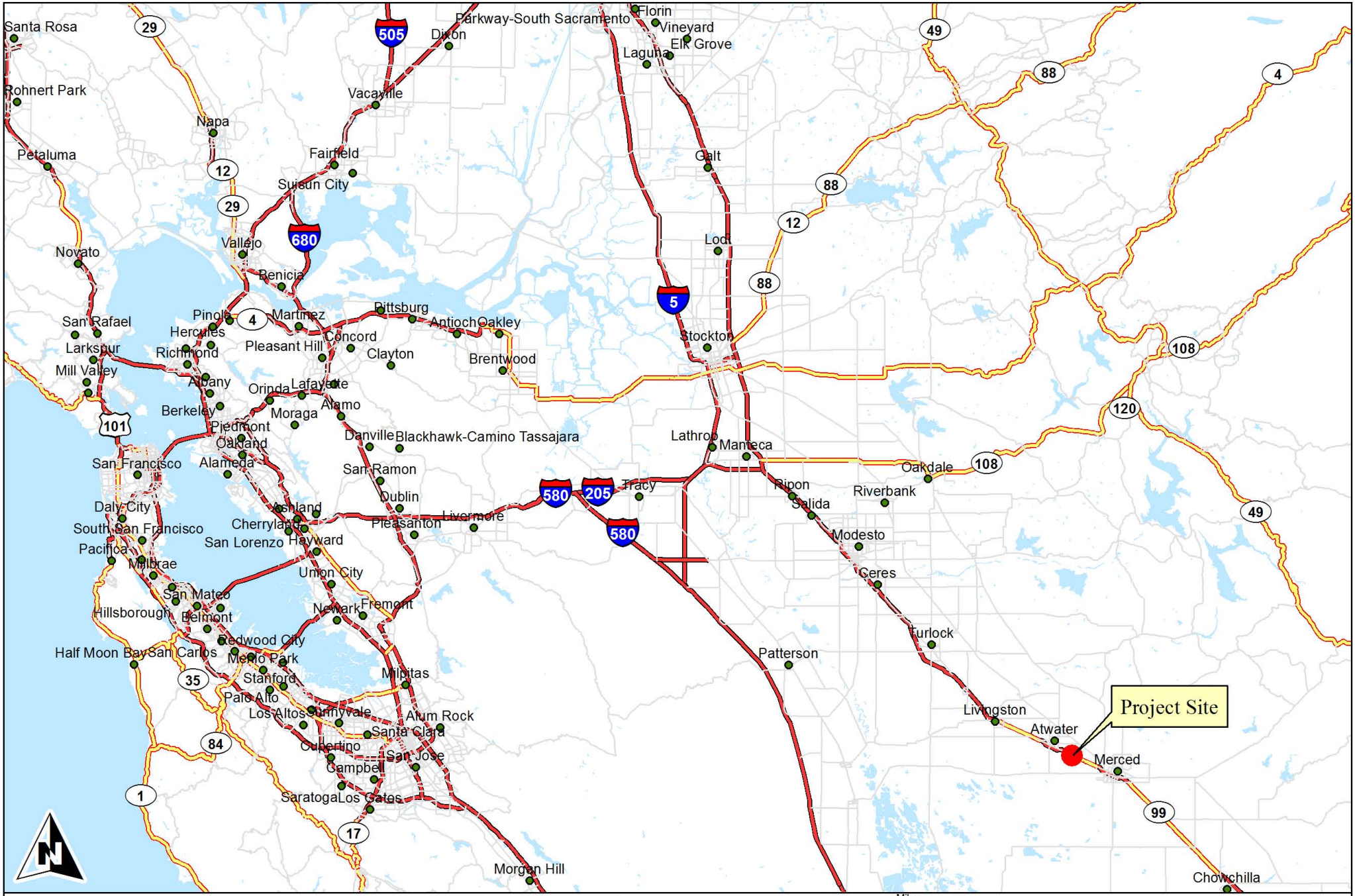
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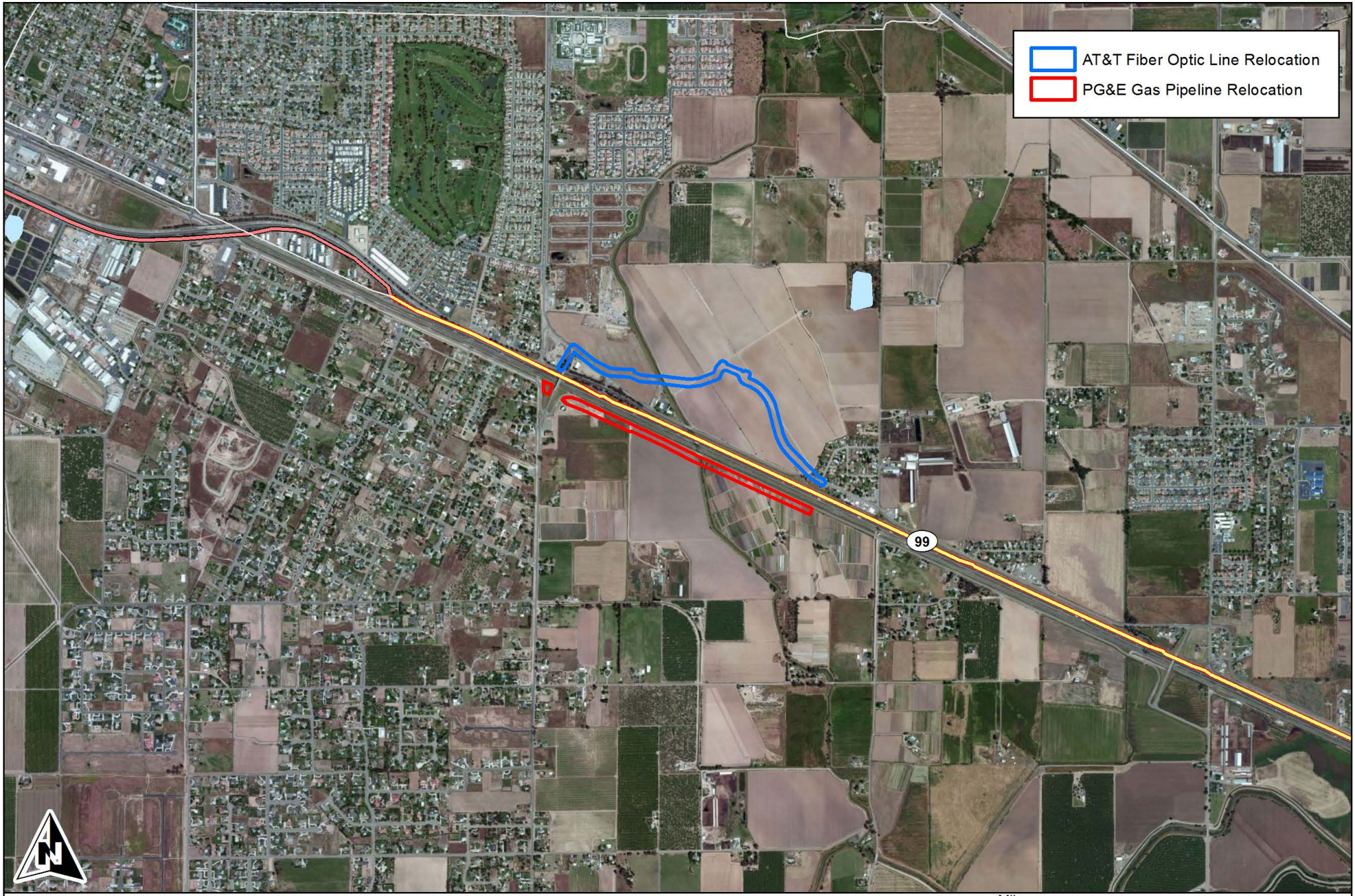
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Figure 1. Atwater-Merced Expressway Utility Relocation
Project Site Regional Map
Merced County, California

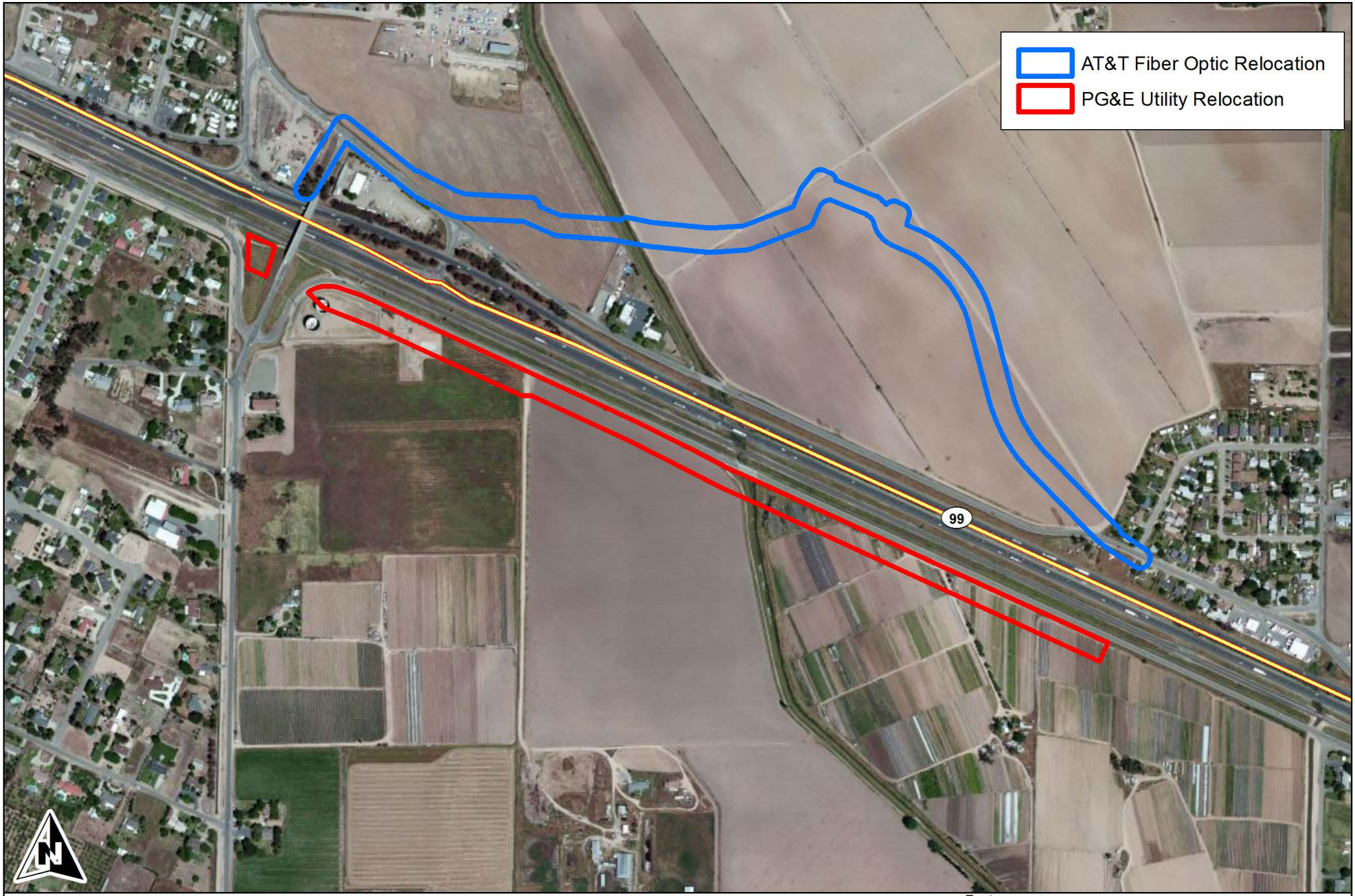
County: Merced
Map Revision Date: January 26, 2012



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Figure 2. Atwater-Merced Expressway Utility Relocation
Project Site Location Map
Merced County, California

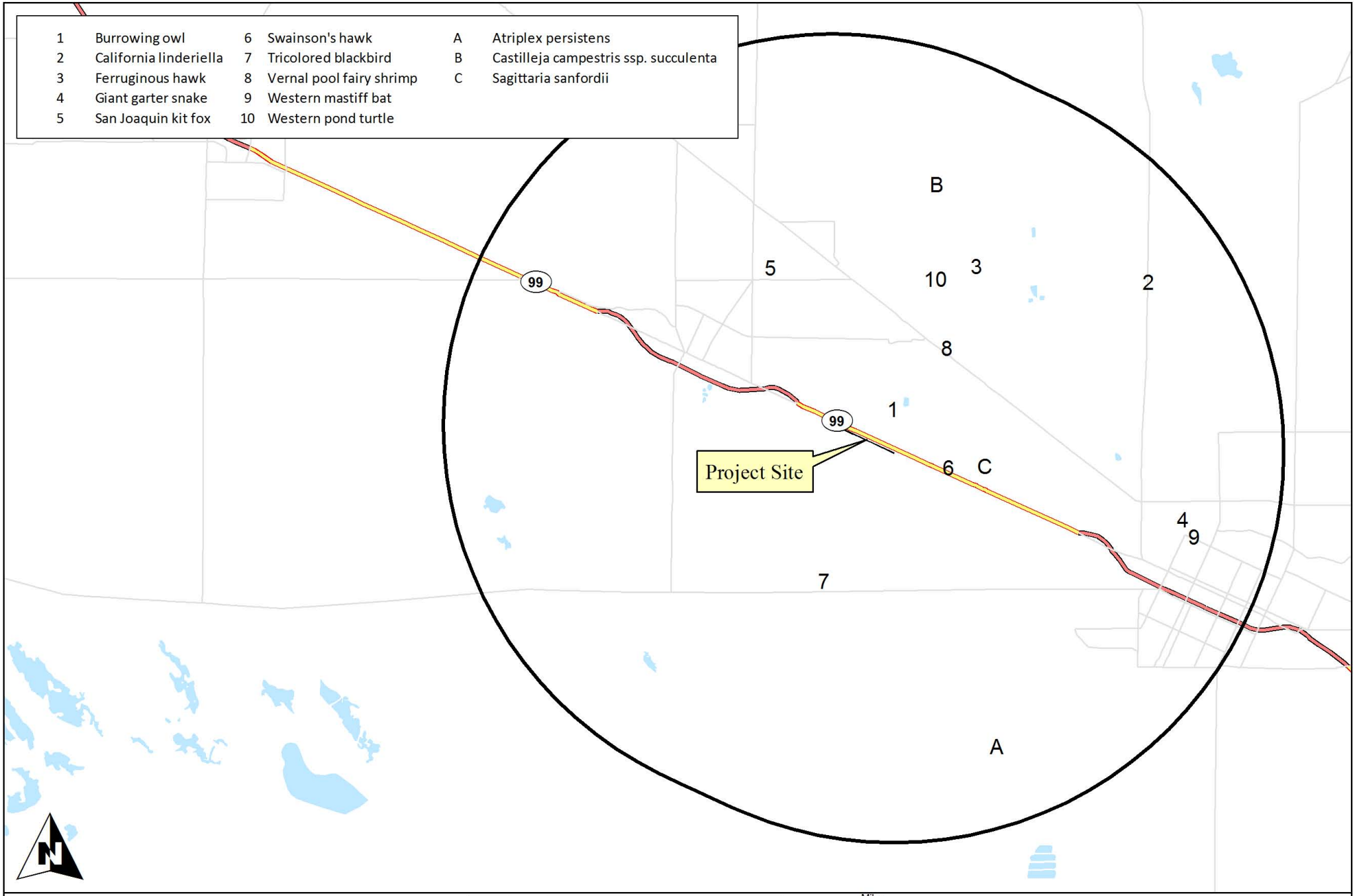
7.5-Minute Atwater quadrangle
Map Revision Date: January 26, 2012
Aerial Photograph Source:
http://goto.arcgisonline.com/maps/World_Imagery (2008)



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Figure 3. Aerial Photograph of the
Atwater-Merced Expressway Utility Relocation Project Site
Merced County, California

7.5-Minute Atwater quadrangle
Map Revision Date: March 13, 2012
Aerial Photograph Source:
http://goto.arcgisonline.com/maps/World_Imagery (2008)



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Figure 4. Closest Known Records for Special-Status Species Known to Occur within 5 Miles of the Atwater-Merced Expressway Utility Relocation Project Site

Map Revision Date: January 26, 2012
5-Mile Radius
Source: CDFG, California Natural Diversity Data Base, 2012

Table 1

Plants Observed in the Atwater-Merced Expressway Utility Relocation Project Area

Angiosperms - Dicots

Amaranthaceae

**Amaranthus sp.*	Amaranthus

Asteraceae (Compositae)

**Centaurea solstitialis*	Yellow starthistle
**Cirsium vulgare*	Bull thistle
Erigeron canadensis	Horseweed
Helianthus annuus	Sunflower
**Silybum marianum*	Milk thistle

Brassicaceae (Cruciferae

**Sinapis arvensis*	Wild mustard

Chenopodiaceae

**Chenopodium album*	White pigweed
**Salsola tragus*	Russian-thistle

Euphorbiaceae

Croton setigerus	Turkey mullein

Geraniaceae

**Erodium cicutarium*	Red-stem filaree

Polygonaceae

**Polygonum aviculare*	Common knotweed

Rosaceae

**Prunus dulcis*	Almond tree
Prunus sp.	Prunus

Solanaceae

**Datura sp.*	Thornapple

Angiosperms -Monocots

Poaceae (Gramineae)

**Avena barbata*	Slender wild oat
**Bromus diandrus*	Ripgut grass
**Hordeum murinum*	Wall barley
**Sorghum bicolor*	Sorghum
**Triticum aestivum*	Wheat

* Indicates a non-native species

Table 2
Wildlife Observed in the Atwater-Merced Expressway Utility Relocation Project Area

Birds	
Snowy egret	*Egretta thula*
Swainson's hawk	*Buteo swainsoni*
American kestrel	*Falco sparverius*
Mourning dove	*Zenaida macroura*
American crow	*Corvus brachyrhynchos*
Savannah sparrow	*Passerculus sandwichensis*
House finch	*Carpodacus mexicanus*
Mammals	
Botta's pocket gopher	*Thomomys bottae*
Feral cat	*Felis catus*

Table 3

Special-status Plant Species Potentially Occurring in the Vicinity of the AME Utility Relocation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Alismataceae					
Sagittaria sanfordii Sanford's arrowhead	Fed: - State: - CNPS: List 1B	May-October	Marshes and swamps (assorted shallow freshwater).	Closest record for this species located 1.2 miles east of the project site (Occurrence No. 75).	None. No suitable habitat on the project site.
Apiaceae (Umbellife					
Eryngium racemosum Delta button-celery	Fed: - State: CE CNPS: List 1B	June-August	Riparian scrub (vernally mesic clay depressions).	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Eryngium spinosepalum Spiny-sepaled button-celery	Fed: - State: - CNPS: List 1B	April-May	Valley and foothill grassland; vernal pools. 100-200 m.	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Asteraceae (Compo					
Lasthenia glabrata coulteri Coulter goldfields	Fed: - State: - CNPS: List 1B	February-June	Marshes and swamps (coastal salt); playas; vernal pools.	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Trichocoronis wrightii wrightii Wright's trichocoronis	Fed: - State: - CNPS: List 2	May-September	Meadows; marshes and swamps; riparian forest; venal pools; [alkaline].	On CNPS nine-quad search.	None. No suitable habitat on the project site.

Table 3

Special-status Plant Species Potentially Occurring in the Vicinity of the AME Utility Relocation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Boraginaceae					
Phacelia ciliata opaca Merced phacelia	Fed: - State: - CNPS: List 1B	February-May	Valley and foothill grassland (clay).	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Brassicaceae (Cruci					
Lepidium latipes heckardii Heckard's peppergrass	Fed: - State: - CNPS: List 1B	April-May	Valley and foothill grassland (alkaline flats).	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Campanulaceae					
Downingia pusilla Dwarf downingia	Fed: - State: - CNPS: List 2	March-May	Valley and foothill grassland (mesic); vernal pools.	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Chenopodiaceae					
Atriplex cordulata cordulata Heartscale	Fed: - State: - CNPS: List 1B	April-October	Meadows and seeps; chenopod scrub; valley and foothill grassland (sandy); [saline or alkaline].	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Atriplex depressa Brittlescale	Fed: - State: - CNPS: List 1B	May-October	Chenopod scrub; playas; valley and foothill grassland; [alkaline or clay].	On CNPS nine-quad search.	None. No suitable habitat on the project site.

Table 3

Special-status Plant Species Potentially Occurring in the Vicinity of the AME Utility Relocation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Atriplex joaqiniana San Joaquin spearscale	Fed: - State: - CNPS: List 1B	April-September	Chenopod scrub; meadows; valley and foothill grassland; [alkaline].	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Atriplex minuscula Lesser saltbush	Fed: - State: - CNPS: List 1B	May-October	Chenopod scrub; playas; valley and foothill grassland [alkaline].	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Atriplex persistens Vernal pool smallscale	Fed: - State: - CNPS: List 1B	July-October	Vernal pools (alkaline).	Closest record for this species located 3.6 miles southwest of the project site (Occurrence No. 7).	None. No suitable habitat on the project site.
Atriplex subtilis Subtle orach	Fed: State: CNPS: List 1B	June-August	Valley and foothill grassland.	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Euphorbiaceae					
Chamaesyce hooveri Hoover's spurge	Fed: FT State: - CNPS: List 1B	July-October	Vernal pools.	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Fabaceae (Legumin					
Astragalus tener tener Alkali milkvetch	Fed: - State: - CNPS: List 1B	March-June	Playas; valley and foothill grassland (adobe clay), vernal pools (alkaline).	On CNPS nine-quad search.	None. No suitable habitat on the project site.

Table 3

Special-status Plant Species Potentially Occurring in the Vicinity of the AME Utility Relocation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Lamiaceae (Labiata					
Monardella leucocephala Merced monardella	Fed: - State: - CNPS: List 1A	July-August	Valley and foothill grassland (sandy).	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Malvaceae					
Sidalcea keckii Keck's checkerbloom	Fed: FE State: - CNPS: List 1B	April-April	Cismontane woodland; valley and foothill grassland; [serpentinite].	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Onagraceae					
Clarkia rostrata Beaked clarkia	Fed: - State: - CNPS: List 1B	April-May	Cismontane woodland; valley and foothill grassland. About 500 m.	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Orobanchaceae					
Castilleja campestris succulenta Succulent owl's-clover	Fed: FT State: CE CNPS: List 1B	April-May	Vernal pools. Below 750 m.	Closest record for this species located 3.3 miles north of the project site (Occurrence No. 45).	None. No suitable habitat on the project site.
Poaceae (Graminea					
Neostapfia colusana Colusa grass	Fed: FT State: CE CNPS: List 1B	May-July	Vernal pools.	On CNPS nine-quad search.	None. No suitable habitat on the project site.

Table 3

Special-status Plant Species Potentially Occurring in the Vicinity of the AME Utility Relocation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Orcuttia inaequalis San Joaquin Valley Orcutt grass	Fed: FT State: CE CNPS: List 1B	May-September	Vernal pools.	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Orcuttia pilosa Hairy Orcutt grass	Fed: FE State: CE CNPS: List 1B	May-September	Vernal pools.	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Polemoniaceae					
Navarretia nigelliformis radians Shining navarretia	Fed: - State: - CNPS: List 1B	May-June	Cismontane woodland; valley and foothill grassland; vernal pools.	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Navarretia prostrata Prostrate vernal pool navarretia	Fed: State: CNPS: List 1B	April-July	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), and vernal pools (mesic). Elevation 15-1210 m.	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Ranunculaceae					
Delphinium recurvatum Recurved larkspur	Fed: - State: - CNPS: List 1B	March-June	Chenopod scrub; cismontane woodland; valley and foothill grassland; [alkaline].	On CNPS nine-quad search.	None. No suitable habitat on the project site.
Myosurus minimus apus Little mousetail	Fed: - State: - CNPS: List 3	March-June	Vernal pools (alkaline).	On CNPS nine-quad search.	None. No suitable habitat on the project site.

Table 3

Special-status Plant Species Potentially Occurring in the Vicinity of the AME Utility Relocation Project Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

CNPS:
List 1A - Presumed extinct in California
List 1B - Plants rare, threatened, or endangered in California and elsewhere
List 1B.1 - Seriously endangered in California (over 80% occurrences threatened/ high degree and immediacy of threat)
List 1B.2 - Fairly endangered in California (20-80% occurrences threatened)
List 1B.3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

CNPS Continued:
List 2 - Plants rare, threatened, or endangered in California, but more common elsewhere
List 2.1 - Seriously endangered in California, but more common elsewhere
List 2.2 - Fairly endangered in California, but more common elsewhere
List 2.3 - Not very endangered in California, but more common elsewhere
List 3 - Plants about which we need more information (Review List)
List 3.1 - Plants about which we need more information (Review List) Seriously endangered in California
List 3.2 - Plants about which we need more information (Review List) Fairly endangered in California
List 4 - Plants of limited distribution - a watch list

Table 4

Special-status Wildlife Species Known to Occur in the Vicinity of the AME Utility Relocation Project Area

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Invertebrates				
Vernal pool fairy shrimp *Branchinecta lynchi*	Fed: FT State: - Other:	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains. Inhabit static rain-filled/vernal pools, small, clear water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression	Closest record for this species located 1.4 miles northeast of the project site (Occurrence No. 181).	None. No suitable habitat is present on the project site.
Reptiles				
Western pond turtle *Emys marmorata*	Fed: -- State: CSC Other:	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying. Occurs in the Central Valley and Contra Costa County.	Closest record for this species located 2.3 miles north of the project site (Occurrence No. 321).	Moderate. No direct impacts to creek habitats are proposed.
Giant garter snake *Thamnophis gigas*	Fed: FT State: CT Other:	Inhabits freshwater marshes and low gradient streams. Also found in drainage canals and irrigation ditches.	Closest record for this species located 3.8 miles east of the project site (Occurrence No. 144).	None. No suitable habitat is present on the project site.
Birds				
Swainson's hawk *Buteo swainsoni*	Fed: - State: CT Other: *	Migratory and resident raptor that breeds in open areas with scattered trees. Prefers riparian and sparse oak woodland habitats for nesting. Requires nearby grasslands, grain fields, or alfalfa for foraging.	Closest record for this species located 0.7 mile east of the project site (Occurrence No. 1760).	Moderate. Nest site within 0.7 miles of the project site. See impacts and mitigation section of attached report.
Ferruginous hawk *Buteo regalis*	Fed: -- State: WL Other: *	Winter migrant to California where they prefer grasslands, cultivated fields and arid areas with an abundance of prey species, such as pocket gophers, black-tailed hares, and cottontails.	Closest record for this species located 2.5 miles northeast of the project site (Occurrence No. 60).	None. Does not nest in California.

Table 4

Special-status Wildlife Species Known to Occur in the Vicinity of the AME Utility Relocation Project Area

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Western burrowing owl *Athene cunicularia hypugaea*	Fed: -- State: CSC Other: *	Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Closest record for this species located 0.5 mile north of the project site (Occurrence No. 877).	None. No suitable habitat is present on the project site.
Tricolored blackbird *Agelaius tricolor*	Fed: -- State: CSC Other: *	Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	Closest record for this species located 1.5 miles south of the project site (Occurrence No. 65).	Moderate. No direct impacts to creek habitats are proposed. Preconstruction surveys will be conducted to avoid impacts to this species.
Mammals				
Greater western mastiff bat *Eumops perotis californicus*	Fed: -- State: CSC Other:	Inhabits open habitats including conifer and broad-leaved woodlands, coastal scrub, chaparral, and grassland. Roosts in crevices, high buildings, trees, and tunnels.	Closest record for this species located 4.0 miles east of the project site (Occurrence No. 71).	None. No suitable habitat is present on the project site.
San Joaquin kit fox *Vulpes macrotis mutica*	Fed: FE State: CT Other:	Inhabits open grasslands with scattered shrubs. Needs loose-textured sand soils for burrowing.	Closest record for this species located 2.1 miles northwest of the project site (Occurrence No. 23).	None. No suitable habitat is present on the project site.

Table 4

Special-status Wildlife Species Known to Occur in the Vicinity of the AME Utility Relocation Project Area

Species	*Status	Habitat	Closest Locations	Probability on Project Site

***Status**

Federal:	State:	*Other:
FE - Federal Endangered	CE - California Endangered	Most birds have protection under the Migratory Bird Treaty Act. Raptors and their nests are protected by provisions of the California Fish and Game Code. A few species, such as the monarch butterfly and "California Fully Protected Animals," may be protected by policies of the California Department of Fish and Game.
FT - Federal Threatened	CT - California Threatened	
FPE - Federal Proposed Endangered	CR - California Rare	
FPT - Federal Proposed Threatened	CC - California Candidate	
FC - Federal Candidate	CSC - California Species of Special Concern	
FPD - Federally Proposed for delisting	WL - Watch List. Not protected persuant to CEQA	

APPENDIX D

Phase 1A-Reduced Utility Relocation, Cultural Resources Addendum

February 21, 2012

Ms. Jessie Shen
Associate Environmental Planner
Circlepoint
135 Main Street, Suite 1600
San Francisco, CA 94105

Dear Ms. Shen,

This letter serves as our report on additional cultural resources survey for the proposed Atwater-Merced Expressway project in Merced County, California. As you know, Far Western did the original study in 2006/2007 (Byrd and Waechter 2007). Subsequently, Circlepoint identified modifications to the project, including the relocation of an AT&T fiber optic line and a PG&E gas transmission line. Portions of the preferred alignment for the relocation are outside the original survey area and required additional field survey (Figure 1).

Records Search

The original records search at the Central California Information Center was large enough to include the proposed new alignment. That records search identified two previously recorded resources within the revised study area: P-24-00090, Canal Creek, which is in fact a natural drainage that has been used as a canal; and P-24-00091, the Buhach Lateral canal. Both have been evaluated by historians from JRP Historical Consulting, who concluded that they are not eligible for the National Register of Historic Places (JRP 1993a, 1993b) and/or the California Register of Historical Resources (JRP 2007). Canal Creek is a natural, rather than a cultural resource, and therefore does not qualify. The Buhach Lateral, probably dating to the 1930s or 1940s, "does not retain integrity of design, materials, workmanship, feeling or association to the settlement period of the county and does not appear to be significant in the more limited context of recent agricultural or engineering developments in the San Joaquin Valley" (JRP 1993a, 1993b). These resources require no additional consideration for the current project.

Supplemental Field Survey

On February 15, 2012, Far Western senior archaeologist Michael Darcangelo and archaeological technician Patty Galindo returned to the project area to carry out a surface survey of the newly identified Area of Potential Effects as defined on aerial photographs provided to Far Western by Circlepoint (Figure 2). The archaeologists, spaced eight meters apart, walked one transect the length of the corridor. Ground visibility north of N. Buhach Road was poor (< 20%), due to thick clusters of introduced weeds. In contrast, the portion of the project south of N. Buhach Road had at least 75-80% surface visibility, with only limited areas of agricultural plantings. The archaeologists also made spot-checks of the profile exposed in the cut bank of Canal Creek on the southern end of the project corridor. No archaeological resources were noted within the newly identified project corridor.

Potential for Buried Archaeological Deposits

Previous assessments of the potential for buried archaeological resources (Rosenthal and Meyer 2004, 2007) revealed that most of the project area has low or very low potential (Figure 3). A comparison of the study area with Rosenthal and Meyer's mapping showed that most of the ancillary survey area lies within Late Pleistocene soils (25,000-15,000 years Before Present [BP]) and has very low potential to contain buried surfaces; the remaining portion falls into Early Holocene soils (11,500-7000 BP) but is not within 200 meters of a natural water source and thus has low potential.

Summary and Recommendations

Based on our review of the records search data and buried-sites sensitivity, and the results of the ancillary field survey, we conclude that the proposed utility line relocations will not affect eligible historic properties.

Please feel free to call or email me if you have any questions or need additional information.

Sincerely,

Sharon A Waechter, M.A./RPA
Project Director

References Cited

Byrd, Brian F., and Sharon A. Waechter

2007 *Archaeological Survey Report for the Atwater-Merced Expressway Project, Merced County, California.* Prepared for the Merced County Association of Governments. Prepared at the request of Circlepoint, San Francisco, California. Far Western Anthropological Research Group, Inc., Davis, California.

JRP Historical Consulting

1993a *Canal Inventory Form for Canal Creek (LG-20), Merced Irrigation District. Primary Number P-24-00090.* Prepared for the Mojave Natural Gas Pipeline Northward Expansion Project. Prepared at the request of Woodward-Clyde Consulting, Oakland, California.

1993b *Canal Inventory Form for the Buhach Lateral (DG-32), Merced Irrigation District. Primary Number P-24-00091.* Prepared for the Mojave Natural Gas Pipeline Northward Expansion Project. Prepared at the request of Woodward-Clyde Consulting, Oakland, California.

2007 *Historical Resources Inventory and Evaluation Report, Atwater-Merced Expressway Project, Merced, California.* Prepared for the Merced County Association of Governments. Prepared at the request of Circlepoint, San Francisco, California.

Rosenthal, Jeff, and Jack Meyer

2004 *Cultural Resources Inventory of Caltrans District 10 Rural Conventional Highways, Volume III: Geoarchaeolgical Study; Landscape Evolution and the Archaeological Record of Central California.* Prepared by Far Western Anthropological Research Group, Inc., Davis, California. Submitted to California Department of Transportation, District 10, Stockton, California. Report on file at the Central California Information Center, California State University, Stanislaus.

2007 Buried Site Potential. In *Archaeological Survey Report for the Atwater-Merced Expressway Project, Merced County, California*, Brian F. Byrd and Sharon A. Waechter. Prepared for the Merced County Association of Governments. Prepared at the request of Circlepoint, San Francisco, California. Far Western Anthropological Research Group, Inc., Davis, California.

Attachments

Figure 1. Project Location.

Figure 2. Survey Coverage.

Figure 3. Buried Site Sensitivity.

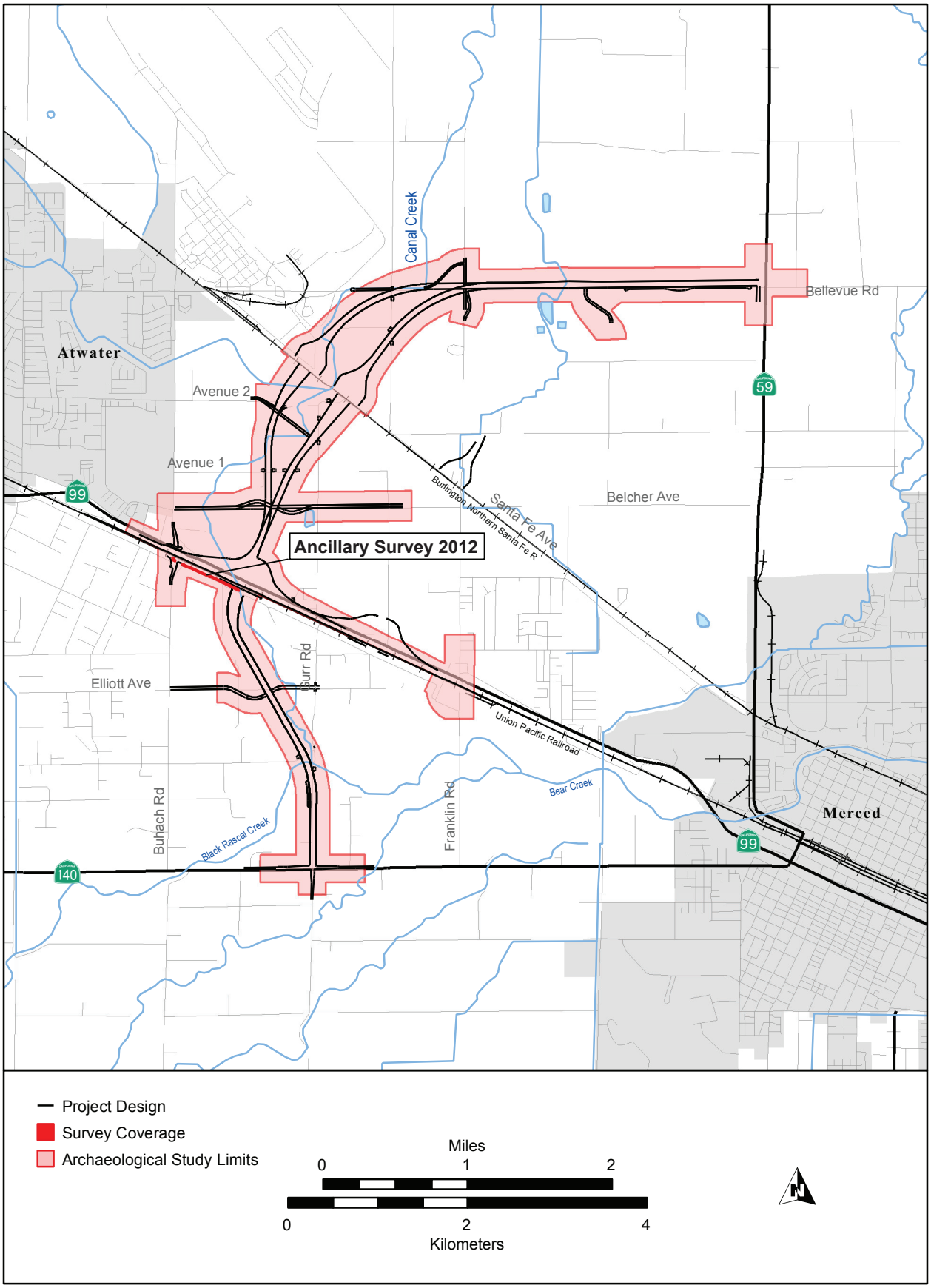


Figure 1. Project Location.



Figure 2. Survey Coverage.

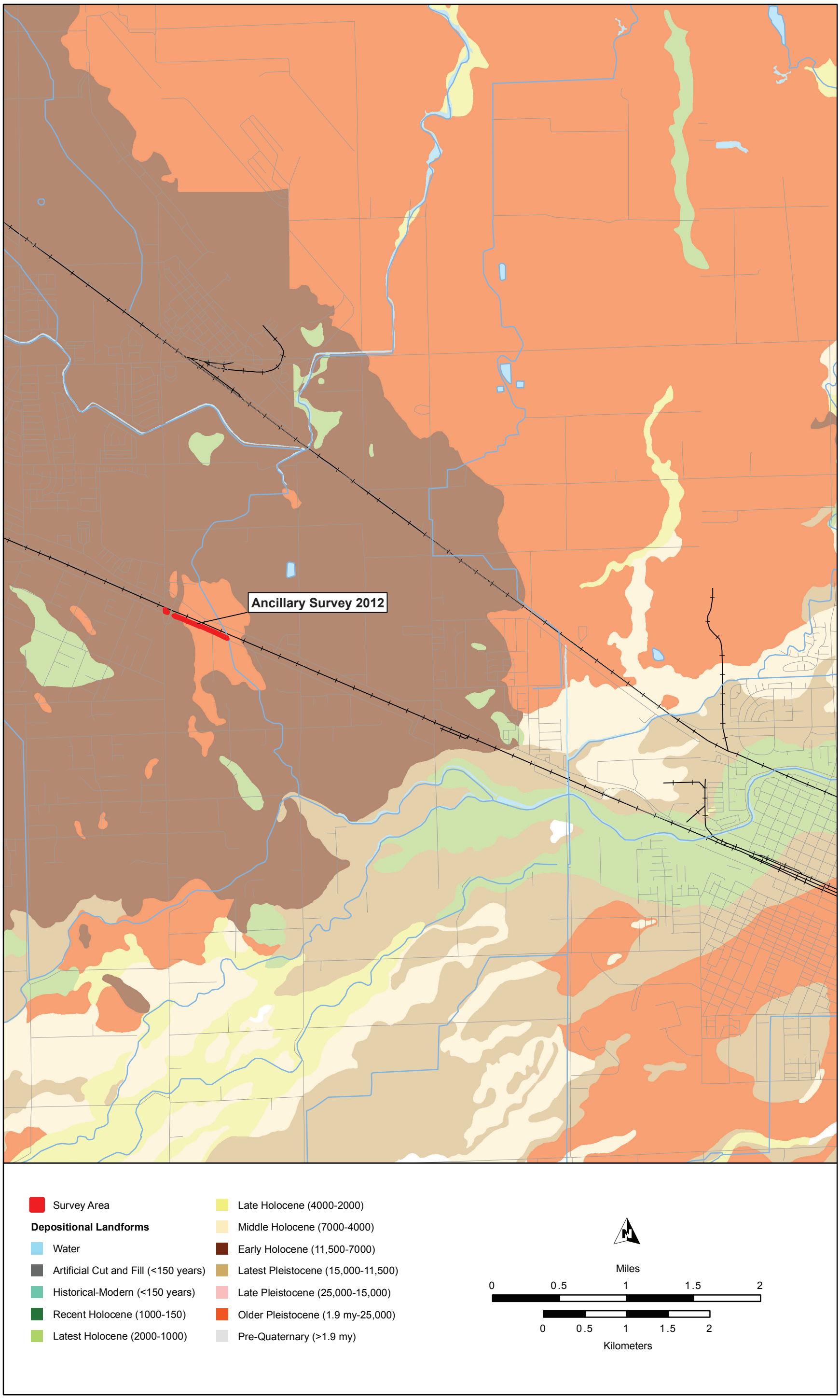


Figure 3. Buried Site Sensitivity.

APPENDIX E

Phase 1A-Reduced
Mitigation Monitoring and Reporting Program

APPENDIX E ATWATER MERCED EXPRESSWAY, PHASE 1A–REDUCED MITIGATION MONITORING REPORTING PROGRAM

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Land Use and Agriculture				
N/A	Although the conversion of farmland is considered a less-than-significant impact, MCAG shall mitigate for the loss of agricultural lands in conformance with any countywide program adopted by Merced County prior to the commencement of construction. In the event no such program is in place prior to commencement of construction, the farmland impacts of the AME project should be mitigated by purchasing conservation easements at a 1:1 ratio for impacted farmlands. Under the 1:1 ratio, for every acre of farmland converted by the AME project and equivalent amount of farmland within the County would be placed under conservation easement(s). These conservation easements would ensure that the farmland would be protected in perpetuity for future development.	MCAG	Prior to grading	
Visual Resources				
Impact VIS-1: The construction, realignment, and expansion of roadways within the project area could create new sources of daytime and nighttime lighting that could adversely affect day or nighttime views in the area.	**Mitigation Measure VIS-1a:** Lighting at construction sites shall be shielded and shall face downwards at lot lines so as to not be directly visible from any adjoining sensitive uses, such as residential areas, unless required to maintain safe levels of lighting for work and security, and as necessary to meet Occupational Safety and Health Administration (OSHA) standards.	MCAG and contractor	On going through construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact VIS-1, continued.	**Mitigation Measure VIS-1b:** Street lighting shall incorporate directional shielding so as not to shine directly on residential areas adjacent to the project site.	MCAG and contractor	Detailed design phase	
Impact VIS-2: The removal of existing vegetation within Caltrans facilities could adversely affect existing visual features in these areas.	**Mitigation Measure VIS-2:** Any vegetation removal from within the state right-of-way as a result of the proposed construction activities shall be identified prior to removal and shall be replaced within project limits at a ratio approved by Caltrans. Funds shall be set aside by the project sponsor for replacement highway planting. Replacement highway planting must be installed within two years of damage or removal of the existing planting. A minimum 3-year plant establishment period will be included to assure the success of the replacement highway planting. For any new plantings or plantings within project limits and Caltrans jurisdiction, barriers shall be installed, where possible without compromising motorist safety, in front of vegetation to avoid loss of tree and shrubs from vehicle collisions. During the construction of the project, ESA fencing shall be used to protect existing trees and shrubs will be required.	Contractor in coordination with Caltrans and City/County planning	Detailed design phase, construction and within 2 years of plant removal	
Impact VIS-3: The construction and modification of project features within state facilities could be inconsistent with the visual character being implemented along SR 99.	**Mitigation Measure VIS- 3:** Project facilities and features along SR 99 shall be constructed with aesthetic treatments consistent with the design guidelines provided in the Route 99 Corridor Enhancement Master Plan. These design guidelines shall apply to bridges, median plantings and soundwalls on SR 99 within project limits. The aesthetic design shall be approved by Caltrans prior to modification of any state facilities. These aesthetic treatments should be coordinated through the Caltrans Landscape Architecture unit and the Bridge Aesthetics unit at Caltrans Headquarters. This coordination with Caltrans and the incorporation of design features consistent with the Route 99 Corridor Enhancement Master Plan would reduce any impacts related to inconsistent visual features to a less-than-significant level.	Contractor in coordination with City planning and Caltrans	Detailed design phase	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact VIS-3, continued.	Required design features are likely to include aesthetics treatments such as: • Extended Gore Paving • Color or architectural concrete barrier used on bridge structures • Color or texture on slope paving under a bridge abutment • Color or arch work on the bridge fence ~~• Use of aesthetic treatments on new soundwalls along SR 99~~			
Traffic and Transportation				
Impact TRAF-1: During construction, the project may result in inadequate emergency access.	**Mitigation Measure TRAF-1:** During construction of the AME, the project sponsor shall be required to provide a minimum number of through lanes and turning lanes open on all existing roadways to accommodate vehicular traffic. Emergency service providers in the City of Atwater, the City of Merced, and Merced County shall be notified throughout the construction phase as to any road closures or detours as lane reductions in existing roadways would impede emergency access.	MCAG in coordination with city/county planning, engineering, and emergency service providers	Ongoing through construction	
Impact TRAF-2: Implementation of the project may result in unacceptable level of operations for intersections and roadways in the project area for horizon-year 2035.	**Mitigation Measure TRAF-2a: Two-Lane Segments AME, between SR 99 and Green Sands Avenue, and Green Sands Avenue, between Buhach Road and AME. The 2-lane segment of AME Phase 1A-Reduced is expected to operate at acceptable level of services (LOS D or better) until 2024 and the 2-lane segment of Green Sands Avenue is expected to operate at acceptable level of services (LOS"D") or better until 2022. It should be noted that the segment LOS for Green Sands Avenue was computed using the Highway Capacity Manual 2-Lane highway analysis procedure. Given the presence of signalized intersections at Buhach Road and the AME, the 2-lane highway measure of effectiveness (percent time spent following) may not be a valid approach under future conditions. Hence, operational performance of this county roadway is more appropriately determined by the operations**	**MCAG and contractor**	**Detailed design phase**	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact TRAF-2, continued.	**of the signalized intersections at Buhach Road and the AME. Both these intersection are shown to meet operational design year requirements.** **Given that the roadway's intersections are shown to meet design year requirements and the stated questionable validity of applying the rural 2-lane highway LOS procedure to this county roadway under future conditions – it is recommended that MCAG consult with the County of Merced to determine appropriate actions (if any) should be taken. At a minimum, it is recommended that these agencies implement a monitoring program to evaluate traffic conditions on this roadway after construction of the AME Phase 1A Reduced to evaluate traffic operations.**			
	Mitigation Measure TRAF-2b: AME/SR99 NB Off-Ramp Intersection. The intersection of AME/SR 99 NB Off-Ramp is projected to operate acceptably as a stop controlled intersection until 2034 (one your shy of the design year). Based on 2035 volumes, this intersection would also satisfy peak hour signal warrants. However, based on simulated results, queue spill-back conditions onto the SR 99 mainline is not projected to occur throughout the design year. A traffic signal shall be considered at this intersection when signal warrants are met.	**MCAG and contractor**	**Detailed design phase**	
Impact TRAF-3: Project construction would require the closure of the SR 99 NB off-ramp and SR 99 SB on-and off-ramps at the Buhach Road Interchange for up to one year's time.	**Mitigation Measure TRAF-3: During construction, provide adequate signage along SR 99 and within the City of Atwater for the rerouting of diverted traffic consistent with the redistribution illustrated in Figure 2 through Figure 4 of the Supplemental Traffic Analysis (Appendix B) during the closure of Buhach Road/SR 99 ramps.**	**MCAG and contractor**	**Detailed design phase and during project construction**	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Noise				
Impact N-1: Project construction would cause a substantial temporary or periodic increase in ambient noise levels, groundborne vibration, and groundborne noise levels in the project vicinity above existing levels.	**Mitigation Measure N-1:** Project Sponsor shall enforce the following actions during construction of the AME: • Noise-generating activities at the construction site or in areas adjacent to the construction site associated with the project in any way shall be restricted to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday. Should it become necessary to work on weekends, holidays, or after 7:00 p.m., residents shall be notified and noise levels for the needed work shall be subject to a special provision that would limit noise levels from construction activities to not exceed 82 dBA at 50 feet. • All internal combustion engine driven equipment shall be outfitted with appropriate intake and exhaust mufflers in good condition. • "Unnecessary" idling of internal combustion engines shall be strictly prohibited. • Staging of construction equipment shall be avoided within 200 feet of residences and all stationary noise-generating construction equipment, such as air compressors and portable power generators, shall be placed as far as practical from existing noise sensitive receivers. Temporary barriers to screen stationary noise generating equipment shall be utilized when located in areas adjoining noise sensitive land uses. • "Quiet" air compressors and other stationary noise sources shall be utilized where technology allows such uses. • All construction traffic to and from the project site shall be routed via designated truck routes. Construction related heavy truck traffic shall be prohibited in residential areas where feasible. Construction truck traffic shall be prohibited in the project vicinity during non-allowed hours. • All adjacent residents to the project site shall be notified of the construction schedule in writing. • A "noise disturbance coordinator" responsible for responding to any local complaints about construction noise shall be	MCAG and contractor	Ongoing through construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact N-1, continued.	designated. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. A telephone number for the disturbance coordinator at the construction site shall be conspicuously posted and included in the notice sent to neighbors regarding the construction schedule. The project sponsor shall be responsible for designating a noise disturbance coordinator and the contractor shall be responsible for posting the phone number and providing construction schedule notices. • If the Avenue One school site is open prior to or during construction of the AME project, grading operations within 500 feet of the schools site shall be coordinated with the school schedule such that major grading activities do not occur at times when school is in session. The grading plans shall indicate which areas are to be avoided to prevent disruption of school activities.			
Impact N-2: Implementation of the AME project would cause a substantial permanent increase in ambient noise levels in the project vicinity and expose persons to noise levels in excess of standards established in the City of Atwater or Merced County General Plans.	**Mitigation Measure N-2:** The project sponsor shall use all available techniques, including the construction of sound walls or earthen berms, and/or the use of quiet paving materials, to reduce exterior noise levels at impacted noise receivers to meet Merced County noise standards. Because of the rural nature of the project study area, it was recommended by Caltrans that a feasibility and reasonable cost allowance study be conducted to evaluate the costs associated with construction of soundwalls compared to the benefit they would provide. This analysis is provided in the noise study (Appendix D). The reasonableness allowance considers the absolute future noise level, the noise level increase caused by the project, the achievable reduction provided by a sound wall, and the age of the dwelling unit. A base reasonable cost allowance of $52,000 per benefited residence (or residential equivalent) was applied. The majority of the sound walls are considered feasible to construct, however, none of the sound walls evaluated would be considered reasonable under FHWA/Caltrans guidelines.	MCAG and contractor	Detailed design phase	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact N-2, continued.	CEQA requires that significant impacts be mitigated to the extent possible and in most locations the use of a final coat of open graded asphalt concrete (OGAC) over the Portland Cement Concrete (PCC) roadway surface would reduce impacts to a less than significant level. The FHWA noise model indicates that there is a difference in noise generation of about 3-dBA between OGAC and PCC pavement types. Given a substantial traffic volume, recent research indicates differences of up to 10 dBA immediately adjacent to roadways. The use of OGAC is far more economical than the construction of sound walls. Therefore, where feasible and where its use would reduce noise levels below county standards, OGAC shall be used as the top layer of paving surface on the AME. Some jurisdictions, including the FHWA, do not recognize the placement of OGAC alone as sufficient mitigation to reduce noise levels. Therefore, under existing guidelines, the paving on state (Caltrans) facilities with OGAC would not be considered adequate mitigation. In these cases, soundwalls shall be constructed to reduce noise levels at receiver locations below County standards.			
Air Quality				
Impact AQ-1: The AME project would result in temporary increases in PM10 emissions requiring compliance with SJVAPCD's Regulation VIII.	**Mitigation Measure AQ-1:** To control the generation of construction-related PM10 emissions, MCAG shall comply with SJVAPCD Regulation VIII, as summarized below: • All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively established of dust emissions using water, chemical stabilizer/suppressant, or covered with a tarp or other suitable cover or vegetative ground cover. • All on-site unpaved roads and offsite-unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.	MCAG and contractor	On going through construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact AQ-1, continued.	• When materials are transported on or 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. • 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). • 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. • 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. • Any site with 150 or more vehicle trips per day shall prevent carryout and trackout. • Limit traffic speeds on unpaved roads to 15 mph; and • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. Conformity with the best management practices established in SJVAPCD's Regulation VIII would limit the generation and release of particulate matter resulting from construction activities. Therefore, any impacts would be less than significant.			

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact AQ-2: The AME project would result in temporary impacts arising from elevated concentrations of PM10 and CO, as well as increased emissions of ROG's and NO2 due to project construction.	**Mitigation Measure AQ-2:** The AME project shall comply with San Joaquin Valley Air Pollution Control District recommended measures as listed below: • Use of alternative fueled or catalyst diesel construction equipment • Minimize idling time (e.g., 10 minute maximum) • Limit the hours of operation of heavy duty equipment and/or the amount of time in use • When feasible replace fossil-fueled equipment with electrically driven equivalent (provided they are not run via a portable generator set) • Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways • Implement activity management (e.g., rescheduling activities to reduce short term impacts) • Comply with Rule 4641 of the SJVAPCD – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations Conformity with the above measures will reduce emissions of PM10 and CO, as well as emissions of ROG's and NO2. Properly managing the amount of time emissions producing equipment is utilized and substituting electrical equipment for fossil fueled equipment whenever feasible, will reduce overall emissions, reducing this impact to a less-than-significant level.	MCAG and contractor	On going through construction	
Impact AQ-3: Construction of the AME project would result in generation of more than two tons of NO2 in non-conformance with SJVAPCD Rule 9510.	**Mitigation Measure AQ-3:** The AME project shall comply with San Joaquin Valley Air Pollution Control District Rule 9510 by achieving: • A 20 percent NO2 and 45 percent PM10 reduction in exhaust emissions compared to the statewide fleet average. This can be met by implementing one or more of the following: • Retrofitting existing equipment with control devices,	MCAG and contractor	During construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact AQ-3, continued.	• Using cleaner fuels, • Operating newer than average equipment, • Payment of a mitigation fee to District to obtain reductions through grant and incentive programs. Compliance with the above requirements will reduce emissions of NO_2 through the utilization of fuels that produce less of this pollutant and maximizing efficient use of fuel through use of newer than average equipment utilizing appropriate control devices. Furthermore, in the event that emissions targets are not met on-site through implementation of the other measures, payment of a mitigation fee to the SJVAPCD would help reduce emissions of NO_2 in other areas of the Air Basin by helping to fund more effective air quality measures elsewhere. Implementation of the above mitigation measures would reduce this impact to a less-than-significant level.			
Geology, Seismicity, and Soils				
Impact GEO-1: During project operation, seismic related-liquefaction and lateral spreading could occur, causing destabilization of roadways, overhead structures and approaches. This could result in damage to the project and create a hazard to people on the roadway structures.	**Mitigation Measure GEO-1:** Further investigation of liquefaction potential (looking at subsurface soil conditions and groundwater conditions) by a qualified geologist, certified by the State of California, shall be performed during the final engineering and design phases of the project, once a final alignment is selected. This investigation shall include a vertical pile capacity analysis which shall consider post-liquefaction settlement. Recommendations given in this investigation shall be consistent with the Caltrans Highway Design Manual. Recommendations of this investigation shall be incorporated into the final project designs and approved by MCAG and Caltrans for work within the State's ROW prior to issuance of permits to construct.	MCAG in coordination with a qualified geotechnical engineer and Caltrans	Detailed design phase	
Impact GEO-2: Seismic ground shaking could damage the project and cause bridge collapse which could harm people in the vicinity, including motorists.	**Mitigation Measure GEO-2:** Once a final alignment is selected for the project, a detailed geotechnical evaluation shall be preformed by a qualified geologist, certified by the State of California. This evaluation shall identify specific areas of concern for seismic ground shaking and provide mitigation measures consistent with the Caltrans Highway Design Manual. Recommended mitigation measures from this	MCAG in coordination with a qualified geotechnical engineer and Caltrans	Detailed design phase	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact GEO-2, continued.	evaluation shall be incorporated into the project design and the seismic design of the project shall be approved by MCAG and Caltrans for improvements within the State's ROW prior to issuance of permits to construct.			
Impact GEO-3: Unstable soils pose a threat to the structural integrity of the project's bridge structures.	**Mitigation Measure GEO-3:** Recommendations on foundation design shall be made in the final geotechnical evaluation, which is to be performed by a qualified geologist, certified by the State of California, during the PS&E phase. Foundation recommendations in the geotechnical evaluation shall be based on further investigation of subsurface conditions and structural design requirements. In is anticipated that recommendations could include design features that would exceed the structural integrity of Standard Class piles. These recommendations shall be approved by Caltrans and MCAG and incorporated into the project.	MCAG in coordination with a qualified geotechnical engineer and Caltrans	Detailed design phase	
Impact GEO-4: In areas where the use of fill material is required, post construction settlement could occur at project embankments since their construction would require fill to be placed on top of existing very stiff silt/sandy silt and very loose to very dense sand silty/sand. Settlement could damage the project structures, which could create hazards to motorists on the expressway.	**Mitigation Measure GEO-4a:** Once a final alignment is selected for the project, a detailed geotechnical evaluation shall be preformed by a qualified geologist certified by the State of California. This study shall address potential post construction settlement at project embankments and shall recommend appropriate mitigation measures consistent with Caltrans design guidelines. Caltrans standard embankment settlement period may be required from 60 days to 90 days depending upon site-specific condition as determined by the geotechnical evaluation.	MCAG in coordination with a qualified geotechnical engineer and Caltrans	Detailed design phase and construction phase as appropriate	
	Mitigation Measure GEO-4b: Embankment fill shall be placed in accordance with the Caltrans Highway Design Manual guidelines, which requires structure approach embankment material to be compacted to a 95 percent relative compaction.	MCAG in coordination with a qualified geotechnical engineer and Caltrans	Detailed design phase and construction phase as appropriate	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact GEO-4, continued.	~~**Mitigation Measure GEO-4c:**~~ ~~Retaining walls needed to retain approach embankments at Route 99 and Santa Fe Drive, and grade separations at the Burlington Northern Railroad and Union Pacific Railroad tracks shall be constructed of either mechanically stabilized earth [MSE] walls (the preferred option) or Caltrans standard cantilever walls. Proper backfill compaction; drainage; adequate bearing capacity; and retaining and grade separation wall type shall be determined by a qualified geologist, certified by the State of California, in the geotechnical evaluation that will be prepared for the project. Recommendations of the geotechnical evaluation shall be implemented and final designs shall be reviewed and approved by MCAG and Caltrans for improvements within the State's ROW prior to the issuance of permits to construct.~~	MCAG in coordination with a qualified geotechnical engineer and Caltrans	Detailed design phase and construction phase as appropriate	
Hydrology, Drainage, and Floodplains				
Impact HWQ-1: Construction activities would increase erosion potential by exposing soils that can be transported into nearby creeks and storm drains with stormwater runoff.	**Mitigation Measure HWQ-1a:** Consistent with requirement of the NPDES program, the project sponsor shall obtain an individual local permit or multiple permits (depending on phasing plan), subject to approval by the RWQCB.	MCAG in coordination with Caltrans	Prior to construction	
	Mitigation Measure HWQ-1b: The project sponsor shall prepare a SWPPP, as required under the individual local permits that will be approved by the RWQCB. A NOI shall be filed under the local permits. To comply with the conditions of these permits, and to address the temporary water quality impacts resulting from the construction activities of this project, a SWPPP will be required before construction.	MCAG in coordination with the RWQCB	Prior to construction	
	Mitigation Measure HWQ-1c: The SWPPP required for this project shall include the following elements: • *Project Description* - Includes maps and other information related to construction activities and potential sources of pollutants.	MCAG in coordination with the RWQCB	Prior to construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact HWQ-1, continued.	• *Minimum Construction Control Measures* - These may include limiting construction access routes, stabilization of areas denuded by construction, and using sediment controls and filtration. The plan will include the design of construction site Best Management Practice (BMP) requirements, per the Caltrans' Project Planning Design Guide and stormwater guidance manuals. • *Erosion and Sediment Control* - The plan is required to contain a description of soil stabilization practices, control measures to prevent a net increase in sediment load in stormwater, controls to reduce tracking sediment onto roads, and controls to reduce wind erosion. • *Non-Storm Water Management* - The plan will include provisions to reduce and control discharges other than stormwater. • *Post-Construction Storm Water Management* - The SWPPP requires the development of stormwater control measures to provide ongoing protection of water resources. The plan will include permanent treatment, pollution prevention, and maintenance BMPs. • *Waste Management and Disposal* - All wastes (including equipment maintenance waste: used oil, batteries) must be disposed of as required by state and federal law. • *Maintenance, Inspection, and Repair* - The plan requires an ongoing program to insure that all controls are in place and operating as designed. • *Monitoring* - This provision requires documented inspections of the control measures. • *Reports* – MCAG will prepare an annual report on the construction project and submit this report to the RWQCB. The report must certify compliance with the SWPPP. • *Training* - Inspections, maintenance and repair must be done by trained personnel.			

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact HWQ-1, continued.	**Mitigation Measure HWQ-1d:** Erosion control measures shall be applied to all exposed areas during construction. Erosion control measures may include the trapping of sediments within the construction area by placing barriers, such as straw bales, at the perimeter of downstream drainage points or by construction of temporary detention basins. Other methods of minimizing erosion impacts may include hydromulching and limiting the amount and length of exposure of graded soil. The temporary erosion control and water quality measures shall be defined in detail in the SWDR and SWPPP.	Contractor	Ongoing during construction	
	Mitigation Measure HWQ-1e: In areas where the proposed roadway alignment would cross creeks and canals, a structure (such as a box culvert) shall be added to convey the flow of water under the roadway. Figure 4.9-3 shows the location of these structures. **Modified Alternative 1B will require four structures across Canal Creek.** ~~Alternative 1A will require one structure across Canal Creek and one structure across Black Rascal Creek. Modified Alternative 1B will require four structures across Canal Creek, one structure across Livingston Canal, and one structure across Black Rascal Creek. The proposed interchange improvements at SR 99 (common to both alternatives) cross Canal Creek four times, two of which require new conveyance structures to be built. Design and flow rates for the conveyance structures will be determined by a final hydraulic report as approved by Merced County.~~ ~~Included in Table 4.9-1 are the temporary control measures that will likely be part of the project.~~ Construction BMPs (as listed in Table 4.9-1) are temporary BMPs that contractors are required to implement to meet BCT/BATEA requirement for construction. The selected temporary BMPs are consistent with the practices required under State of California NPDES General Permit for storm water discharges associated with construction activities. Expressway construction that impacts MID rights-of-way for canals, irrigation laterals, and creeks will require a "construction agreement" and a "joint use agreement" between MID and Merced County. Compliance with the Caltrans statewide NPDES	MCAG and contractor	Detailed design phase	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	and individual local permits and/or agreements should reduce or			
Impact HWQ-1, continued.	avoid potentially substantial construction-related water quality impacts. Implementation details of these mitigation measures shall be developed and incorporated into the project design and operations prior to project construction. With proper implementation of these mitigation measures, short-term or temporary construction-related water quality impacts will be minimized.			
Impact HWQ-2: Spills and leaks of lubricants and other fluids associated with vehicles and equipment used during construction activities would increase the potential for pollution transported by stormwater runoff into nearby creeks and storm drains.	**Mitigation Measure HWQ-2:** Mitigation Measures HWQ-1A through HWQ-1C would reduce construction vehicle and equipment related water pollution to a less than significant level.	MCAG and contractor	Prior to construction, on going during construction, and detailed design phase	
Impact HWQ-3: Pollutants associated with vehicles would be deposited on the roadway during project operation and would be transported by stormwater runoff into nearby creeks and storm drains adversely affecting water quality.	**Mitigation Measure HWQ-3a:** The applicant shall prepare a SWPPP and apply for inclusion in the Caltrans NPDES permit as required under Mitigation Measure HWQ-1A. As required under the NPDES permit, the project will include both Design Pollution Prevention and Treatment BMPs to treat stormwater pollution during project operation.	MCAG in coordination with Caltrans	Prior to construction	
	Mitigation Measure HWQ-3b: When establishing Design Pollution Prevention BMPs for the project, MCAG shall consider all of the following affects: • Downstream Effects Related to Potentially Increased Flow – The project will discharge to unlined channels. As a result, erosion control shall be applied to the ditches. There is the potential for increased sediment loads to be transported to downstream waterways; therefore permanent erosion control measures shall be applied to all new or exposed slopes. The project will cross several waterways, and there may be the potential for creating unstable channel conditions. BMPs will address the stability of channels crossed by the project	MCAG	Prior to construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact HWQ-3, continued.	• Preservation of Existing Vegetation – At all locations, preserving existing vegetation is beneficial. • Concentrated Flow Conveyance Systems – The project will: A) have the potential to cause gullying, B) create or modify existing slopes, C) be subject to roadway flooding, D) require the concentration of surface runoff, and E) require cross drains. Each of these conditions will require the proper design of the following drainage facilities to handle concentrated flows. o Ditches, berms, dikes and swales o Overside drains o Flared end sections o Outlet protection/velocity dissipation devices • Slope/Surface Protection Systems – The project will create or modify existing slopes requiring the application of one or more of the following control measures. o Vegetated surfaces o Hard surfaces			
	Mitigation Measure HWQ-3c: Detention and infiltration devices shall be implemented as approved Treatment BMPs. Soil erosion shall be primarily handled with the proper design of landscaping and the application of final ground treatment BMPs, such as planting and fiber rolls. Detention basins shall also be used to reduce the sediment and particulate matter in stormwater runoff. A detention basin is a permanent treatment BMP designed to reduce the sediment and particulate matter in stormwater runoff. The basin allows a large volume of water to enter, slowly (to prevent erosion), and limits the outflow by having small orifices (or openings) at the lowest point in the structure. Water stops flowing once it reaches a detention basin and over time particulate matter (including various pollutants) falls out of the water to the bottom of the basin Water leaves the basin through a water quality outlet structure that is designed with these orifices. Water is stored in the basin, temporarily, for enough time for pollutants and other	MCAG and contractor	During construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact HWQ-3, continued.	floating sediments to settle, but not enough time for vector control issues (i.e. growth of potential disease-carrying mosquito populations) to develop. The water then is discharged to a discharge point (Canal Creek) through an outflow pipe. The rate at which the water leaves the basin is dependant on the design of the orifices. Generally, water is contained in detention basins for approximately 24 to 72 hours.			
Impact HWQ-4: Development of the AME project would increase pollution in groundwater since pollutants washed off the roadway may percolate into and contaminate groundwater.	**Mitigation Measure HWQ-4a:** The applicant shall prepare a SWPPP and apply for inclusion in the Caltrans NPDES permit as required under Mitigation Measure HWQ-1A, 1B, and 1C. As required under the NPDES permit and discussed under Mitigation Measures HWQ-3B and 3C, the project will include both Design Pollution Prevention and Treatment BMPs required to treat stormwater pollution.	MCAG in coordination with Caltrans	Prior to construction	
	~~**Mitigation Measure HWQ-4b:**~~ ~~If Modified Alternative 1B is selected, groundwater quality testing shall be performed, specifically in the area of the depressed section between Green Sands Avenue and Canal Creek, to verify the presence of groundwater contaminants. If contaminants are present in the groundwater, groundwater treatment shall be required.~~			
Impact HWQ-5: The AME project would convert pervious surface area into impervious surface area which would increase the amount of stormwater runoff in the project study area to a level that would exceed the capacity of existing or planned stormwater drainage systems.	**Mitigation Measure HWQ-5a:** New drainage facilities shall be constructed where needed. New roadside ditches and detention basins will be constructed to accommodated increased stormwater flows. Existing drainage systems may need to be extended or replaced if undersized. The specifications of roadside ditches will be finalized during the final phase of the project, although the ditches must be built with a minimum 4:1 side slope. The use of detention and infiltration basins and BMPs as discussed in Mitigation Measure HWQ-3C will be implemented so that untreated runoff does not adversely affect roadside ditches. Detention basins are proposed at each of the water body crossings either along the main roadway or in the loop areas~~.~~ ~~Fourteen detention basins would be required for Alternative 1A~~ and thirteen detention basins required for Modified Alternative 1B.	MCAG and contractor in coordination with the Merced County Department of Public Works and the Merced Irrigation District	During construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact HWQ-5, continued	The construction of drainage facilities is complicated by the flat terrain and that the elevations of the receiving waters would be higher than the roadside ditches. In order to overcome the drainage challenge presented by minimal difference in elevation, installation of pumps may be required at the end of these ditches in order to drain runoff from the roadside ditches to the existing canals. The design of roadside ditches shall be based on flow data calculations by the design engineer. Final design of roadside ditches shall be approved by the Merced County Department of Public Works and the Merced Irrigation District prior to issuance of the permit to construct. Final Design shall be based on procedures presented in the Caltrans Highway Design Manual, Fifth Edition and the Federal Highway Administration HEC-22 publication for highway pavement drainage.			
	Mitigation Measure HWQ-5b: Detention basins shall be constructed to accommodate runoff resulting from a 25-year, 24-hour storm and to collect any additional flood spill flows from nearby water bodies during major precipitation events. Additional right-of-way would be required at all the proposed outfall locations ranging from approximately 100 to 150 feet of additional right-of-way width from the edge of the pavement. Pumps shall be installed after each detention basin to lift the detained stormwater and to meter the flow that reaches each water body. Final design shall be based on procedures presented in the Caltrans Highway Design Manual, Fifth Edition and the Federal Highway Administration HEC-22 publication for highway pavement drainage and approved by the Merced County Department of Public Works and the Merced Irrigation District prior to issuance of the permit to construct.	MCAG and contractor in coordination with the Merced County Department of Public Works and the Merced Irrigation District	Prior to construction	
~~**Impact HWQ-6:** Development of the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek would impact existing groundwater table due to its potentially high elevation at this location.~~	~~**Mitigation Measure HWQ-6:**~~ ~~Depending on the depth of intrusion into the groundwater table, the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek shall be designed to avoid any intrusion of groundwater into the roadway. To avoid any cross contamination or interference of groundwater movements, an underground impermeable cutoff wall shall be constructed around and below the depressed section. In addition, a reinforced concrete section for the depressed section shall also be designed~~	~~MCAG and contractor~~	~~Detailed Design Phase~~	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	~~to resist uplifting due to groundwater. These elements for the depressed section of Modified Alternative 1B would be evaluated during the design phase of the AME project and a feasible solution would be developed in coordination with the applicable governing agencies.~~			
~~**Impact HWQ-7:** If Modified Alternative 1B is selected, motorists traveling on the depressed section of Alternative 1B between Green Sands Avenue and Canal Creek would be exposed to significant hazards to floods during major precipitation events.~~	~~**Mitigation Measure HWQ-7:**~~ ~~For major precipitation events larger than the 10-year storm event, an alert system shall be installed to warn motorists traveling on the AME of potential hazards to floods within the depressed section of Modified Alternative 1B. Road signage alerting motorists of potential flooding hazards shall be installed south of Green Sands Avenue for northbound motorists and north of Avenue Two for southbound motorists. Flashing lights shall be installed on the roadway signage that would be used if the depressed section of Modified Alternative 1B were to become flooded. In the event that flooding occurs at the depressed section of Modified Alternative 1B, the depressed section of the AME shall be closed to motorists. Traffic shall be diverted onto Green Sands Avenue and Avenue Two and then to local roads between these two points to avoid exposure to hazards to floods in the depressed section of Modified Alternative 1B.~~	~~MCAG~~	~~During construction~~	
Hazards and Hazardous Materials				
Impact HAZ-1: Construction of the project would require demolition of structures that may contain hazardous substances such as lead and asbestos. These substances would potentially threaten workers if not properly handled.	**Mitigation Measure HAZ-1a:** Once a final project alignment is selected, and well before permits to construct are issued, a Phase II testing report shall be completed. The Phase II shall be completed by a qualified hazards specialist as approved by the MCAG. The Phase II shall include, but not be limited to, surveys for asbestos and lead in buildings to be demolished, a work plan for demolition, and soil sampling to determine the amount and type of herbicides and pesticides in the soil from past agricultural uses in the project study area. Phase II study shall include soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and the location and contents of USTs in the project study area to the extent feasible. Soils along the railroad right of way shall be tested for heavy metals, TPH, and PAHs. Tests to be included in the Phase II study are described in Mitigation Measures HAZ-2 to HAZ-6.	MCAG in coordination with a qualified hazards specialist	Detailed Design Phase	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact HAZ-1, continued.	**Mitigation Measure HAZ-1b:** As part of the Phase II study, buildings and structures to be demolished shall be surveyed by a certified asbestos surveyor and tested for lead by an AHERA Accredited Building Inspector. A work plan for demolition will be developed and included in the Phase II report. The recommendations of the Phase II study shall be incorporated into final project plans. Asbestos shall be removed and stored off-site prior to building/structure demolition by experts qualified to identify and remove asbestos. Similarly, Lead based paint will be appropriately contained off-site during the demolition process. Demolition shall comply with the California Department of Occupational Safety and Health (CAL/ OSHA) requirements regarding asbestos and lead paint removal. Asbestos is to be removed from the site and properly disposed of prior to, and as a condition of, the issuing a permit for site demolition.	MCAG in coordination with a qualified environmental professional	Prior to demolition and during detailed design phase as appropriate	
Impact HAZ-2: Grading and earthmoving activities could expose the public or construction workers to heavy metals in the soil from nearby railroad operations.	**Mitigation Measure HAZ-2:** In the event the construction involves installation of footings within the railroad right of way, soils along the railroad right of way shall be tested as part of the Phase II study mentioned in Mitigation Measure HAZ-1 for heavy metals, TPH, and PAHs. This study will be preformed once an alignment is selected for the project and prior to the issuance of permits to construct any portion of the project near the railroad lines. The number of borings and test methods shall be documented in a work plan for the Phase II study. Remediation for these substances shall depend on the contaminant nature, level, and estimated volume of soil contamination. Impacted soils may be capped under the road, treated onsite biologically or via stabilization, or sent offsite to an approved landfill. Remediation measures shall be approved by the MCAG prior to issuance of the permit to construct.	MCAG in coordination with a qualified environmental professional	After an alignment is selected, prior to beginning construction in the vicinity of any railroad.	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact HAZ-3: Grading and earthmoving activities may disturb soils that are potentially contaminated by known or unknown leaking USTs associated with farms in the project study area. Furthermore, if USTs under the project were to be abandoned, they could leak hazardous substances and create risks to human health and the environment over time.	**Mitigation Measure HAZ-3:** Underground storage tanks in the project study area shall be identified during the Phase II study and removed or otherwise mitigated. USTs shall be identified by a trained environmental professional through visual observation during a site visit, in interviews with the property owners, and during review of records at the City of Atwater and or Merced County Health Department. The project engineer shall retain an environmental consultant experienced with UST removal to prepare a plan that addresses proper removal and remediation of USTs and any adjacent contaminated soils that are identified within the proposed right-of-way. The remediation plan shall also provide a strategy for addressing any USTs presently unlisted or otherwise not identified during the Phase II, but that are found during project construction phases. This plan shall be approved by the Merced County or City of Atwater Health Departments, as applicable, prior to issuance of a grading permit. In all cases, any USTs found within the proposed right-of-way shall be safely removed and properly disposed of prior to final grading for the construction of the roadway.	MCAG in coordination with a qualified environmental professional	Detailed design phase	
Impact HAZ-4: Abandoned automobiles and farm equipment may have deposited substances such as TPH, BTEX, MTBE, oil, grease, associated PAHs, and lead into the soil. Abandoned farm equipment may have also leaked pesticides (including arsenic) and herbicides into the soil. Soil contaminants from abandoned automobiles and farm equipment may be present at high enough levels such that during grading and earthmoving activities disruption of the soil would pose a health risk to construction workers and the public.	**Mitigation Measure HAZ-4:** The Phase II study shall conduct soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and remediate any concentrations of hazardous materials appropriately. During the Phase II study the selected alternative shall be superimposed (with the limits of the selected right of way) on the property map to identify and expand upon areas of potential concern. A sampling plan shall be prepared and shall be approved by the Merced County or City of Atwater Health Departments, as applicable. The sampling plan shall include soil sampling around abandoned cars and farm equipment and in agricultural areas to determine the types and levels of contaminants present (if any). Once the sampling plan is approved, soil investigation will be conducted to determine specific impacts to the soil and groundwater, and mitigation measures. Results shall be included in the Phase II study. Recommendations of this study shall be implemented prior to issuance of the permit to construct. State oversight and regulatory approval of cleanup shall occur as necessary.	MCAG in coordination with a qualified environmental professional	Detailed design phase	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact HAZ-4, continued.	Recommendations based on soil sampling shall be developed and incorporated into future plans. Measures may include the removal and offsite disposal of farm equipment, excavation and offsite disposal of impacted soil, and/or onsite capping of contaminated soil underneath the selected route.			
Impact HAZ-5: Grading and earthmoving activities could expose the public or construction workers to hazardous substances in the soil deposited during agricultural processes.	**Mitigation Measure HAZ-5:** See Mitigation Measure HAZ-4 and HAZ-1A. The sampling plan shall also address the level of pesticides and herbicides in the soil from previous agricultural applications.	MCAG in coordination with a qualified environmental professional	Detailed design phase	
Impact HAZ-6: Lighting associated with the project and the storage of hazardous materials during construction could create a safety hazard to the flight school operating at the former Castle Air Force Base since a portion of the project is within several airport compatibility zones.	**Mitigation Measure HAZ-6a:** The developer shall prepare a lighting plan to minimize construction and operational lighting such that it does not interfere with aircraft using the runway at the former Castle Air Force Base. Prior to issuance of a permit to construct the lighting plan shall be approved by MCAG and the CAED and determined to be consistent with Merced County Airport Land Use Compatibility Plan Policy 4.3.5, which does not allow lighting that would distract aircraft from the runway and create landing hazards.	Contractor and MCAG	Detailed design phase	
	~~**Mitigation Measure HAZ-6b:**~~ ~~As required by the Merced County Airport Land Use Compatibility Plan Policy 4.3.2, structures within Compatibility Zone B1 above 35 feet tall require Airport Land Use Commission review.~~	~~MCAG~~	~~Detailed design phase~~	
	~~**Mitigation Measure HAZ-6c:**~~ ~~As required by the Merced County Airport Land Use Compatibility Plan Policy 4.2.4, except for aviation fuel, other aviation-related flammable materials and up to 2,000 gallons of nonaviation flammable materials, the aboveground storage of fuel or hazardous materials shall not occur in airport compatibility zones B1 and B2.~~	~~MCAG~~	~~Detailed design phase~~	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Biological Resources and Wetlands				
Impact BIO-1a: Giant Garter Snake	**Mitigation Measure BIO-1a:** Although there are no modern records for giant garter snakes in Black Rascal Creek or Canal Creek, these creeks provide suitable habitat conditions for this snake. Thus, to ensure that there would be no impacts to this snake during any dewatering activities related to creek realignment and/or construction of road crossings, avoidance measures shall be implemented when construction would be within 200 feet of Black Rascal Creek or Canal Creek. The avoidance and minimization measures are detailed in the Guidelines for Procedures and Timing of Activities Related to the Modification or Relocation of Giant Garter Snake Canal or Stream Habitat and the USFWS Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat (USFWS 1999). In addition, if a giant garter snake is found in the work area, the USFWS shall be notified and the snake will be relocated within the same waterbody, outside of the area of effect.	MCAG and contractor in coordination with a qualified biologist	On going through construction	
Impact BIO-1b: Vernal Pool Fairy Shrimp	**Mitigation Measure BIO-1b:** Mitigation for impacts to vernal pool fairy shrimp (or vernal pool tadpole shrimp) habitat is not be required for this project.	N/A	N/A	
Impact BIO-1c: Hardhead	**Mitigation Measure BIO-1c:** If partial or total dewatering of Black Rascal Creek or Canal Creek is required, a dewatering plan would be reviewed and monitored by a qualified biologist. The dewatering plan will be designed to reduce impacts to hardhead to the greatest extent practicable. Appropriate measures, including the use of mesh screens, seine and dip-nets, will be implemented to salvage and otherwise reduce mortality to this species during active dewatering. Additionally, turbidity barriers will be installed in the work areas within the channels to prevent impacts to water quality downstream. Finally, a biological monitor will be present during all dewatering activities. The biological monitor will capture all native fish species including hardhead and relocate to undisturbed habitat within the same watercourse. This activity will be conducted in consultation and as approved by CDFG.	MCAG in coordination with a qualified biologist	Detailed design phase	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-1d: California Tiger Salamander	**Mitigation Measure BIO-1d:** In order to offset the project's impact to potential California tiger salamander breeding habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation banks that may be available for use at the time of project construction). It is likely that the USFWS will require the applicant to purchase at least three preservation credits for every acre (or portion thereof) of potential breeding habitat impacted by the project (3:1 mitigation ratio). The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project. Prior to project implementation, the project sponsor shall purchase mitigation credits for any impacts. In addition, the USFWS has approved use of the Great Valley Conservation Bank at Flynn Ranch in Merced to jointly mitigate for impacts to California tiger salamander upland estivation/over-summering habitat and San Joaquin kit fox habitat. It is likely that the USFWS will require a 3:1 mitigation ratio for permanent impacts to "suitable" CTS upland estivation/over-summering habitats, and a 1.1: 1 mitigation ratio for temporary impacts to "suitable" CTS upland estivation/over-summering habitats. Once the final alignment is determined, the project sponsor shall purchase the appropriate number of mitigation credits for any impacts. The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project. This mitigation is not in addition to mitigation requirements for San Joaquin kit fox, rather can be combined with any requirement for these species, the greater acreage requirement for any single species being the dominant requirement. Prior to impacting potential California tiger salamander habitats, an "incidental take" permit (Section 7 consultation) would be required from USFWS. The US Army Corps of Engineers would be the Section 7 federal nexus agency for this project.	MCAG	Prior to construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-1e: Western Spadefoot Toad	**Mitigation Measure BIO-1e:** Western spadefoot toads are known to occur at both the Vieira-Sandy Mush Conservation Bank located in Merced and the Great Valley Conservation Bank at Flynn Ranch in Merced. Consequently, it is likely that mitigation credits purchased at either of these mitigation banks to compensate for impacts to potential California tiger salamander breeding habitat would also mitigate the proposed project's impact on potential breeding habitat for the western spadefoot toad. Mitigation credits that are purchased shall be based upon a minimum of a 1:1 compensation to impacts ratio for impacts to 0.69-acre of potential breeding habitat for western spadefoot toad. As this mitigation is not in addition to mitigation requirements for California tiger salamander, provided that a minimum of 0.69 acre of compensation credits are purchased in total for the proposed project, impacts to western spadefoot toad would be regarded as less than significant. Impacts to potential breeding habitat for the western spadefoot toad will be conducted in consultation and as approved by CDFG.	MCAG in coordination with CDFG	Prior to construction	
Impact BIO-1f: Pacific Pond Turtle	**Mitigation Measure BIO-1f:** Turbidity barriers that will be installed around the construction areas in Black Rascal Creek or Canal Creek will reduce impacts to pond turtles that may occur downstream. All Pacific pond turtles encountered during dewatering or other activities in the creeks would be salvaged, per CDFG approval, and relocated to preserved off-site habitats. The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the Pacific pond turtle. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied aquatic habitat and upland nesting habitat within the final project alignment could be impacted by the proposed project. Since avoidance of all potentially occupied habitat is not possible, mitigation would include conducting preconstruction surveys for Pacific pond turtle and avoidance of nest sites. Preconstruction surveys for turtles and their nests shall be conducted 30 days prior to any construction in or surrounding any large primary irrigation canals, creeks, Black Rascal Creek or Canal Creek. If nest sites are located adjacent to a proposed work area, the nest	MCAG in coordination with CDFG and contractor	Prior to and on going through construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-1f, continued.	site plus a 50-foot buffer around the nest site shall be fenced to avoid impacts to the eggs or hatchlings which over-winter at the nest site. In addition, if nest(s) are located during surveys, moth balls (naphthalene) should be sprinkled around the vicinity of the nest (no closer than 10 feet) to mask human scent and discourage predators. Construction at the nest site and within the 50-foot buffer area shall be delayed until the young leave the nest (this could be a period of many months) or as otherwise advised and directed by CDFG, the agency responsible for overseeing the protection of the pond turtle. If CDFG allows translocation of any nestling pond turtles this shall be completed by a qualified biologist under the direction of CDFG. While the measures prescribed above would reduce the impacts to Pacific pond turtles to a level regarded as less than significant pursuant to the CEQA, CDFG may also require mitigation for any impacts to the turtle's habitat following completion of nesting. Any CDFG requirements would become conditions of the project that shall be implemented by the project sponsor. This mitigation is typically at a 1:1 mitigation ratio, or as otherwise determined by CDFG. Mitigation credits shall be purchased from a qualified mitigation bank if required by CDFG. This mitigation measure would reduce impacts to a level regarded as less than significant.			
Impact BIO-1g: Nesting Raptors	**Mitigation Measure BIO-1g:** Nesting surveys shall be conducted in the spring of the year prior to construction of the project and, if construction would commence between March 1 and September 1, again 30 days prior to construction of the project. The raptor nesting surveys shall include examination of all trees and shrubs within the project area and trees and shrubs within sphere of influence of the proposed project. If nesting raptors are identified during the surveys, the dripline of the nest tree or shrub must be fenced with orange construction fencing. In addition, a 300-foot radius buffer must be fenced with orange construction fencing where this buffer intersects the expressway alignment work areas. This 300-foot buffer may be reduced if a qualified raptor biologist determines that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. At a	MCAG in coordination with a qualified biologist and contractor	Prior to construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-1g, continued.	minimum, however, the non-disturbance buffer shall be a radius of 100 feet around the nest tree or shrub. If the nest site is on an adjacent property, the portion of the buffer that occurs on the project site shall be fenced with orange construction fencing. When construction buffers are reduced from the 300 foot radius, a qualified raptor biologist shall monitor distress levels of the nesting birds for one week after project disturbance occurs. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the raptor biologist shall have the right to re-implement the full 300-foot buffer. Instances when the buffer could be reduced in size would be if the raptors were well acclimated to disturbance and/or if there were physical barriers between the nest site and the construction project that would reduce disturbance to the nesting raptors. No construction or earth-moving activity should occur within the non-disturbance buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1. Regardless, the resource agencies consider September 1 the end of the nesting period unless otherwise determined by a qualified raptor biologist. Once the raptors have completed the nesting cycle, that is the young have reached independence of the nest, no further regard for the nest site shall be required. No other compensatory mitigation is required.			
Impact BIO-1h: Swainson's Hawk	**Mitigation Measure BIO-1h:** CDFG has prepared guidelines for conducting surveys for Swainson's hawk entitled: Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (CDFG 2000). These survey recommendations were developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reduce the potential for nest failures as a result of project activities and/or disturbances. To meet the CDFG's recommendations for mitigation and protection of Swainson's hawks in this guideline, surveys should be conducted for a half-mile radius around all project activities and should be completed for at least the two survey periods immediately prior to a project's initiation. The guidelines provide specific	MCAG in coordination with CDFG	Prior to construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-1h, continued.	recommendations regarding the number of surveys based on when the project is scheduled to begin and the time of year the surveys are conducted. If Swainson's hawks are found to be nesting on or in the immediate vicinity of the project area in the future when the proposed project is implemented, consultation with CDFG and mitigation compensation shall be required. At that time, the necessity of acquiring a Fish and Game Section 2081 management authorization should be determined. CDFG has prepared a Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California (CDFG 1994) (hereinafter the Mitigation Guidelines) that prescribes avoidance and mitigation guidelines for impacts to Swainson's hawk nesting and foraging habitats. The Mitigation Guidelines require project sponsors to replace any impacted Swainson's hawk nesting and/or foraging habitat with other suitable Swainson's hawk nesting/foraging habitat. If Swainson's hawks are found to be nesting on or within the area of influence of the project (within 1,000 feet of the project alignment), impacts to nesting Swainson's hawks would be regarded as significant and adverse, and mitigation compensation would be required. The CDFG Mitigation Guidelines states that acceptable mitigation to offset impacts to Swainson's hawk foraging habitat can be met by Fee Title acquisition of Swainson's hawk habitat, or by acquisition of the right to record a conservation easement over lands that can be managed for this hawk species (hereinafter Habitat Management Lands). Any land acquired through Fee Title would have to be donated to a suitable conservation organization for management. In addition to providing Habitat Management Lands, the project sponsor would be assessed a management fee for the long-term management of the Habitat Management Lands by a suitable conservation organization. In lieu of these mitigation measures, as approved by CDFG, the project sponsor may purchase mitigation credits commensurate with the acreage of impacts to foraging and/or nesting habitat at a CDFG approved Swainson's hawk mitigation bank.			

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-1i: Western Burrowing Owl	**Mitigation Measure BIO-1i-1:** A nesting survey shall be conducted for ground nesting raptors, such as western burrowing owl and northern harrier. The burrowing owl survey should be conducted in accordance with the survey requirements detailed in the CDFG's October 17, 1995 Staff Report on Burrowing Owl Mitigation. Surveys shall be conducted in both the breeding season (April 15-July 15) and non-breeding season (December-January) to assess use of the project area by this species. If burrowing owls are present on the project area during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 75 meter (276-foot) buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance within the project area. This 276-foot buffer could be removed once it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest). Typically, the young fledge by August 31. This date may be earlier than August 31, or later, and would have to be determined by a qualified raptor biologist. If northern harriers are identified nesting within the project area, mitigation measures detailed above for nesting raptors should be implemented. Additionally, if burrowing owls are identified nesting onsite and would be affected by the proposed project, an upland mitigation area for burrowing owls shall be established either on- or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls that would be affected by the proposed project, with a minimum of 6.5 acres preserved per pair of owls or single owl that would be affected by the proposed project. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are found to be within the project area, the mitigation requirement shall be 2 x 6.5 = 13 acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be 3 x 6.5 = 19.5 acres). A detailed mitigation and monitoring plan shall be developed for the burrowing owl mitigation area. This plan must be prepared in coordination with CDFG, and approved by this agency. In lieu of	MCAG in coordination with a qualified biologist and CDFG	Prior to construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-1i, continued.	this mitigation measure, as approved by CDFG, credit commensurate with the mitigation acreage requirements set forth above shall be purchased from a qualified burrowing owl mitigation bank.			
	Mitigation Measure BIO-1i-2: Preconstruction surveys of the project area shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted to non-habitat (e.g., graded and developed).	MCAG in coordination with a qualified biologist	No more than 30 days prior to construction	
	Mitigation Measure BIO-1i-3: If western burrowing owls must be passively relocated from the project area to remove them from harms way, these activities shall be approved by CDFG in advance. Passive relocation shall not commence before September 30th and shall be completed prior to February 1st.	MCAG in coordination with a qualified biologist and CDFG	Prior to and during construction	
	Mitigation Measure BIO-1i-4: If an upland mitigation site is designated for burrowing owls, it shall be approved as a suitable burrowing owl mitigation property by CDFG. The preserved area shall be preserved in perpetuity as wildlife habitat via recordation of a conservation easement that designates the California Department of Fish and Game (CDFG), or any other qualified conservation organization as approved by CDFG as the Grantee of the easement.	MCAG with a qualified biologist and CDFG	Prior to construction	
	Mitigation Measure 1i-5: If a conservation easement is established over burrowing owl habitat, an endowment to cover the management of the mitigation area and implementation of the mitigation and monitoring plan shall be provided by the project sponsor to the Grantee of the Conservation Easement prior to issuance of the grading permit.	MCAG	Prior to issuance of the grading permit	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-1j: Common and Special-Status Nesting Passerine Birds	**Mitigation Measure BIO-1j:** A nesting survey shall be conducted 15 days prior to commencing construction work if this work would commence between March 1 and September 1. If special-status birds, such as loggerhead shrike or tricolored blackbirds, are identified nesting within or near the project area, a 200-foot radius around the nest must be staked with bright orange construction fencing. No construction or earth-moving activity shall occur within this 200-foot staked buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by August 1. This date may be earlier than August 1, or later, and would have to be determined by a qualified ornithologist. If common (that is, not special-status) passerine birds (that is, perching birds such as American robins, scrub jays, and northern mockingbird) are identified nesting within the project area, grading activities in the immediate area shall be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the area. Typically, most passerine birds can be expected to complete nesting by July 1, with young attaining sufficient flight skills by early July.	MCAG in coordination with a qualified biologist	15 days prior to construction as necessary	
Impact BIO-1k: San Joaquin Kit Fox	**Mitigation Measure BIO-1k:** In order to offset the project's impact to high and medium quality potential San Joaquin kit fox habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation bank available for use at the time the project is constructed). The USFWS has approved use of this bank to jointly mitigate for impacts to California tiger salamander upland estivation/over-summering habitat and San Joaquin kit fox habitat. Mitigation credits that are purchased to compensate for permanent impacts and for temporary impacts to high and medium quality suitable kit fox habitats. The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project. It is likely that the USFWS will require a 2:1 mitigation ratio for permanent impacts to potential SJKF habitat (for medium and high quality habitat areas only), and a 0.5:1 mitigation ratio for	MCAG in coordination with a qualified biologist and contractor	Prior to construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-1k, continued.	temporary impacts to potential SJKF habitat. Once the final alignment is determined, the project sponsor shall purchase the appropriate number of mitigation credits for any impacts. Finally, avoidance and minimization measures will be implemented by the proposed project to further reduce potential impacts to the San Joaquin kit fox. An employee training program will be conducted before groundbreaking to explain the Federal Endangered Species Act and any endangered species concerns to contractors working in the area. Qualified biologists would then conduct preconstruction den surveys no more than 14 days prior to groundbreaking to ensure that potential kit fox dens are not disrupted during construction of the expressway project. If "potential dens" are located, infrared camera stations will be set up and maintained for 3 consecutive nights at den openings prior to initiation of groundbreaking activities to determine the status of the potential dens. If no kit fox is found to be using the den, groundbreaking activities would proceed unhindered. However, if a kit fox is found using a den site within an area of influence of the expressway project (i.e., within 300 feet of the proposed road alignment), the USFWS will be notified at once. Because timing is an issue, notification would be via a telephone call (and as necessary voice-mail message) to the Chief of Endangered Species in Sacramento, and the Supervisor of Environmental Services at the appropriate CDFG Regional office. If the den is a refuge site only, the project sponsor will seek permission from the USFWS (and CDFG) to passively relocate the fox(es) from the den site prior to the initiation of the groundbreaking activities. As approved, passive relocation will occur over a three day period. Should a den be found that is a natal or pupping den, and it is within an area of influence near the expressway project, the groundbreaking activities would be delayed until such time that biologists can confirm that all kit foxes have left the den site. Once the den has been vacated, an infra red triggered camera would be set at the den opening. The camera would then be checked over a 2-day period to confirm that kit foxes no longer use the den. Once this is verified, grading equipment could be moved into the area and the groundbreaking activities completed. Prior to initiating groundbreaking activities, the vehicle and equipment access routes and work area will be delineated using construction fencing. This will minimize the project-related			

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-1k, continued.	disturbance to potential San Joaquin kit fox habitat to the maximum extent possible. During the groundbreaking activities, all project-related vehicle traffic will be restricted to established roads or access routes, and will observe a 20-mile an hour speed limit within the work areas, except on County roads and highways. A biological monitor will be present during all activities that could result in injury to San Joaquin kit fox. The biologist will have the authority to halt work, if necessary, to protect the kit fox. To prevent harm to San Joaquin kit fox, any steep-walled holes and/or trenches excavated for the project will be completely covered at the end of each workday, or escape ramps will be provided to allow any entrapped animals to escape unharmed. All pipe sections stored at the project site overnight that are four inches in diameter or greater will be inspected for San Joaquin kit fox before the pipes are moved or buried. If San Joaquin kit fox are identified in the work area at any time, the USFWS and/or CDFG will be notified and consulted before work activities resume. All trash items will be removed from the project site to reduce the potential for attracting predators of San Joaquin kit fox. Contractors will be prohibited from bringing firearms and pets to the job site. Prior to impacting San Joaquin kit fox habitat, an "incidental take" permit (Section 7 consultation) would be required from USFWS, and an "incidental take" permit (Section 2081 permit) would be required from CDFG. In lieu of such a permit, CDFG may process a "consistency determination" pursuant to Fish and Game Code §2080.1. Such a determination would indicate that the State's interests in protecting State listed species are met by the federal biological opinion (i.e., the incidental take permit) issued by USFWS and thus no Section 2081 permit is required.			
Impact BIO-1l: California Horned Lizard	**Mitigation Measure BIO-1l:** The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the California horned lizards. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied California horned lizard habitat within the project area could be impacted by the proposed project. Avoidance of potentially occupied upland burrow sites is not possible. The project sponsor will be purchasing mitigation credits	MCAG in coordination with CDFG	Prior to construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-1l, continued.	at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation bank) to mitigate for impacts to San Joaquin kit fox habitat. Since both the San Joaquin kit fox and the California horned lizard require friable soils, it shall be assumed that mitigation land set aside for San Joaquin kit fox could also serve to provide mitigation lands for the California horned lizard. Additional mitigation measures shall include conducting preconstruction surveys for the California horned lizard prior to any site grading. All California horned lizards encountered during site grading would be salvaged, per CDFG approval, and relocated to preserved off-site habitats. Impacts to potential California horned lizard habitat would be conducted in consultation and as approved by CDFG. This mitigation measure would reduce impacts to a level regarded as less than significant.			
Impact BIO-2: Impacts to Jurisdictional Wetlands, Including Waters of the United States and the State of California	**Mitigation Measure BIO-2:** Impacts to waters of the United States and/or State will be reduced to a less-than-significant level through various means, including avoidance, minimization of impacts, and mitigation compensation. Impacts will be minimized by the use of Best Management Practices to protect avoided wetland and "other waters" in the project area, and ensure water quality in the avoided wetlands and other waters within the watershed. These practices can include installing orange construction fencing, hay waddles, and other protective measures around wetlands and other waters. During project-related grading, a biological monitor will be on-site to monitor the integrity of avoided wetlands and other waters. For those wetland areas and other waters that cannot be avoided, a Mitigation and Monitoring Plan will be prepared that will provide a mitigation program to fully compensate for impacts to waters of the United States/State. To compensate for impacts to wetlands and other waters, wetlands and other waters shall be created in areas that are now upland at a 2:1 (mitigation to impacts) ratio and be consistent with requirements set forth by the Corps and the RWQCB. The new wetlands and other waters will resemble those wetlands and other waters affected by the project (known as in-kind replacement).	MCAG in coordination RWQCB, Army Corps of Engineers, contractor and a qualified biologist	Detailed design phase on going through construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-2, continued.	In pool environments that will be impacted by the project, wetland plant/animal populations will be relocated by transferring topsoil from the impacted pools to the re-created pools. These topsoils would contain a seed bank of the impacted pool plant species which would germinate with fall/winter hydration in the re-created pools. The proposed wetland mitigation plan would have to meet normal requirements for mitigating impacts to wetlands and other waters, which include: • Replacement of impacted wetlands and other waters at a 2:1 ratio. For permanent wetland and other waters impacts, wetlands and other waters shall be replaced at a minimum ratio of two acres created for each acre, or fraction thereof that is permanently impacted. • Dedication of the permanently protected areas. The Corps and other regulatory agencies generally require that any new wetlands and other waters created to mitigate project impacts be set aside in a preserve in perpetuity, either through deed restrictions or conservation easements. • Establishment of a five-year monitoring program to monitor the progress of the wetland and other waters mitigation toward an established goal. Success criteria, maintenance and monitoring requirements, contingency measures and a schedule for implementation shall be specified. At the end of each monitoring year, an annual report will be submitted to the Corps, RWQCB and other resource agencies that permitted the project. This report will document the hydrological and vegetative condition of the mitigation wetlands and other waters, and will recommend remedial measures as necessary to correct deficiencies. In lieu of creating compensation wetlands and other waters, as approved by the Corps and RWQCB, the project sponsor may purchase mitigation credits from an approved mitigation bank at a 2:1 ratio or as otherwise specified by the Corps and RWQCB. Aside from the minimum replacement ratio and in perpetuity protection, various regulatory agencies may provide additional conditions and stipulations for permits. No water of the U.S.			

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact BIO-2, continued.	and/or State would be impacted until such time that appropriate permits are acquired for the project from the CDFG, RWQCB, and/or Corps. As proposed, impacts to wetlands and other waters within the project area will require a Section 404 permit from the Corps, authorization from the RWQCB pursuant to Section 401 of the Clean Water Act, an NOI with the SWRCB, and an SBAA from the CDFG. Conditions in permits authorized for the project by these agencies shall become conditions of the project. Implementation of the measures described above would reduce significant impacts to waters of the United States/State to a level considered less than significant pursuant to the CEQA. Any other conditions that are stipulated for wetland impacts by the CDFG, Corps and/or RWQCB shall also become conditions of project approval.			
Paleontological and Cultural Resources				
Impact PALEO-1: Project-related ground disturbance could have adverse impacts on unknown or unrecorded significant paleontological resources, including animal and plant fossil remains.	**Mitigation Measure PALEO-1a:** In the event that paleontological resources are discovered during ground clearing operations, a qualified paleontologist shall establish a monitoring and mitigation program, including preconstruction coordination; construction monitoring; emergency discovery procedures; sampling and data recovery, if needed; preparation, identification, and analysis of the significance of fossil specimens salvaged, if any; museum storage of any specimens and data recovered; and reporting.	MCAG in coordination with a qualified paleontologist	During construction as necessary	
	Mitigation Measure PALEO-1b: Prior to construction, construction personnel involved with earth-moving activity shall be informed of the possibility of excavating paleontological resources and that such resources are protected under certain laws and regulations regarding proper notification procedures. This training should be performed by a qualified paleontologist.	MCAG in coordination with contractor	Prior to construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Impact CULT-1: Project construction would involve subsurface excavation and grading which could result in damage to or destruction of unrecorded archaeological resources, including Native American artifacts and/or human remains.	**Mitigation Measure CULT-1a:** If cultural resources are discovered during earthmoving or soil-disturbing activities, a monitoring program will be implemented to observe, assess, record and recover any important prehistoric features or human remains uncovered.	MCAG	During construction as necessary	
	Mitigation Measure CULT-1b: Provide a qualified, professional archaeological monitor and a qualified Native American observer in accordance with CEQA Guidelines, § 15064.5 (d) in the event that cultural resources are found during removal of the existing built environment during all initial exposure of native soil and during deep utility trenching.	MCAG	During construction as necessary	
	Mitigation Measure CULT-1c: In accordance with CEQA Guidelines, § 15064.5 (e)(1)(A)(B), in the event of the discovery or recognition of any human remains on the project site during development, there shall be no further excavation or disturbance of the site or any area reasonably suspected to overlie adjacent human remains until the coroner of the county in which the remains are discovered is to be contacted to determine that no investigation of the cause of death is required.	MCAG in coordination with a qualified cultural resource specialist and the County	During construction as necessary	
	Mitigation Measure CULT-1d: If the coroner determines the remains to be Native American: • the coroner shall contact the Native American Heritage Commission within 24 hours; • the Native American Heritage Commission shall identify the person or persons it believes to be most likely descended from the deceased Native American; and • the most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code § 5097.98.	MCAG in consultation with the Native American Heritage Commission	During construction as necessary	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
~~**Impact CULT-2:** Construction of the Buhach Road overpass over SR 99 would occur in close proximity to the Buhach Catholic Church, an identified historic resource, potentially resulting in damage to, or destabilization of, the structure.~~	~~**Mitigation Measure CULT-2:**~~ ~~Construction work, including construction staging near the Buhach Church shall not take place within the legal parcel boundary (Assessor Parcel 025-170-001) of the church. Widening of the Buhach Road overpass would necessitate re-grading of the Church driveway but would not impair access to the main entrance of the building. Furthermore, the Church structure itself, which is the historic resource in question, would be unaffected by widening of the Buhach Road overcrossing.~~	~~Contractor~~	~~Construction phase~~	
~~**Impact CULT-3:** If construction of the Buhach Road overpass would require construction activities to occur on the Buhach Catholic Church property, damage to, or destabilization of the Buhach Catholic Church, an identified historic resource, could occur.~~	~~**Mitigation Measure CULT-3:**~~ ~~• The project proponent would develop and implement measures to protect the character-defining features of the Buhach Catholic Church from damage. Such measures would be prepared in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the California Historical Building Code.~~ ~~• Inadvertent damages to the character-defining features of the Buhach Catholic Church would be repaired in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the California Historical Building Code. The building and grounds would be photographed prior to construction establishing a baseline condition for assessing inadvertent damage, as described below.~~	~~MCAG~~	~~During construction as necessary~~	
Utilities and Service Systems				
Impact UTIL-1: Project construction would require the demolition of several structures, including the Buhach Road ~~overcrossing~~ **undercrossing, SR 99 Canal Creek bridges,** and several residential units, as well as the removal of vegetation and soil. This debris and other construction material could affect the capacity and lifespan of local landfills, and affect the ability of Merced County and the City of Atwater to meet its AB 939	**Mitigation Measure UTIL-1:** Prior to construction, MCAG shall prepare a Solid Waste Management Plan for the project that demonstrates that at least 50 percent of project-generated solid waste is being recycled, reused or diverted from landfills. Elements of the Solid Waste Management Plan could include, but are not limited to, the following: • Recycling of metals and other recyclable materials generated during construction. • Regrinding and reuse of the concrete debris generated by demolition of the existing Buhach Road ~~overpass~~ **undercrossing and SR 99 Canal Creek bridges**.	MCAG in coordination with City/County Public Works	Prior to construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
reduction targets.				
Impact UTIL-1, continued.	• Balancing excavated soils by reusing them in other areas, such as for fill around the foundations of elevated project features. • Removed vegetation reused, such as through mulching, or composted at a composting facility. The City of Atwater and Merced County Public Works departments shall approve the Solid Waste Management Plan prior to the issuance of any building permits. Given that the types of solid waste that would be generated are highly recyclable or green waste, such as soil and vegetation, it is anticipated a source reduction rate of 50 percent or higher is easily attainable.			
Impact UTIL-2: Project construction may require utility relocations that cross Canal Creek.	**Mitigation Measure UTIL-2: Prior the relocating utility lines crossing Canal Creek, required permits and approvals shall be obtained from the Central Valley Flood Protection Board.**	**MCAG in coordination with CVFPB.**	**Detailed design phase and during construction**	
Public Services				
Impact PS-1: Emergency responders from the Merced County Fire Department Station 82 on Gurr Road could be delayed or at risk from the signalized intersections proposed for the project, particularly the intersection of North Gurr Road with SR 140 and the AME.	**Mitigation Measure PS-1:** The project sponsor shall be responsible for installation of specialized traffic signal lights at all signalized intersections along the project alignment. These traffic signals shall be controllable by the Fire Department to ensure that fire apparatus may safely cross signalized intersections on a green light and that other traffic at the intersection is stopped by red lights. ~~In addition to the specialized traffic signals, the roadway alignment shall be moved to a further distance from the existing fire station, as shown in Figure 4.14-2. A paved break in the roadway median shall also be provided to ensure adequate fire station access and response times.~~	MCAG in coordination with City/County emergency service providers	Construction phase	
Impact PS-2: The project would result in changes in access to local roadways that could affect emergency service providers by altering the routes that are currently used to respond to service calls. This could	**Mitigation Measure PS-2:** The project sponsor shall provide all emergency service providers in Merced County, and the Cities of Atwater and Merced with detailed information about changes in local roadways. This information can be used by the emergency service providers to update their response plans and to chart new routes to respond to service calls.	MCAG in coordination with City/County emergency service providers	Detailed design phase and during construction	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
adversely affect emergency response times.				
Impact PS-2, continued.	• Prior to any demolition or construction, this information shall be submitted prior to any changes in access. • During construction, this information shall be updated every time a new access connection is completed to inform the service providers that an alternate connection is available. It is assumed that, once constructed, the AME would provide new routes for many of these calls.			
Impact PS-3: Project construction may require detours and lane closures on existing roadways in the project area which may adversely affect EMS, as well as Sheriff, Police, and Fire Department response times.	**Mitigation Measure PS-3:** The project sponsor shall prepare a Traffic Management Plan that ensures coordination between construction contractor(s) and public safety providers to minimize or eliminate interference with provision of police, fire and emergency medical services. Prior to construction, the plan shall be provided to all emergency service providers within the area. Additionally, emergency service providers shall receive advance notice of all necessary lane closures and detours as a result of project construction. This plan shall be approved by the Merced County and City of Atwater Department of Public Works prior to the issuance of permits to construct the project.	MCAG in coordination with City/County Planning, Engineering, and emergency service providers	Detailed design phase	
~~**Impact PS-4:** The AME would be built in close proximity to the proposed Avenue One school site, which could result in unsafe conditions for students traveling by foot or bicycle who would have to get across the AME.~~	~~**Mitigation Measure PS-4a:**~~ ~~Under either alternative, the section of the AME project between SR 99 and Santa Fe Drive, including the proposed intersection of Avenue Two with the AME, shall be constructed in accordance with the FHWA's Safe Route to School guidelines~~ ~~It is anticipated that these guidelines may include requirements for:~~ ~~• Designated crosswalks crossing the AME~~ ~~• Traffic signals equipped with walk/don't walk signals~~ ~~• Bicycle lanes on Avenue One and Avenue Two~~ ~~• School Crossing signage~~ ~~Modified Alternative 1B would cross under Avenue One which would allow vehicles, pedestrians, and bicyclists on Avenue One~~	~~MCAG in consultation with the Atwater Elementary School District~~	~~Prior to beginning construction of Alternative 1B~~	

Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	~~to safely travel over the AME to access the Avenue One school site.~~ ~~Under Alternative 1A, Avenue One would terminate on either side of the AME, ending in cul de sac on the east and west sides of the AME. Individuals traveling to and from the Avenue One school site would be required to travel south to Green Sands Avenue or north to Avenue Two to cross the AME. This would restrict the ability for some students or other individuals to travel to school using alternative transportation, such as walking or bicycling. This would create a conflict with the FHWA's Safe Routes to School guidelines, which are designed to enable and encourage children, including those with disabilities, to walk and bicycle to school and to make bicycling and walking to school a safer and more appealing transportation alternative.~~			
	~~**Mitigation Measure PS-4b:**~~ ~~To provide safe pedestrian and bicycle crossing of Alternative 1A, a pedestrian overpass shall be constructed between the two cul de sacs on Avenue One on the east and west sides of Alternative 1A. Built in accordance with the Safe Route to Schools guidelines, the pedestrian overpass would allow for students to safely cross above the expressway and access the Avenue One school site.~~ ~~The design and configuration of these intersections and the overpass shall be developed in consultation with the AESD and approved by the Merced County Department of Public Works prior to the issuance of permits to construct this portion of Alternative 1A.~~	~~MCAG in consultation with the Atwater Elementary School District~~	~~Prior to beginning construction of Alternative 1B~~	

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CHAPTER 3 ERRATA AND CHANGES

This Chapter notes the revisions and changes to the text of the Recirculated Draft EIR to respond to comments and to correct typographical errors. New text is shown in **bold underline**, while deleted text is shown in ~~strikeout~~.

Chapter 1 Introduction

No changes to Chapter 1, Introduction, were made.

Chapter 2 Executive Summary

No changes to Chapter 2, Executive Summary, were made.

Chapter 3 Project Description

No changes to Chapter 3, Project Description, were made.

Chapter 4 Environmental Setting, Impacts, and Mitigation Measures

Section 4.2, Land Use and Agriculture: Figure 4.2-2, the legend has been revised based on comments received on the March 2008 Draft EIR.

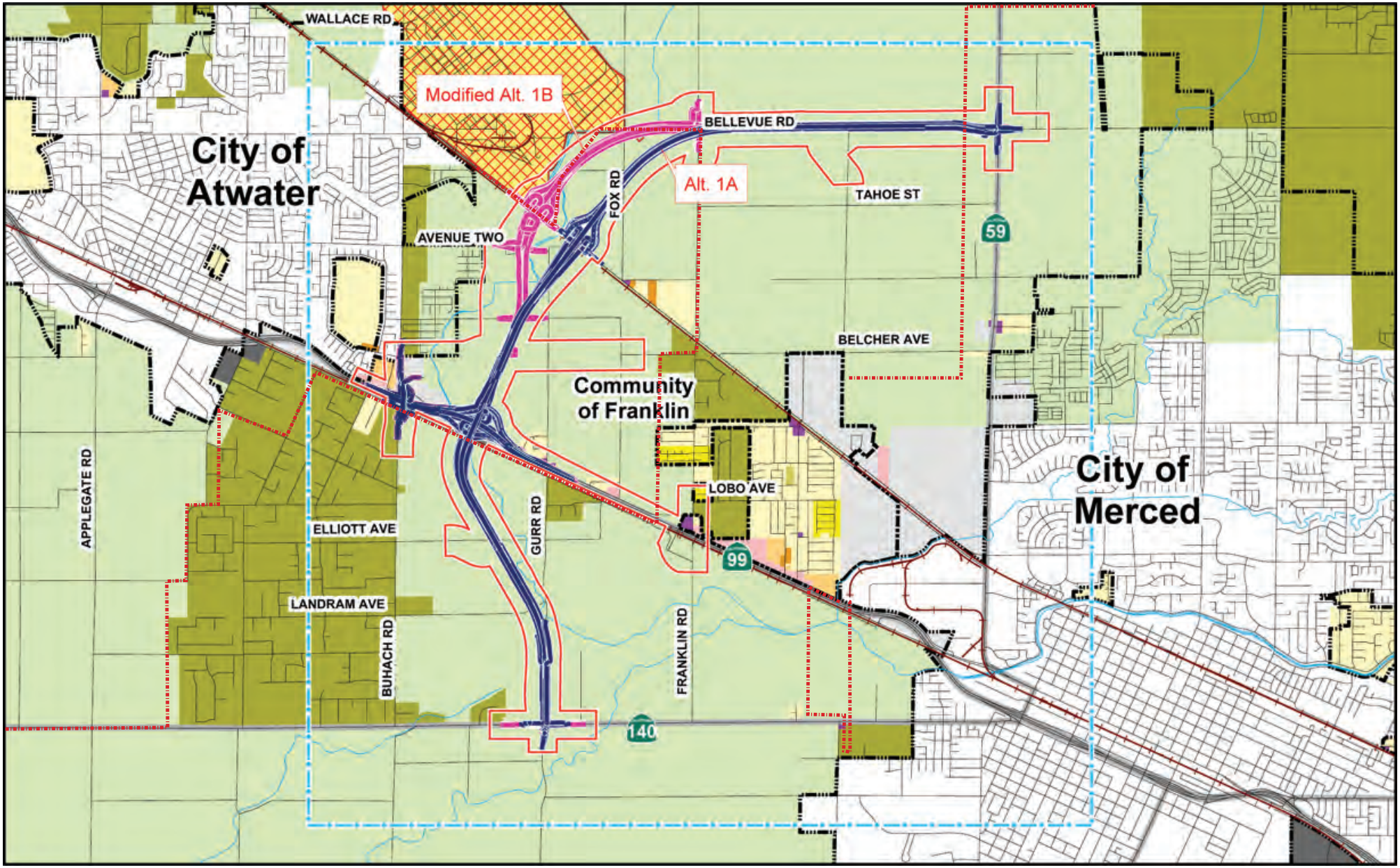
Section 4.13, Utilities and Service Systems: A new paragraph has been added after the second paragraph on page 4.13-2 of the Recirculated Draft EIR, as follows:

The City of Atwater provided as-built plans that confirm that there are also two 14-inch force main wastewater lines within the project area. The wastewater lines extend from the former Castle Air Force Base to the south along Gurr Road. At the intersection of Avenue One and Gurr Road, the two utility lines travel westerly on Avenue One towards the City of Atwater's sewer treatment plant.

Section 4.13, Utilities and Service Systems: New text has been added after the fifth paragraph on page 4.13-5 of the Recirculated Draft EIR, as follows:

Construction of the AME project would be designed such that it would not disrupt existing wastewater utility lines and service in the project area.

If Modified Alternative 1B is selected, the depressed section of the AME between Green Sands Avenue and Canal Creek could interfere with the two existing force main wastewater lines on Avenue One, just west of Gurr Road. The depressed section of Modified Alternative 1B would be built approximately 20 feet below grade. However, as part of project construction, the wastewater lines would be lowered to cross under the depressed section of Modified Alternative 1B. In order to minimize service disruption, the existing force mains would be maintained in operation while the replacement sections are installed. The newly installed wastewater line segments would then be



ATWATER-MERCED EXPRESSWAY

Merced County Zoning Designations

REVISED FIGURE 4.2-2

Source: Merced Data Special Services, Inc., October 2008.

connected to the existing segments on each side of Modified Alternative 1B. As wastewater service disruptions for these two force mains would be minimized, the project's impact to the existing wastewater lines in the project area would be considered less than significant.

Chapter 5 Cumulative Impacts

No changes to Chapter 5, Cumulative Impacts, were made.

Chapter 6 CEQA Required Conclusions

No changes to Chapter 6, CEQA Required Conclusions, were made.

Chapter 7 Alternatives

No changes to Chapter 7, Alternatives, were made.

Chapter 8 List of Preparers

No changes to Chapter 8, List of Preparers, were made.

Chapter 9 References

No changes to Chapter 9, References, were made.

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CHAPTER 4 MITIGATION MONITORING REPORTING PROGRAM

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Land Use and Agriculture					
N/A	N/A	Although the conversion of farmland is considered a less-than-significant impact, MCAG shall mitigate for the loss of agricultural lands in conformance with any countywide program adopted by Merced County prior to the commencement of construction. In the event no such program is in place prior to commencement of construction, the farmland impacts of the AME project should be mitigated by purchasing conservation easements at a 1:1 ratio for impacted farmlands. Under the 1:1 ratio, for every acre of farmland converted by the AME project and equivalent amount of farmland within the County would be placed under conservation easement(s). These conservation easements would ensure that the farmland would be protected in perpetuity for future development.	MCAG	Prior to grading	
Visual Resources					
VIS-1	**Impact VIS-1:** The construction, realignment, and expansion of roadways within the project area could create new sources of daytime and nighttime lighting that could adversely affect day or nighttime views in the area.	**Mitigation Measure VIS-1a:** Lighting at construction sites shall be shielded and shall face downwards at lot lines so as to not be directly visible from any adjoining sensitive uses, such as residential areas, unless required to maintain safe levels of lighting for work and security, and as necessary to meet Occupational Safety and Health Administration (OSHA) standards. **Mitigation Measure VIS-1b:** Street lighting shall incorporate directional shielding so as not to shine directly on residential areas adjacent to the project site.	MCAG and contractor MCAG and contractor	On going through construction Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
VIS-2	**Impact VIS-2:** The removal of existing vegetation within Caltrans facilities could adversely affect existing visual features in these areas.	**Mitigation Measure VIS-2:** Any vegetation removal from within the state right-of-way as a result of the proposed construction activities shall be identified prior to removal and shall be replaced within project limits at a ratio approved by Caltrans. Funds shall be set aside by the project sponsor for replacement highway planting. Replacement highway planting must be installed within two years of damage or removal of the existing planting. A minimum 3-year plant establishment period will be included to assure the success of the replacement highway planting. For any new plantings or plantings within project limits and Caltrans jurisdiction, barriers shall be installed, where possible without compromising motorist safety, in front of vegetation to avoid loss of tree and shrubs from vehicle collisions. During the construction of the project, ESA fencing shall be used to protect existing trees and shrubs will be required.	Contractor in coordination with Caltrans and City/County planning	Detailed design phase, construction and within 2 years of plant removal	
VIS-3	**Impact VIS-3:** The construction and modification of project features within state facilities could be inconsistent with the visual character being implemented along SR 99.	**Mitigation Measure VIS- 3:** Project facilities and features along SR 99 shall be constructed with aesthetic treatments consistent with the design guidelines provided in the Route 99 Corridor Enhancement Master Plan. These design guidelines shall apply to bridges, median plantings and soundwalls on SR 99 within project limits. The aesthetic design shall be approved by Caltrans prior to modification of any state facilities. These aesthetic treatments should be coordinated through the Caltrans Landscape Architecture unit and the Bridge Aesthetics unit at Caltrans Headquarters. This coordination with Caltrans and the incorporation of design features consistent with the Route 99 Corridor Enhancement Master Plan would reduce any impacts related to inconsistent visual features to a less-than-significant level. Required design features are likely to include aesthetics treatments such as: • Extended Gore Paving • Color or architectural concrete barrier used on bridge structures	Contractor in coordination with City planning and Caltrans	Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		• Color or texture on slope paving under a bridge abutment • Color or arch work on the bridge fence • Use of aesthetic treatments on new soundwalls along SR 99			
Traffic and Transportation					
TRAF-1	**Impact TRAF-1:** During construction, the project may result in inadequate emergency access.	**Mitigation Measure TRAF-1:** During construction of the AME, the project sponsor shall be required to provide a minimum number of through lanes and turning lanes open on all existing roadways to accommodate vehicular traffic. Emergency service providers in the City of Atwater, the City of Merced, and Merced County shall be notified throughout the construction phase as to any road closures or detours as lane reductions in existing roadways would impede emergency access.	MCAG in coordination with city/county planning, engineering, and emergency service providers	Ongoing through construction	
Noise					
N-1	**Impact N-1:** Project construction would cause a substantial temporary or periodic increase in ambient noise levels, groundborne vibration, and groundborne noise levels in the project vicinity above existing levels.	**Mitigation Measure N-1:** Project Sponsor shall enforce the following actions during construction of the AME: • Noise-generating activities at the construction site or in areas adjacent to the construction site associated with the project in any way shall be restricted to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday. Should it become necessary to work on weekends, holidays, or after 7:00 p.m., residents shall be notified and noise levels for the needed work shall be subject to a special provision that would limit noise levels from construction activities to not exceed 82 dBA at 50 feet. • All internal combustion engine driven equipment shall be outfitted with appropriate intake and exhaust mufflers in good condition. • "Unnecessary" idling of internal combustion engines shall be strictly prohibited. • Staging of construction equipment shall be avoided within 200 feet of residences and all stationary noise-generating construction equipment, such as air compressors and portable power generators, shall be	MCAG and contractor	Ongoing through construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		placed as far as practical from existing noise sensitive receivers. Temporary barriers to screen stationary noise generating equipment shall be utilized when located in areas adjoining noise sensitive land uses. • "Quiet" air compressors and other stationary noise sources shall be utilized where technology allows such uses. • All construction traffic to and from the project site shall be routed via designated truck routes. Construction related heavy truck traffic shall be prohibited in residential areas where feasible. Construction truck traffic shall be prohibited in the project vicinity during non-allowed hours. • All adjacent residents to the project site shall be notified of the construction schedule in writing. • A "noise disturbance coordinator" responsible for responding to any local complaints about construction noise shall be designated. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. A telephone number for the disturbance coordinator at the construction site shall be conspicuously posted and included in the notice sent to neighbors regarding the construction schedule. The project sponsor shall be responsible for designating a noise disturbance coordinator and the contractor shall be responsible for posting the phone number and providing construction schedule notices. • If the Avenue One school site is open prior to or during construction of the AME project, grading operations within 500 feet of the schools site shall be coordinated with the school schedule such that major grading activities do not occur at times when school is in session. The grading plans shall indicate which areas are to be avoided to prevent disruption of school activities.			
N-2	**Impact N-2:** Implementation of the AME project would cause a	**Mitigation Measure N-2:** The project sponsor shall use all available techniques,	MCAG and contractor	Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	substantial permanent increase in ambient noise levels in the project vicinity and expose persons to noise levels in excess of standards established in the City of Atwater or Merced County General Plans.	including the construction of sound walls or earthen berms, and/or the use of quiet paving materials, to reduce exterior noise levels at impacted noise receivers to meet Merced County noise standards. Because of the rural nature of the project study area, it was recommended by Caltrans that a feasibility and reasonable cost allowance study be conducted to evaluate the costs associated with construction of soundwalls compared to the benefit they would provide. This analysis is provided in the noise study (Appendix D). The reasonableness allowance considers the absolute future noise level, the noise level increase caused by the project, the achievable reduction provided by a sound wall, and the age of the dwelling unit. A base reasonable cost allowance of $52,000 per benefited residence (or residential equivalent) was applied. The majority of the sound walls are considered feasible to construct, however, none of the sound walls evaluated would be considered reasonable under FHWA/Caltrans guidelines. CEQA requires that significant impacts be mitigated to the extent possible and in most locations the use of a final coat of open graded asphalt concrete (OGAC) over the Portland Cement Concrete (PCC) roadway surface would reduce impacts to a less than significant level. The FHWA noise model indicates that there is a difference in noise generation of about 3-dBA between OGAC and PCC pavement types. Given a substantial traffic volume, recent research indicates differences of up to 10 dBA immediately adjacent to roadways. The use of OGAC is far more economical than the construction of sound walls. Therefore, where feasible and where its use would reduce noise levels below county standards, OGAC shall be used as the top layer of paving surface on the AME. Some jurisdictions, including the FHWA, do not recognize the placement of OGAC alone as sufficient mitigation to reduce noise levels. Therefore, under existing guidelines, the paving on state (Caltrans) facilities with OGAC would not be considered adequate mitigation. In these cases,			

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		soundwalls shall be constructed to reduce noise levels at receiver locations below County standards.			
Air Quality					
AQ-1	**Impact AQ-1:** The AME project would result in temporary increases in PM10 emissions requiring compliance with SJVAPCD's Regulation VIII.	**Mitigation Measure AQ-1:** To control the generation of construction-related PM10 emissions, MCAG shall comply with SJVAPCD Regulation VIII, as summarized below: • All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively established of dust emissions using water, chemical stabilizer/suppressant, or covered with a tarp or other suitable cover or vegetative ground cover. • All on-site unpaved roads and offsite-unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. • When materials are transported on or 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. • 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). • 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. • Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site	MCAG and contractor	On going through construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		and at the end of each workday. • Any site with 150 or more vehicle trips per day shall prevent carryout and trackout. • Limit traffic speeds on unpaved roads to 15 mph; and • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. Conformity with the best management practices established in SJVAPCD's Regulation VIII would limit the generation and release of particulate matter resulting from construction activities. Therefore, any impacts would be less than significant.			
AQ-2	**Impact AQ-2:** The AME project would result in temporary impacts arising from elevated concentrations of PM10 and CO, as well as increased emissions of ROG's and NO2 due to project construction.	**Mitigation Measure AQ-2:** The AME project shall comply with San Joaquin Valley Air Pollution Control District recommended measures as listed below: • Use of alternative fueled or catalyst diesel construction equipment • Minimize idling time (e.g., 10 minute maximum) • Limit the hours of operation of heavy duty equipment and/or the amount of time in use • When feasible replace fossil-fueled equipment with electrically driven equivalent (provided they are not run via a portable generator set) • Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways • Implement activity management (e.g., rescheduling activities to reduce short term impacts) • Comply with Rule 4641 of the SJVAPCD – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations	MCAG and contractor	On going through construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		Conformity with the above measures will reduce emissions of PM10 and CO, as well as emissions of ROG's and NO2. Properly managing the amount of time emissions producing equipment is utilized and substituting electrical equipment for fossil fueled equipment whenever feasible, will reduce overall emissions, reducing this impact to a less-than-significant level.			
AQ-3	**Impact AQ-3:** Construction of the AME project would result in generation of more than two tons of NO2 in non-conformance with SJVAPCD Rule 9510.	**Mitigation Measure AQ-3:** The AME project shall comply with San Joaquin Valley Air Pollution Control District Rule 9510 by achieving: • A 20 percent NO2 and 45 percent PM10 reduction in exhaust emissions compared to the statewide fleet average. This can be met by implementing one or more of the following: • Retrofitting existing equipment with control devices, • Using cleaner fuels, • Operating newer than average equipment, • Payment of a mitigation fee to District to obtain reductions through grant and incentive programs. Compliance with the above requirements will reduce emissions of NO2 through the utilization of fuels that produce less of this pollutant and maximizing efficient use of fuel through use of newer than average equipment utilizing appropriate control devices. Furthermore, in the event that emissions targets are not met on-site through implementation of the other measures, payment of a mitigation fee to the SJVAPCD would help reduce emissions of NO2 in other areas of the Air Basin by helping to fund more effective air quality measures elsewhere. Implementation of the above mitigation measures would reduce this impact to a less-than-significant level.	MCAG and contractor	During construction	
Geology, Seismicity, and Soils					
GEO-1	**Impact GEO-1:** During project operation, seismic related-liquefaction and lateral spreading could occur, causing	**Mitigation Measure GEO-1:** Further investigation of liquefaction potential (looking at subsurface soil conditions and groundwater conditions) by a qualified geologist, certified by the State of California, shall	MCAG in coordination with a qualified geotechnical	Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	destabilization of roadways, overhead structures and approaches. This could result in damage to the project and create a hazard to people on the roadway structures.	be performed during the final engineering and design phases of the project, once a final alignment is selected. This investigation shall include a vertical pile capacity analysis which shall consider post-liquefaction settlement. Recommendations given in this investigation shall be consistent with the Caltrans Highway Design Manual. Recommendations of this investigation shall be incorporated into the final project designs and approved by MCAG and Caltrans for work within the State's ROW prior to issuance of permits to construct.	engineer and Caltrans		
GEO-2	**Impact GEO-2:** Seismic ground shaking could damage the project and cause bridge collapse which could harm people in the vicinity, including motorists.	**Mitigation Measure GEO-2:** Once a final alignment is selected for the project, a detailed geotechnical evaluation shall be preformed by a qualified geologist, certified by the State of California. This evaluation shall identify specific areas of concern for seismic ground shaking and provide mitigation measures consistent with the Caltrans Highway Design Manual. Recommended mitigation measures from this evaluation shall be incorporated into the project design and the seismic design of the project shall be approved by MCAG and Caltrans for improvements within the State's ROW prior to issuance of permits to construct.	MCAG in coordination with a qualified geotechnical engineer and Caltrans	Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
GEO-3	**Impact GEO-3:** Unstable soils pose a threat to the structural integrity of the project's bridge structures.	**Mitigation Measure GEO-3:** Recommendations on foundation design shall be made in the final geotechnical evaluation, which is to be performed by a qualified geologist, certified by the State of California, during the PS&E phase. Foundation recommendations in the geotechnical evaluation shall be based on further investigation of subsurface conditions and structural design requirements. In is anticipated that recommendations could include design features that would exceed the structural integrity of Standard Class piles. These recommendations shall be approved by Caltrans and MCAG and incorporated into the project.	MCAG in coordination with a qualified geotechnical engineer and Caltrans	Detailed design phase	
GEO-4	**Impact GEO-4:** In areas where the use of fill material is required, post construction settlement could occur at project embankments since their construction would require fill to be placed on top of existing very stiff silt/sandy silt and very loose to very dense sand silty/sand. Settlement could damage the project structures, which could create hazards to motorists on the expressway.	**Mitigation Measure GEO-4a:** Once a final alignment is selected for the project, a detailed geotechnical evaluation shall be preformed by a qualified geologist certified by the State of California. This study shall address potential post construction settlement at project embankments and shall recommend appropriate mitigation measures consistent with Caltrans design guidelines. Caltrans standard embankment settlement period may be required from 60 days to 90 days depending upon site-specific condition as determined by the geotechnical evaluation. **Mitigation Measure GEO-4b:** Embankment fill shall be placed in accordance with the Caltrans Highway Design Manual guidelines, which requires structure approach embankment material to be compacted to a 95 percent relative compaction. **Mitigation Measure GEO-4c:** Retaining walls needed to retain approach embankments at Route 99 and Santa Fe Drive, and grade separations at the Burlington Northern Railroad and Union Pacific Railroad tracks shall be constructed of either mechanically stabilized earth [MSE] walls (the preferred option) or Caltrans standard cantilever walls. Proper backfill compaction; drainage; adequate bearing capacity; and retaining and grade separation wall type shall be determined by a qualified geologist, certified by the State of California, in the geotechnical evaluation that will be prepared for the project.	MCAG in coordination with a qualified geotechnical engineer and Caltrans	Detailed design phase and construction phase as appropriate	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		Recommendations of the geotechnical evaluation shall be implemented and final designs shall be reviewed and approved by MCAG and Caltrans for improvements within the State's ROW prior to the issuance of permits to construct.			
Hydrology, Drainage, and Floodplains					
HWQ-1	**Impact HWQ-1:** Construction activities would increase erosion potential by exposing soils that can be transported into nearby creeks and storm drains with stormwater runoff.	**Mitigation Measure HWQ-1a:** Consistent with requirement of the NPDES program, the project sponsor shall obtain an individual local permit or multiple permits (depending on phasing plan), subject to approval by the RWQCB. **Mitigation Measure HWQ-1b:** The project sponsor shall prepare a SWPPP, as required under the individual local permits that will be approved by the RWQCB. A NOI shall be filed under the local permits. To comply with the conditions of these permits, and to address the temporary water quality impacts resulting from the construction activities of this project, a SWPPP will be required before construction. **Mitigation Measure HWQ-1c:** The SWPPP required for this project shall include the following elements: • *Project Description* - Includes maps and other information related to construction activities and potential sources of pollutants. • *Minimum Construction Control Measures* - These may include limiting construction access routes, stabilization of areas denuded by construction, and using sediment controls and filtration. The plan will include the design of construction site Best Management Practice (BMP) requirements, per the Caltrans' Project Planning Design Guide and stormwater guidance manuals. • *Erosion and Sediment Control* - The plan is required to contain a description of soil stabilization practices, control measures to prevent a net increase in sediment load in stormwater, controls to reduce tracking sediment onto roads, and controls to reduce wind erosion.	MCAG in coordination with Caltrans MCAG in coordination with the RWQCB MCAG in coordination with the RWQCB	Prior to construction Prior to construction Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		• *Non-Storm Water Management* - The plan will include provisions to reduce and control discharges other than stormwater. • *Post-Construction Storm Water Management* - The SWPPP requires the development of stormwater control measures to provide ongoing protection of water resources. The plan will include permanent treatment, pollution prevention, and maintenance BMPs. • *Waste Management and Disposal* - All wastes (including equipment maintenance waste: used oil, batteries) must be disposed of as required by state and federal law. • *Maintenance, Inspection, and Repair* - The plan requires an ongoing program to insure that all controls are in place and operating as designed. • *Monitoring* - This provision requires documented inspections of the control measures. • *Reports* – MCAG will prepare an annual report on the construction project and submit this report to the RWQCB. The report must certify compliance with the SWPPP. • *Training* - Inspections, maintenance and repair must be done by trained personnel. **Mitigation Measure HWQ-1d:** Erosion control measures shall be applied to all exposed areas during construction. Erosion control measures may include the trapping of sediments within the construction area by placing barriers, such as straw bales, at the perimeter of downstream drainage points or by construction of temporary detention basins. Other methods of minimizing erosion impacts may include hydromulching and limiting the amount and length of exposure of graded soil. The temporary erosion control and water quality measures shall be defined in detail in the SWDR and SWPPP. **Mitigation Measure HWQ-1e:** In areas where the proposed roadway alignment would cross creeks and canals, a structure (such as a box culvert)	Contractor	Ongoing during construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		shall be added to convey the flow of water under the roadway. Figure 4.9-3 shows the location of these structures. Alternative 1A will require one structure across Canal Creek and one structure across Black Rascal Creek. Modified Alternative 1B will require four structures across Canal Creek, one structure across Livingston Canal, and one structure across Black Rascal Creek. The proposed interchange improvements at SR 99 (common to both alternatives) cross Canal Creek four times, two of which require new conveyance structures to be built. Design and flow rates for the conveyance structures will be determined by a final hydraulic report as approved by Merced County. Included in Table 4.9-1 are the temporary control measures that will likely be part of the project. Construction BMPs (as listed in Table 4.9-1) are temporary BMPs that contractors are required to implement to meet BCT/BATEA requirement for construction. The selected temporary BMPs are consistent with the practices required under State of California NPDES General Permit for storm water discharges associated with construction activities. Expressway construction that impacts MID rights-of-way for canals, irrigation laterals, and creeks will require a "construction agreement" and a "joint use agreement" between MID and Merced County. Compliance with the Caltrans statewide NPDES and individual local permits and/or agreements should reduce or avoid potentially substantial construction-related water quality impacts. Implementation details of these mitigation measures shall be developed and incorporated into the project design and operations prior to project construction. With proper implementation of these mitigation measures, short-term or temporary construction-related water quality impacts will be minimized.	MCAG and contractor	Detailed design phase	
HWQ-2	**Impact HWQ-2:** Spills and leaks of lubricants and other fluids associated with vehicles and equipment used during construction activities would increase the potential for pollution transported by	**Mitigation Measure HWQ-2:** Mitigation Measures HWQ-1A through HWQ-1C would reduce construction vehicle and equipment related water pollution to a less than significant level.	MCAG and contractor	Prior to construction, on going during construction, and detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	stormwater runoff into nearby creeks and storm drains.				
HWQ-3	**Impact HWQ-3:** Pollutants associated with vehicles would be deposited on the roadway during project operation and would be transported by stormwater runoff into nearby creeks and storm drains adversely affecting water quality.	**Mitigation Measure HWQ-3a:** The applicant shall prepare a SWPPP and apply for inclusion in the Caltrans NPDES permit as required under Mitigation Measure HWQ-1A. As required under the NPDES permit, the project will include both Design Pollution Prevention and Treatment BMPs to treat stormwater pollution during project operation. **Mitigation Measure HWQ-3b:** When establishing Design Pollution Prevention BMPs for the project, MCAG shall consider all of the following affects: • Downstream Effects Related to Potentially Increased Flow – The project will discharge to unlined channels. As a result, erosion control shall be applied to the ditches. There is the potential for increased sediment loads to be transported to downstream waterways; therefore permanent erosion control measures shall be applied to all new or exposed slopes. The project will cross several waterways, and there may be the potential for creating unstable channel conditions. BMPs will address the stability of channels crossed by the project • Preservation of Existing Vegetation – At all locations, preserving existing vegetation is beneficial. • Concentrated Flow Conveyance Systems – The project will: A) have the potential to cause gullying, B) create or modify existing slopes, C) be subject to roadway flooding, D) require the concentration of surface runoff, and E) require cross drains. Each of these conditions will require the proper design of the following drainage facilities to handle concentrated flows. o Ditches, berms, dikes and swales o Overside drains o Flared end sections o Outlet protection/velocity dissipation devices • Slope/Surface Protection Systems – The project will	MCAG in coordination with Caltrans MCAG	Prior to construction Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		create or modify existing slopes requiring the application of one or more of the following control measures. o Vegetated surfaces o Hard surfaces **Mitigation Measure HWQ-3c:** Detention and infiltration devices shall be implemented as approved Treatment BMPs. Soil erosion shall be primarily handled with the proper design of landscaping and the application of final ground treatment BMPs, such as planting and fiber rolls. Detention basins shall also be used to reduce the sediment and particulate matter in stormwater runoff. A detention basin is a permanent treatment BMP designed to reduce the sediment and particulate matter in stormwater runoff. The basin allows a large volume of water to enter, slowly (to prevent erosion), and limits the outflow by having small orifices (or openings) at the lowest point in the structure. Water stops flowing once it reaches a detention basin and over time particulate matter (including various pollutants) falls out of the water to the bottom of the basin Water leaves the basin through a water quality outlet structure that is designed with these orifices. Water is stored in the basin, temporarily, for enough time for pollutants and other floating sediments to settle, but not enough time for vector control issues (i.e. growth of potential disease-carrying mosquito populations) to develop. The water then is discharged to a discharge point (Canal Creek) through an outflow pipe. The rate at which the water leaves the basin is dependant on the design of the orifices. Generally, water is contained in detention basins for approximately 24 to 72 hours.	MCAG and contractor	During construction	
HWQ-4	**Impact HWQ-4:** Development of the AME project would increase pollution in groundwater since pollutants washed off the roadway may percolate into and contaminate groundwater.	**Mitigation Measure HWQ-4a:** The applicant shall prepare a SWPPP and apply for inclusion in the Caltrans NPDES permit as required under Mitigation Measure HWQ-1A, 1B, and 1C. As required under the NPDES permit and discussed under Mitigation Measures HWQ-3B and 3C, the project will include both Design Pollution Prevention and Treatment BMPs required	MCAG in coordination with Caltrans	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		to treat stormwater pollution. **Mitigation Measure HWQ-4b:** If Modified Alternative 1B is selected, groundwater quality testing shall be performed, specifically in the area of the depressed section between Green Sands Avenue and Canal Creek, to verify the presence of groundwater contaminants. If contaminants are present in the groundwater, groundwater treatment shall be required.			
HWQ-5	**Impact HWQ-5**: The AME project would convert pervious surface area into impervious surface area which would increase the amount of stormwater runoff in the project study area to a level that would exceed the capacity of existing or planned stormwater drainage systems.	**Mitigation Measure HWQ-5a:** New drainage facilities shall be constructed where needed. New roadside ditches and detention basins will be constructed to accommodated increased stormwater flows. Existing drainage systems may need to be extended or replaced if undersized. The specifications of roadside ditches will be finalized during the final phase of the project, although the ditches must be built with a minimum 4:1 side slope. The use of detention and infiltration basins and BMPs as discussed in Mitigation Measure HWQ-3C will be implemented so that untreated runoff does not adversely affect roadside ditches. Detention basins are proposed at each of the water body crossings either along the main roadway or in the loop areas. Fourteen detention basins would be required for Alternative 1A and thirteen detention basins required for Modified Alternative 1B. The construction of drainage facilities is complicated by the flat terrain and that the elevations of the receiving waters would be higher than the roadside ditches. In order to overcome the drainage challenge presented by minimal difference in elevation, installation of pumps may be required at the end of these ditches in order to drain runoff from the roadside ditches to the existing canals. The design of roadside ditches shall be based on flow data calculations by the design engineer. Final design of roadside ditches shall be approved by the Merced County Department of Public Works and the Merced Irrigation District prior to issuance of the permit to construct. Final	MCAG and contractor in coordination with the Merced County Department of Public Works and the Merced Irrigation District	During construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		Design shall be based on procedures presented in the Caltrans Highway Design Manual, Fifth Edition and the Federal Highway Administration HEC-22 publication for highway pavement drainage. **Mitigation Measure HWQ-5b:** Detention basins shall be constructed to accommodate runoff resulting from a 25-year, 24-hour storm and to collect any additional flood spill flows from nearby water bodies during major precipitation events. Additional right-of-way would be required at all the proposed outfall locations ranging from approximately 100 to 150 feet of additional right-of-way width from the edge of the pavement. Pumps shall be installed after each detention basin to lift the detained stormwater and to meter the flow that reaches each water body. Final design shall be based on procedures presented in the Caltrans Highway Design Manual, Fifth Edition and the Federal Highway Administration HEC-22 publication for highway pavement drainage and approved by the Merced County Department of Public Works and the Merced Irrigation District prior to issuance of the permit to construct.	MCAG and contractor in coordination with the Merced County Department of Public Works and the Merced Irrigation District	Prior to construction	
HWQ-6	**Impact HWQ-6:** Development of the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek would impact existing groundwater table due to its potentially high elevation at this location.	**Mitigation Measure HWQ-6:** Depending on the depth of intrusion into the groundwater table, the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek shall be designed to avoid any intrusion of groundwater into the roadway. To avoid any cross contamination or interference of groundwater movements, an underground impermeable cutoff wall shall be constructed around and below the depressed section. In addition, a reinforced concrete section for the depressed section shall also be designed to resist uplifting due to groundwater. These elements for the depressed section of Modified Alternative 1B would be evaluated during the design phase of the AME project and a feasible solution would be developed in coordination with the applicable governing agencies.	MCAG and contractor	Detailed Design Phase	
HWQ-7	**Impact HWQ-7:** If Modified Alternative 1B is selected, motorists traveling on the depressed section of	**Mitigation Measure HWQ-7:** For major precipitation events larger than the 10-year storm event, an alert system shall be installed to warn motorists traveling on the AME of potential hazards to floods within	MCAG	During construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	Alternative 1B between Green Sands Avenue and Canal Creek would be exposed to significant hazards to floods during major precipitation events.	the depressed section of Modified Alternative 1B. Road signage alerting motorists of potential flooding hazards shall be installed south of Green Sands Avenue for northbound motorists and north of Avenue Two for southbound motorists. Flashing lights shall be installed on the roadway signage that would be used if the depressed section of Modified Alternative 1B were to become flooded. In the event that flooding occurs at the depressed section of Modified Alternative 1B, the depressed section of the AME shall be closed to motorists. Traffic shall be diverted onto Green Sands Avenue and Avenue Two and then to local roads between these two points to avoid exposure to hazards to floods in the depressed section of Modified Alternative 1B.			
Hazards and Hazardous Materials					
HAZ-1	**Impact HAZ-1:** Construction of the project would require demolition of structures that may contain hazardous substances such as lead and asbestos. These substances would potentially threaten workers if not properly handled.	**Mitigation Measure HAZ-1a:** Once a final project alignment is selected, and well before permits to construct are issued, a Phase II testing report shall be completed. The Phase II shall be completed by a qualified hazards specialist as approved by the MCAG. The Phase II shall include, but not be limited to, surveys for asbestos and lead in buildings to be demolished, a work plan for demolition, and soil sampling to determine the amount and type of herbicides and pesticides in the soil from past agricultural uses in the project study area. Phase II study shall include soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and the location and contents of USTs in the project study area to the extent feasible. Soils along the railroad right of way shall be tested for heavy metals, TPH, and PAHs. Tests to be included in the Phase II study are described in Mitigation Measures HAZ-2 to HAZ-6. **Mitigation Measure HAZ-1b:** As part of the Phase II study, buildings and structures to be demolished shall be surveyed by a certified asbestos surveyor and tested for lead by an AHERA Accredited Building Inspector. A work plan for demolition will be developed and included in the Phase II report. The recommendations of the Phase II study shall be	MCAG in coordination with a qualified hazards specialist MCAG in coordination with a qualified environmental professional	Detailed Design Phase Prior to demolition and during detailed design phase as appropriate	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		incorporated into final project plans. Asbestos shall be removed and stored off-site prior to building/structure demolition by experts qualified to identify and remove asbestos. Similarly, Lead based paint will be appropriately contained off-site during the demolition process. Demolition shall comply with the California Department of Occupational Safety and Health (CAL/ OSHA) requirements regarding asbestos and lead paint removal. Asbestos is to be removed from the site and properly disposed of prior to, and as a condition of, the issuing a permit for site demolition.			
HAZ-2	**Impact HAZ-2:** Grading and earthmoving activities could expose the public or construction workers to heavy metals in the soil from nearby railroad operations.	**Mitigation Measure HAZ-2:** In the event the construction involves installation of footings within the railroad right of way, soils along the railroad right of way shall be tested as part of the Phase II study mentioned in Mitigation Measure HAZ-1 for heavy metals, TPH, and PAHs. This study will be preformed once an alignment is selected for the project and prior to the issuance of permits to construct any portion of the project near the railroad lines. The number of borings and test methods shall be documented in a work plan for the Phase II study. Remediation for these substances shall depend on the contaminant nature, level, and estimated volume of soil contamination. Impacted soils may be capped under the road, treated onsite biologically or via stabilization, or sent offsite to an approved landfill. Remediation measures shall be approved by the MCAG prior to issuance of the permit to construct.	MCAG in coordination with a qualified environmental professional	After an alignment is selected, prior to beginning construction in the vicinity of any railroad.	
HAZ-3	**Impact HAZ-3:** Grading and earthmoving activities may disturb soils that are potentially contaminated by known or unknown leaking USTs associated with farms in the project study area. Furthermore, if USTs under the project were to be abandoned, they could leak hazardous substances and create risks to	**Mitigation Measure HAZ-3:** Underground storage tanks in the project study area shall be identified during the Phase II study and removed or otherwise mitigated. USTs shall be identified by a trained environmental professional through visual observation during a site visit, in interviews with the property owners, and during review of records at the City of Atwater and or Merced County Health Department. The project engineer shall retain an environmental consultant experienced with UST removal to prepare a plan	MCAG in coordination with a qualified environmental professional	Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	human health and the environment over time.	that addresses proper removal and remediation of USTs and any adjacent contaminated soils that are identified within the proposed right-of-way. The remediation plan shall also provide a strategy for addressing any USTs presently unlisted or otherwise not identified during the Phase II, but that are found during project construction phases. This plan shall be approved by the Merced County or City of Atwater Health Departments, as applicable, prior to issuance of a grading permit. In all cases, any USTs found within the proposed right-of-way shall be safely removed and properly disposed of prior to final grading for the construction of the roadway.			
HAZ-4	**Impact HAZ-4:** Abandoned automobiles and farm equipment may have deposited substances such as TPH, BTEX, MTBE, oil, grease, associated PAHs, and lead into the soil. Abandoned farm equipment may have also leaked pesticides (including arsenic) and herbicides into the soil. Soil contaminants from abandoned automobiles and farm equipment may be present at high enough levels such that during grading and earthmoving activities disruption of the soil would pose a health risk to construction workers and the public.	**Mitigation Measure HAZ-4:** The Phase II study shall conduct soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and remediate any concentrations of hazardous materials appropriately. During the Phase II study the selected alternative shall be superimposed (with the limits of the selected right of way) on the property map to identify and expand upon areas of potential concern. A sampling plan shall be prepared and shall be approved by the Merced County or City of Atwater Health Departments, as applicable. The sampling plan shall include soil sampling around abandoned cars and farm equipment and in agricultural areas to determine the types and levels of contaminants present (if any). Once the sampling plan is approved, soil investigation will be conducted to determine specific impacts to the soil and groundwater, and mitigation measures. Results shall be included in the Phase II study. Recommendations of this study shall be implemented prior to issuance of the permit to construct. State oversight and regulatory approval of cleanup shall occur as necessary. Recommendations based on soil sampling shall be developed and incorporated into future plans. Measures may include the removal and offsite disposal of farm equipment, excavation and offsite disposal of impacted soil, and/or onsite capping of contaminated soil underneath the selected route.	MCAG in coordination with a qualified environmental professional	Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
HAZ-5	**Impact HAZ-5:** Grading and earthmoving activities could expose the public or construction workers to hazardous substances in the soil deposited during agricultural processes.	**Mitigation Measure HAZ-5:** See Mitigation Measure HAZ-4 and HAZ-1A. The sampling plan shall also address the level of pesticides and herbicides in the soil from previous agricultural applications.	MCAG in coordination with a qualified environmental professional	Detailed design phase	
HAZ-6	**Impact HAZ-6:** Lighting associated with the project and the storage of hazardous materials during construction could create a safety hazard to the flight school operating at the former Castle Air Force Base since a portion of the project is within several airport compatibility zones.	**Mitigation Measure HAZ-6a:** The developer shall prepare a lighting plan to minimize construction and operational lighting such that it does not interfere with aircraft using the runway at the former Castle Air Force Base. Prior to issuance of a permit to construct the lighting plan shall be approved by MCAG and the CAED and determined to be consistent with Merced County Airport Land Use Compatibility Plan Policy 4.3.5, which does not allow lighting that would distract aircraft from the runway and create landing hazards. **Mitigation Measure HAZ-6b:** As required by the Merced County Airport Land Use Compatibility Plan Policy 4.3.2, structures within Compatibility Zone B1 above 35 feet tall require Airport Land Use Commission review. **Mitigation Measure HAZ-6c:** As required by the Merced County Airport Land Use Compatibility Plan Policy 4.2.4, except for aviation fuel, other aviation-related flammable materials and up to 2,000 gallons of nonaviation flammable materials, the aboveground storage of fuel or hazardous materials shall not occur in airport compatibility zones B1 and B2.	Contractor and MCAG MCAG MCAG	Detailed design phase Detailed design phase Detailed design phase	
Biological Resources and Wetlands					
BIO-1A	**Impact BIO-1a:** Giant Garter Snake	**Mitigation Measure BIO-1a:** Although there are no modern records for giant garter snakes in Black Rascal Creek or Canal Creek, these creeks provide suitable habitat conditions for this snake. Thus, to ensure that there would be no impacts to this snake during any dewatering activities related to creek realignment and/or construction of road crossings, avoidance measures shall be	MCAG and contractor in coordination with a qualified biologist	On going through construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		implemented when construction would be within 200 feet of Black Rascal Creek or Canal Creek. The avoidance and minimization measures are detailed in the Guidelines for Procedures and Timing of Activities Related to the Modification or Relocation of Giant Garter Snake Canal or Stream Habitat and the USFWS Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat (USFWS 1999). In addition, if a giant garter snake is found in the work area, the USFWS shall be notified and the snake will be relocated within the same waterbody, outside of the area of effect.			
BIO-1B	**Impact BIO-1b:** Vernal Pool Fairy Shrimp	**Mitigation Measure BIO-1b:** Mitigation for impacts to vernal pool fairy shrimp (or vernal pool tadpole shrimp) habitat is not be required for this project.	N/A	N/A	
BIO-1C	**Impact BIO-1c:** Hardhead	**Mitigation Measure BIO-1c:** If partial or total dewatering of Black Rascal Creek or Canal Creek is required, a dewatering plan would be reviewed and monitored by a qualified biologist. The dewatering plan will be designed to reduce impacts to hardhead to the greatest extent practicable. Appropriate measures, including the use of mesh screens, seine and dip-nets, will be implemented to salvage and otherwise reduce mortality to this species during active dewatering. Additionally, turbidity barriers will be installed in the work areas within the channels to prevent impacts to water quality downstream. Finally, a biological monitor will be present during all dewatering activities. The biological monitor will capture all native fish species including hardhead and relocate to undisturbed habitat within the same watercourse. This activity will be conducted in consultation and as approved by CDFG.	MCAG in coordination with a qualified biologist	Detailed design phase	
BIO-1D	**Impact BIO-1d:** California Tiger Salamander	**Mitigation Measure BIO-1d:** In order to offset the project's impact to potential California tiger salamander breeding habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation banks that may be available for use at the time of project construction). It is likely that the USFWS will require the applicant to purchase at least three preservation credits for every acre (or portion thereof) of potential breeding	MCAG	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		habitat impacted by the project (3:1 mitigation ratio). The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project. Prior to project implementation, the project sponsor shall purchase mitigation credits for any impacts. In addition, the USFWS has approved use of the Great Valley Conservation Bank at Flynn Ranch in Merced to jointly mitigate for impacts to California tiger salamander upland estivation/over-summering habitat and San Joaquin kit fox habitat. It is likely that the USFWS will require a 3:1 mitigation ratio for permanent impacts to "suitable" CTS upland estivation/over-summering habitats, and a 1.1: 1 mitigation ratio for temporary impacts to "suitable" CTS upland estivation/over-summering habitats. Once the final alignment is determined, the project sponsor shall purchase the appropriate number of mitigation credits for any impacts. The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project. This mitigation is not in addition to mitigation requirements for San Joaquin kit fox, rather can be combined with any requirement for these species, the greater acreage requirement for any single species being the dominant requirement. Prior to impacting potential California tiger salamander habitats, an "incidental take" permit (Section 7 consultation) would be required from USFWS. The US Army Corps of Engineers would be the Section 7 federal nexus agency for this project.			
BIO-1E	**Impact BIO-1e:** Western Spadefoot Toad	**Mitigation Measure BIO-1e:** Western spadefoot toads are known to occur at both the Vieira-Sandy Mush Conservation Bank located in Merced and the Great Valley Conservation Bank at Flynn Ranch in Merced. Consequently, it is likely that mitigation credits purchased at either of these mitigation banks to compensate for impacts to potential California tiger salamander breeding habitat would also mitigate the proposed project's impact on potential breeding habitat for the western spadefoot toad. Mitigation credits that are purchased shall be based upon a minimum of a 1:1 compensation to impacts ratio for impacts	MCAG in coordination with CDFG	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		to 0.69-acre of potential breeding habitat for western spadefoot toad. As this mitigation is not in addition to mitigation requirements for California tiger salamander, provided that a minimum of 0.69 acre of compensation credits are purchased in total for the proposed project, impacts to western spadefoot toad would be regarded as less than significant. Impacts to potential breeding habitat for the western spadefoot toad will be conducted in consultation and as approved by CDFG.			
BIO-1F	**Impact BIO-1f:** Pacific Pond Turtle	**Mitigation Measure BIO-1f:** Turbidity barriers that will be installed around the construction areas in Black Rascal Creek or Canal Creek will reduce impacts to pond turtles that may occur downstream. All Pacific pond turtles encountered during dewatering or other activities in the creeks would be salvaged, per CDFG approval, and relocated to preserved off-site habitats. The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the Pacific pond turtle. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied aquatic habitat and upland nesting habitat within the final project alignment could be impacted by the proposed project. Since avoidance of all potentially occupied habitat is not possible, mitigation would include conducting preconstruction surveys for Pacific pond turtle and avoidance of nest sites. Preconstruction surveys for turtles and their nests shall be conducted 30 days prior to any construction in or surrounding any large primary irrigation canals, creeks, Black Rascal Creek or Canal Creek. If nest sites are located adjacent to a proposed work area, the nest site plus a 50-foot buffer around the nest site shall be fenced to avoid impacts to the eggs or hatchlings which over-winter at the nest site. In addition, if nest(s) are located during surveys, moth balls (naphthalene) should be sprinkled around the vicinity of the nest (no closer than 10 feet) to mask human scent and discourage predators. Construction at the nest site and within the 50-foot buffer	MCAG in coordination with CDFG and contractor	Prior to and on going through construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		area shall be delayed until the young leave the nest (this could be a period of many months) or as otherwise advised and directed by CDFG, the agency responsible for overseeing the protection of the pond turtle. If CDFG allows translocation of any nestling pond turtles this shall be completed by a qualified biologist under the direction of CDFG. While the measures prescribed above would reduce the impacts to Pacific pond turtles to a level regarded as less than significant pursuant to the CEQA, CDFG may also require mitigation for any impacts to the turtle's habitat following completion of nesting. Any CDFG requirements would become conditions of the project that shall be implemented by the project sponsor. This mitigation is typically at a 1:1 mitigation ratio, or as otherwise determined by CDFG. Mitigation credits shall be purchased from a qualified mitigation bank if required by CDFG. This mitigation measure would reduce impacts to a level regarded as less than significant.			
BIO-1G	**Impact BIO-1g:** Nesting Raptors	**Mitigation Measure BIO-1g:** Nesting surveys shall be conducted in the spring of the year prior to construction of the project and, if construction would commence between March 1 and September 1, again 30 days prior to construction of the project. The raptor nesting surveys shall include examination of all trees and shrubs within the project area and trees and shrubs within sphere of influence of the proposed project. If nesting raptors are identified during the surveys, the dripline of the nest tree or shrub must be fenced with orange construction fencing. In addition, a 300-foot radius buffer must be fenced with orange construction fencing where this buffer intersects the expressway alignment work areas. This 300-foot buffer may be reduced if a qualified raptor biologist determines that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. At a minimum, however, the non-disturbance buffer shall be a radius of 100 feet around the nest tree or shrub. If the nest site is on an adjacent property, the portion of the buffer that occurs on the project site shall be fenced with orange construction fencing.	MCAG in coordination with a qualified biologist and contractor	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		When construction buffers are reduced from the 300 foot radius, a qualified raptor biologist shall monitor distress levels of the nesting birds for one week after project disturbance occurs. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the raptor biologist shall have the right to re-implement the full 300-foot buffer. Instances when the buffer could be reduced in size would be if the raptors were well acclimated to disturbance and/or if there were physical barriers between the nest site and the construction project that would reduce disturbance to the nesting raptors. No construction or earth-moving activity should occur within the non-disturbance buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1. Regardless, the resource agencies consider September 1 the end of the nesting period unless otherwise determined by a qualified raptor biologist. Once the raptors have completed the nesting cycle, that is the young have reached independence of the nest, no further regard for the nest site shall be required. No other compensatory mitigation is required.			
BIO-1H	**Impact BIO-1h:** Swainson's Hawk	**Mitigation Measure BIO-1h:** CDFG has prepared guidelines for conducting surveys for Swainson's hawk entitled: Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (CDFG 2000). These survey recommendations were developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reduce the potential for nest failures as a result of project activities and/or disturbances. To meet the CDFG's recommendations for mitigation and protection of Swainson's hawks in this guideline, surveys should be conducted for a half-mile radius around all project activities and should be completed for at least the two survey periods immediately prior to a project's initiation. The guidelines provide specific recommendations regarding the number of surveys based on when the project is scheduled to begin	MCAG in coordination with CDFG	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		and the time of year the surveys are conducted. If Swainson's hawks are found to be nesting on or in the immediate vicinity of the project area in the future when the proposed project is implemented, consultation with CDFG and mitigation compensation shall be required. At that time, the necessity of acquiring a Fish and Game Section 2081 management authorization should be determined. CDFG has prepared a Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California (CDFG 1994) (hereinafter the Mitigation Guidelines) that prescribes avoidance and mitigation guidelines for impacts to Swainson's hawk nesting and foraging habitats. The Mitigation Guidelines require project sponsors to replace any impacted Swainson's hawk nesting and/or foraging habitat with other suitable Swainson's hawk nesting/foraging habitat. If Swainson's hawks are found to be nesting on or within the area of influence of the project (within 1,000 feet of the project alignment), impacts to nesting Swainson's hawks would be regarded as significant and adverse, and mitigation compensation would be required. The CDFG Mitigation Guidelines states that acceptable mitigation to offset impacts to Swainson's hawk foraging habitat can be met by Fee Title acquisition of Swainson's hawk habitat, or by acquisition of the right to record a conservation easement over lands that can be managed for this hawk species (hereinafter Habitat Management Lands). Any land acquired through Fee Title would have to be donated to a suitable conservation organization for management. In addition to providing Habitat Management Lands, the project sponsor would be assessed a management fee for the long-term management of the Habitat Management Lands by a suitable conservation organization. In lieu of these mitigation measures, as approved by CDFG, the project sponsor may purchase mitigation credits commensurate with the acreage of impacts to foraging and/or nesting habitat at a CDFG approved Swainson's hawk mitigation bank.			
BIO-1I	**Impact BIO-1i:** Western Burrowing Owl	**Mitigation Measure BIO-1i-1:** A nesting survey shall be conducted for ground nesting	MCAG in coordination with a	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		raptors, such as western burrowing owl and northern harrier. The burrowing owl survey should be conducted in accordance with the survey requirements detailed in the CDFG's October 17, 1995 Staff Report on Burrowing Owl Mitigation. Surveys shall be conducted in both the breeding season (April 15-July 15) and non-breeding season (December-January) to assess use of the project area by this species. If burrowing owls are present on the project area during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 75 meter (276-foot) buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance within the project area. This 276-foot buffer could be removed once it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest). Typically, the young fledge by August 31. This date may be earlier than August 31, or later, and would have to be determined by a qualified raptor biologist. If northern harriers are identified nesting within the project area, mitigation measures detailed above for nesting raptors should be implemented. Additionally, if burrowing owls are identified nesting onsite and would be affected by the proposed project, an upland mitigation area for burrowing owls shall be established either on- or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls that would be affected by the proposed project, with a minimum of 6.5 acres preserved per pair of owls or single owl that would be affected by the proposed project. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are found to be within the project area, the mitigation requirement shall be 2 x 6.5 = 13 acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be 3 x 6.5 = 19.5 acres). A detailed	qualified biologist and CDFG		

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		mitigation and monitoring plan shall be developed for the burrowing owl mitigation area. This plan must be prepared in coordination with CDFG, and approved by this agency. In lieu of this mitigation measure, as approved by CDFG, credit commensurate with the mitigation acreage requirements set forth above shall be purchased from a qualified burrowing owl mitigation bank.			
		Mitigation Measure BIO-1i-2: Preconstruction surveys of the project area shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted to non-habitat (e.g., graded and developed).	MCAG in coordination with a qualified biologist	No more than 30 days prior to construction	
		Mitigation Measure BIO-1i-3: If western burrowing owls must be passively relocated from the project area to remove them from harms way, these activities shall be approved by CDFG in advance. Passive relocation shall not commence before September 30th and shall be completed prior to February 1st.	MCAG in coordination with a qualified biologist and CDFG	Prior to and during construction	
		Mitigation Measure BIO-1i-4: If an upland mitigation site is designated for burrowing owls, it shall be approved as a suitable burrowing owl mitigation property by CDFG. The preserved area shall be preserved in perpetuity as wildlife habitat via recordation of a conservation easement that designates the California Department of Fish and Game (CDFG), or any other qualified conservation organization as approved by CDFG as the Grantee of the easement.	MCAG with a qualified biologist and CDFG	Prior to construction	
		Mitigation Measure 1i-5: If a conservation easement is established over burrowing owl habitat, an endowment to cover the management of the mitigation area and implementation of the mitigation and monitoring plan shall be provided by the project sponsor to the Grantee of the Conservation Easement prior to issuance of the grading permit.	MCAG	Prior to issuance of the grading permit	
BIO-1J	**Impact BIO-1j:** Common and Special-Status Nesting	**Mitigation Measure BIO-1j:** A nesting survey shall be conducted 15 days prior to	MCAG in coordination with a	15 days prior to construction as	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	Passerine Birds	commencing construction work if this work would commence between March 1 and September 1. If special-status birds, such as loggerhead shrike or tricolored blackbirds, are identified nesting within or near the project area, a 200-foot radius around the nest must be staked with bright orange construction fencing. No construction or earth-moving activity shall occur within this 200-foot staked buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by August 1. This date may be earlier than August 1, or later, and would have to be determined by a qualified ornithologist. If common (that is, not special-status) passerine birds (that is, perching birds such as American robins, scrub jays, and northern mockingbird) are identified nesting within the project area, grading activities in the immediate area shall be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the area. Typically, most passerine birds can be expected to complete nesting by July 1, with young attaining sufficient flight skills by early July.	qualified biologist	necessary	
BIO-1K	**Impact BIO-1k:** San Joaquin Kit Fox	**Mitigation Measure BIO-1k:** In order to offset the project's impact to high and medium quality potential San Joaquin kit fox habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation bank available for use at the time the project is constructed). The USFWS has approved use of this bank to jointly mitigate for impacts to California tiger salamander upland estivation/over-summering habitat and San Joaquin kit fox habitat. Mitigation credits that are purchased to compensate for permanent impacts and for temporary impacts to high and medium quality suitable kit fox habitats. The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project. It is likely that the USFWS will require a 2:1 mitigation ratio for permanent impacts to potential SJKF habitat (for medium and high quality habitat areas only), and a 0.5:1 mitigation ratio for temporary	MCAG in coordination with a qualified biologist and contractor	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		impacts to potential SJKF habitat. Once the final alignment is determined, the project sponsor shall purchase the appropriate number of mitigation credits for any impacts. Finally, avoidance and minimization measures will be implemented by the proposed project to further reduce potential impacts to the San Joaquin kit fox. An employee training program will be conducted before groundbreaking to explain the Federal Endangered Species Act and any endangered species concerns to contractors working in the area. Qualified biologists would then conduct preconstruction den surveys no more than 14 days prior to groundbreaking to ensure that potential kit fox dens are not disrupted during construction of the expressway project. If "potential dens" are located, infrared camera stations will be set up and maintained for 3 consecutive nights at den openings prior to initiation of groundbreaking activities to determine the status of the potential dens. If no kit fox is found to be using the den, groundbreaking activities would proceed unhindered. However, if a kit fox is found using a den site within an area of influence of the expressway project (i.e., within 300 feet of the proposed road alignment), the USFWS will be notified at once. Because timing is an issue, notification would be via a telephone call (and as necessary voice-mail message) to the Chief of Endangered Species in Sacramento, and the Supervisor of Environmental Services at the appropriate CDFG Regional office. If the den is a refuge site only, the project sponsor will seek permission from the USFWS (and CDFG) to passively relocate the fox(es) from the den site prior to the initiation of the groundbreaking activities. As approved, passive relocation will occur over a three day period. Should a den be found that is a natal or pupping den, and it is within an area of influence near the expressway project, the groundbreaking activities would be delayed until such time that biologists can confirm that all kit foxes have left the den site. Once the den has been vacated, an infra red triggered camera would be set at the den opening. The camera would then be checked over a 2-day period to confirm that kit foxes no longer use the den. Once this is verified, grading equipment could be moved into the area and the			

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		groundbreaking activities completed. Prior to initiating groundbreaking activities, the vehicle and equipment access routes and work area will be delineated using construction fencing. This will minimize the project-related disturbance to potential San Joaquin kit fox habitat to the maximum extent possible. During the groundbreaking activities, all project-related vehicle traffic will be restricted to established roads or access routes, and will observe a 20-mile an hour speed limit within the work areas, except on County roads and highways. A biological monitor will be present during all activities that could result in injury to San Joaquin kit fox. The biologist will have the authority to halt work, if necessary, to protect the kit fox. To prevent harm to San Joaquin kit fox, any steep-walled holes and/or trenches excavated for the project will be completely covered at the end of each workday, or escape ramps will be provided to allow any entrapped animals to escape unharmed. All pipe sections stored at the project site overnight that are four inches in diameter or greater will be inspected for San Joaquin kit fox before the pipes are moved or buried. If San Joaquin kit fox are identified in the work area at any time, the USFWS and/or CDFG will be notified and consulted before work activities resume. All trash items will be removed from the project site to reduce the potential for attracting predators of San Joaquin kit fox. Contractors will be prohibited from bringing firearms and pets to the job site. Prior to impacting San Joaquin kit fox habitat, an "incidental take" permit (Section 7 consultation) would be required from USFWS, and an "incidental take" permit (Section 2081 permit) would be required from CDFG. In lieu of such a permit, CDFG may process a "consistency determination" pursuant to Fish and Game Code §2080.1. Such a determination would indicate that the State's interests in protecting State listed species are met by the federal biological opinion (i.e., the incidental take permit) issued by USFWS and thus no Section 2081 permit is required.			
BIO-1L	**Impact BIO-1l:** California	**Mitigation Measure BIO-1l:**	MCAG in	Prior to	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	Horned Lizard	The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the California horned lizards. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied California horned lizard habitat within the project area could be impacted by the proposed project. Avoidance of potentially occupied upland burrow sites is not possible. The project sponsor will be purchasing mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation bank) to mitigate for impacts to San Joaquin kit fox habitat. Since both the San Joaquin kit fox and the California horned lizard require friable soils, it shall be assumed that mitigation land set aside for San Joaquin kit fox could also serve to provide mitigation lands for the California horned lizard. Additional mitigation measures shall include conducting preconstruction surveys for the California horned lizard prior to any site grading. All California horned lizards encountered during site grading would be salvaged, per CDFG approval, and relocated to preserved off-site habitats. Impacts to potential California horned lizard habitat would be conducted in consultation and as approved by CDFG. This mitigation measure would reduce impacts to a level regarded as less than significant.	coordination with CDFG	construction	
BIO-2	**Impact BIO-2:** Impacts to Jurisdictional Wetlands, Including Waters of the United States and the State of California	**Mitigation Measure BIO-2:** Impacts to waters of the United States and/or State will be reduced to a less-than-significant level through various means, including avoidance, minimization of impacts, and mitigation compensation. Impacts will be minimized by the use of Best Management Practices to protect avoided wetland and "other waters" in the project area, and ensure water quality in the avoided wetlands and other waters within the watershed. These practices can include installing orange construction fencing, hay waddles, and other protective measures around wetlands and other waters. During project-related grading, a biological monitor will be on-site to monitor the integrity of avoided wetlands and other waters.	MCAG in coordination RWQCB, Army Corps of Engineers, contractor and a qualified biologist	Detailed design phase on going through construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		For those wetland areas and other waters that cannot be avoided, a Mitigation and Monitoring Plan will be prepared that will provide a mitigation program to fully compensate for impacts to waters of the United States/State. To compensate for impacts to wetlands and other waters, wetlands and other waters shall be created in areas that are now upland at a 2:1 (mitigation to impacts) ratio and be consistent with requirements set forth by the Corps and the RWQCB. The new wetlands and other waters will resemble those wetlands and other waters affected by the project (known as in-kind replacement). In pool environments that will be impacted by the project, wetland plant/animal populations will be relocated by transferring topsoil from the impacted pools to the re-created pools. These topsoils would contain a seed bank of the impacted pool plant species which would germinate with fall/winter hydration in the re-created pools. The proposed wetland mitigation plan would have to meet normal requirements for mitigating impacts to wetlands and other waters, which include: • Replacement of impacted wetlands and other waters at a 2:1 ratio. For permanent wetland and other waters impacts, wetlands and other waters shall be replaced at a minimum ratio of two acres created for each acre, or fraction thereof that is permanently impacted. • Dedication of the permanently protected areas. The Corps and other regulatory agencies generally require that any new wetlands and other waters created to mitigate project impacts be set aside in a preserve in perpetuity, either through deed restrictions or conservation easements. • Establishment of a five-year monitoring program to monitor the progress of the wetland and other waters mitigation toward an established goal. Success criteria, maintenance and monitoring requirements, contingency measures and a schedule for implementation shall be specified. At the end of each monitoring year, an annual report will be submitted to the Corps, RWQCB and other			

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		resource agencies that permitted the project. This report will document the hydrological and vegetative condition of the mitigation wetlands and other waters, and will recommend remedial measures as necessary to correct deficiencies. In lieu of creating compensation wetlands and other waters, as approved by the Corps and RWQCB, the project sponsor may purchase mitigation credits from an approved mitigation bank at a 2:1 ratio or as otherwise specified by the Corps and RWQCB. Aside from the minimum replacement ratio and in perpetuity protection, various regulatory agencies may provide additional conditions and stipulations for permits. No water of the U.S. and/or State would be impacted until such time that appropriate permits are acquired for the project from the CDFG, RWQCB, and/or Corps. As proposed, impacts to wetlands and other waters within the project area will require a Section 404 permit from the Corps, authorization from the RWQCB pursuant to Section 401 of the Clean Water Act, an NOI with the SWRCB, and an SBAA from the CDFG. Conditions in permits authorized for the project by these agencies shall become conditions of the project. Implementation of the measures described above would reduce significant impacts to waters of the United States/State to a level considered less than significant pursuant to the CEQA. Any other conditions that are stipulated for wetland impacts by the CDFG, Corps and/or RWQCB shall also become conditions of project approval.			
Paleontological and Cultural Resources					
PALEO-1	**Impact PALEO-1:** Project-related ground disturbance could have adverse impacts on unknown or unrecorded significant paleontological resources, including animal and plant fossil remains.	**Mitigation Measure PALEO-1a:** In the event that paleontological resources are discovered during ground clearing operations, a qualified paleontologist shall establish a monitoring and mitigation program, including preconstruction coordination; construction monitoring; emergency discovery procedures; sampling and data recovery, if needed; preparation, identification, and analysis of the significance of fossil specimens salvaged, if any; museum storage of any specimens and data recovered; and reporting.	MCAG in coordination with a qualified paleontologist	During construction as necessary	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		Mitigation Measure PALEO-1b: Prior to construction, construction personnel involved with earth-moving activity shall be informed of the possibility of excavating paleontological resources and that such resources are protected under certain laws and regulations regarding proper notification procedures. This training should be performed by a qualified paleontologist.	MCAG in coordination with contractor	Prior to construction	
CULT-1	**Impact CULT-1:** Project construction would involve subsurface excavation and grading which could result in damage to or destruction of unrecorded archaeological resources, including Native American artifacts and/or human remains.	**Mitigation Measure CULT-1a:** If cultural resources are discovered during earthmoving or soil-disturbing activities, a monitoring program will be implemented to observe, assess, record and recover any important prehistoric features or human remains uncovered. **Mitigation Measure CULT-1b:** Provide a qualified, professional archaeological monitor and a qualified Native American observer in accordance with CEQA Guidelines, § 15064.5 (d) in the event that cultural resources are found during removal of the existing built environment during all initial exposure of native soil and during deep utility trenching. **Mitigation Measure CULT-1c:** In accordance with CEQA Guidelines, § 15064.5 (e)(1)(A)(B), in the event of the discovery or recognition of any human remains on the project site during development, there shall be no further excavation or disturbance of the site or any area reasonably suspected to overlie adjacent human remains until the coroner of the county in which the remains are discovered is to be contacted to determine that no investigation of the cause of death is required. **Mitigation Measure CULT-1d:** If the coroner determines the remains to be Native American: • the coroner shall contact the Native American Heritage Commission within 24 hours; • the Native American Heritage Commission shall identify the person or persons it believes to be most likely descended from the deceased Native American; and • the most likely descendent may make recommendations	MCAG MCAG MCAG in coordination with a qualified cultural resource specialist and the County MCAG in consultation with the Native American Heritage Commission	During construction as necessary During construction as necessary During construction as necessary During construction as necessary	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code § 5097.98.			
CULT-2	**Impact CULT-2:** Construction of the Buhach Road overpass over SR 99 would occur in close proximity to the Buhach Catholic Church, an identified historic resource, potentially resulting in damage to, or destabilization of, the structure.	**Mitigation Measure CULT-2:** Construction work, including construction staging near the Buhach Church shall not take place within the legal parcel boundary (Assessor Parcel 025-170-001) of the church. Widening of the Buhach Road overpass would necessitate re-grading of the Church driveway but would not impair access to the main entrance of the building. Furthermore, the Church structure itself, which is the historic resource in question, would be unaffected by widening of the Buhach Road overcrossing.	Contractor	Construction phase	
CULT-3	**Impact CULT-3:** If construction of the Buhach Road overpass would require construction activities to occur on the Buhach Catholic Church property, damage to, or destabilization of the Buhach Catholic Church, an identified historic resource, could occur.	**Mitigation Measure CULT-3:** • The project proponent would develop and implement measures to protect the character-defining features of the Buhach Catholic Church from damage. Such measures would be prepared in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the California Historical Building Code. • Inadvertent damages to the character-defining features of the Buhach Catholic Church would be repaired in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the California Historical Building Code. The building and grounds would be photographed prior to construction establishing a baseline condition for assessing inadvertent damage, as described below.	MCAG	During construction as necessary	
Utilities and Service Systems					
UTIL-1	**Impact UTIL-1:** Project construction would require the demolition of several structures, including the Buhach Road overcrossing and several residential units, as	**Mitigation Measure UTIL-1:** Prior to construction, MCAG shall prepare a Solid Waste Management Plan for the project that demonstrates that at least 50 percent of project-generated solid waste is being recycled, reused or diverted from landfills. Elements of the Solid Waste Management Plan could include, but are not	MCAG in coordination with City/County Public Works	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	well as the removal of vegetation and soil. This debris and other construction material could affect the capacity and lifespan of local landfills, and affect the ability of Merced County and the City of Atwater to meet its AB 939 reduction targets.	limited to, the following: • Recycling of metals and other recyclable materials generated during construction. • Regrinding and reuse of the concrete debris generated by demolition of the existing Buhach Road overpass. • Balancing excavated soils by reusing them in other areas, such as for fill around the foundations of elevated project features. • Removed vegetation reused, such as through mulching, or composted at a composting facility. The City of Atwater and Merced County Public Works departments shall approve the Solid Waste Management Plan prior to the issuance of any building permits. Given that the types of solid waste that would be generated are highly recyclable or green waste, such as soil and vegetation, it is anticipated a source reduction rate of 50 percent or higher is easily attainable.			
Public Services					
PS-1	**Impact PS-1:** Emergency responders from the Merced County Fire Department Station 82 on Gurr Road could be delayed or at risk from the signalized intersections proposed for the project, particularly the intersection of North Gurr Road with SR 140 and the AME.	**Mitigation Measure PS-1:** The project sponsor shall be responsible for installation of specialized traffic signal lights at all signalized intersections along the project alignment. These traffic signals shall be controllable by the Fire Department to ensure that fire apparatus may safely cross signalized intersections on a green light and that other traffic at the intersection is stopped by red lights. In addition to the specialized traffic signals, the roadway alignment shall be moved to a further distance from the existing fire station, as shown in Figure 4.14-2. A paved break in the roadway median shall also be provided to ensure adequate fire station access and response times.	MCAG in coordination with City/County emergency service providers	Construction phase	
PS-2	**Impact PS-2:** The project would result in changes in access to local roadways that could affect emergency service providers by altering the routes that are currently used to respond to service calls. This	**Mitigation Measure PS-2:** The project sponsor shall provide all emergency service providers in Merced County, and the Cities of Atwater and Merced with detailed information about changes in local roadways. This information can be used by the emergency service providers to update their response plans and to chart new routes to respond to service calls.	MCAG in coordination with City/County emergency service providers	Detailed design phase and during construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	could adversely affect emergency response times.	• Prior to any demolition or construction, this information shall be submitted prior to any changes in access. • During construction, this information shall be updated every time a new access connection is completed to inform the service providers that an alternate connection is available. It is assumed that, once constructed, the AME would provide new routes for many of these calls.			
PS-3	**Impact PS-3:** Project construction may require detours and lane closures on existing roadways in the project area which may adversely affect EMS, as well as Sheriff, Police, and Fire Department response times.	**Mitigation Measure PS-3:** The project sponsor shall prepare a Traffic Management Plan that ensures coordination between construction contractor(s) and public safety providers to minimize or eliminate interference with provision of police, fire and emergency medical services. Prior to construction, the plan shall be provided to all emergency service providers within the area. Additionally, emergency service providers shall receive advance notice of all necessary lane closures and detours as a result of project construction. This plan shall be approved by the Merced County and City of Atwater Department of Public Works prior to the issuance of permits to construct the project.	MCAG in coordination with City/County Planning, Engineering, and emergency service providers	Detailed design phase	
PS-4	**Impact PS-4:** The AME would be built in close proximity to the proposed Avenue One school site, which could result in unsafe conditions for students traveling by foot or bicycle who would have to get across the AME.	**Mitigation Measure PS-4a:** Under either alternative, the section of the AME project between SR 99 and Santa Fe Drive, including the proposed intersection of Avenue Two with the AME, shall be constructed in accordance with the FHWA's Safe Route to School guidelines It is anticipated that these guidelines may include requirements for: • Designated crosswalks crossing the AME • Traffic-signals equipped with walk/don't walk signals • Bicycle lanes on Avenue One and Avenue Two • School Crossing signage Modified Alternative 1B would cross under Avenue One which would allow vehicles, pedestrians, and bicyclists on Avenue One to safely travel over the AME to access the	MCAG in consultation with the Atwater Elementary School District	Prior to beginning construction of Alternative 1B	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		Avenue One school site. Under Alternative 1A, Avenue One would terminate on either side of the AME, ending in cul de sac on the east and west sides of the AME. Individuals traveling to and from the Avenue One school site would be required to travel south to Green Sands Avenue or north to Avenue Two to cross the AME. This would restrict the ability for some students or other individuals to travel to school using alternative transportation, such as walking or bicycling. This would create a conflict with the FHWA's Safe Routes to School guidelines, which are designed to enable and encourage children, including those with disabilities, to walk and bicycle to school and to make bicycling and walking to school a safer and more appealing transportation alternative. **Mitigation Measure PS-4b:** To provide safe pedestrian and bicycle crossing of Alternative 1A, a pedestrian overpass shall be constructed between the two cul de sacs on Avenue One on the east and west sides of Alternative 1A. Built in accordance with the Safe Route to Schools guidelines, the pedestrian overpass would allow for students to safely cross above the expressway and access the Avenue One school site. The design and configuration of these intersections and the overpass shall be developed in consultation with the AESD and approved by the Merced County Department of Public Works prior to the issuance of permits to construct this portion of Alternative 1A.			

Board of Supervisors Meeting
October 6, 2009

PL 355 – GPTA 09-002 Atwater-Merced Expressway

Submittal 7
Mitigation Monitoring Reporting Program

CHAPTER 4 MITIGATION MONITORING REPORTING PROGRAM

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
Land Use and Agriculture					
N/A	N/A	Although the conversion of farmland is considered a less-than-significant impact, MCAG shall mitigate for the loss of agricultural lands in conformance with any countywide program adopted by Merced County prior to the commencement of construction. In the event no such program is in place prior to commencement of construction, the farmland impacts of the AME project should be mitigated by purchasing conservation easements at a 1:1 ratio for impacted farmlands. Under the 1:1 ratio, for every acre of farmland converted by the AME project and equivalent amount of farmland within the County would be placed under conservation easement(s). These conservation easements would ensure that the farmland would be protected in perpetuity for future development.	MCAG	Prior to grading	
Visual Resources					
VIS-1	**Impact VIS-1:** The construction, realignment, and expansion of roadways within the project area could create new sources of daytime and nighttime lighting that could adversely affect day or nighttime views in the area.	**Mitigation Measure VIS-1a:** Lighting at construction sites shall be shielded and shall face downwards at lot lines so as to not be directly visible from any adjoining sensitive uses, such as residential areas, unless required to maintain safe levels of lighting for work and security, and as necessary to meet Occupational Safety and Health Administration (OSHA) standards. **Mitigation Measure VIS-1b:** Street lighting shall incorporate directional shielding so as not to shine directly on residential areas adjacent to the project site.	MCAG and contractor MCAG and contractor	On going through construction Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
VIS-2	**Impact VIS-2:** The removal of existing vegetation within Caltrans facilities could adversely affect existing visual features in these areas.	**Mitigation Measure VIS-2:** Any vegetation removal from within the state right-of-way as a result of the proposed construction activities shall be identified prior to removal and shall be replaced within project limits at a ratio approved by Caltrans. Funds shall be set aside by the project sponsor for replacement highway planting. Replacement highway planting must be installed within two years of damage or removal of the existing planting. A minimum 3-year plant establishment period will be included to assure the success of the replacement highway planting. For any new plantings or plantings within project limits and Caltrans jurisdiction, barriers shall be installed, where possible without compromising motorist safety, in front of vegetation to avoid loss of tree and shrubs from vehicle collisions. During the construction of the project, ESA fencing shall be used to protect existing trees and shrubs will be required.	Contractor in coordination with Caltrans and City/County planning	Detailed design phase, construction and within 2 years of plant removal	
VIS-3	**Impact VIS-3:** The construction and modification of project features within state facilities could be inconsistent with the visual character being implemented along SR 99.	**Mitigation Measure VIS- 3:** Project facilities and features along SR 99 shall be constructed with aesthetic treatments consistent with the design guidelines provided in the Route 99 Corridor Enhancement Master Plan. These design guidelines shall apply to bridges, median plantings and soundwalls on SR 99 within project limits. The aesthetic design shall be approved by Caltrans prior to modification of any state facilities. These aesthetic treatments should be coordinated through the Caltrans Landscape Architecture unit and the Bridge Aesthetics unit at Caltrans Headquarters. This coordination with Caltrans and the incorporation of design features consistent with the Route 99 Corridor Enhancement Master Plan would reduce any impacts related to inconsistent visual features to a less-than-significant level. Required design features are likely to include aesthetics treatments such as: • Extended Gore Paving • Color or architectural concrete barrier used on bridge structures	Contractor in coordination with City planning and Caltrans	Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		• Color or texture on slope paving under a bridge abutment • Color or arch work on the bridge fence • Use of aesthetic treatments on new soundwalls along SR 99			
Traffic and Transportation					
TRAF-1	**Impact TRAF-1:** During construction, the project may result in inadequate emergency access.	**Mitigation Measure TRAF-1:** During construction of the AME, the project sponsor shall be required to provide a minimum number of through lanes and turning lanes open on all existing roadways to accommodate vehicular traffic. Emergency service providers in the City of Atwater, the City of Merced, and Merced County shall be notified throughout the construction phase as to any road closures or detours as lane reductions in existing roadways would impede emergency access.	MCAG in coordination with city/county planning, engineering, and emergency service providers	Ongoing through construction	
Noise					
N-1	**Impact N-1:** Project construction would cause a substantial temporary or periodic increase in ambient noise levels, groundborne vibration, and groundborne noise levels in the project vicinity above existing levels.	**Mitigation Measure N-1:** Project Sponsor shall enforce the following actions during construction of the AME: • Noise-generating activities at the construction site or in areas adjacent to the construction site associated with the project in any way shall be restricted to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday. Should it become necessary to work on weekends, holidays, or after 7:00 p.m., residents shall be notified and noise levels for the needed work shall be subject to a special provision that would limit noise levels from construction activities to not exceed 82 dBA at 50 feet. • All internal combustion engine driven equipment shall be outfitted with appropriate intake and exhaust mufflers in good condition. • "Unnecessary" idling of internal combustion engines shall be strictly prohibited. • Staging of construction equipment shall be avoided within 200 feet of residences and all stationary noise-generating construction equipment, such as air compressors and portable power generators, shall be	MCAG and contractor	Ongoing through construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		placed as far as practical from existing noise sensitive receivers. Temporary barriers to screen stationary noise generating equipment shall be utilized when located in areas adjoining noise sensitive land uses. • "Quiet" air compressors and other stationary noise sources shall be utilized where technology allows such uses. • All construction traffic to and from the project site shall be routed via designated truck routes. Construction related heavy truck traffic shall be prohibited in residential areas where feasible. Construction truck traffic shall be prohibited in the project vicinity during non-allowed hours. • All adjacent residents to the project site shall be notified of the construction schedule in writing. • A "noise disturbance coordinator" responsible for responding to any local complaints about construction noise shall be designated. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. A telephone number for the disturbance coordinator at the construction site shall be conspicuously posted and included in the notice sent to neighbors regarding the construction schedule. The project sponsor shall be responsible for designating a noise disturbance coordinator and the contractor shall be responsible for posting the phone number and providing construction schedule notices. • If the Avenue One school site is open prior to or during construction of the AME project, grading operations within 500 feet of the schools site shall be coordinated with the school schedule such that major grading activities do not occur at times when school is in session. The grading plans shall indicate which areas are to be avoided to prevent disruption of school activities.			
N-2	**Impact N-2:** Implementation of the AME project would cause a	**Mitigation Measure N-2:** The project sponsor shall use all available techniques,	MCAG and contractor	Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	substantial permanent increase in ambient noise levels in the project vicinity and expose persons to noise levels in excess of standards established in the City of Atwater or Merced County General Plans.	including the construction of sound walls or earthen berms, and/or the use of quiet paving materials, to reduce exterior noise levels at impacted noise receivers to meet Merced County noise standards. Because of the rural nature of the project study area, it was recommended by Caltrans that a feasibility and reasonable cost allowance study be conducted to evaluate the costs associated with construction of soundwalls compared to the benefit they would provide. This analysis is provided in the noise study (Appendix D). The reasonableness allowance considers the absolute future noise level, the noise level increase caused by the project, the achievable reduction provided by a sound wall, and the age of the dwelling unit. A base reasonable cost allowance of $52,000 per benefited residence (or residential equivalent) was applied. The majority of the sound walls are considered feasible to construct, however, none of the sound walls evaluated would be considered reasonable under FHWA/Caltrans guidelines. CEQA requires that significant impacts be mitigated to the extent possible and in most locations the use of a final coat of open graded asphalt concrete (OGAC) over the Portland Cement Concrete (PCC) roadway surface would reduce impacts to a less than significant level. The FHWA noise model indicates that there is a difference in noise generation of about 3-dBA between OGAC and PCC pavement types. Given a substantial traffic volume, recent research indicates differences of up to 10 dBA immediately adjacent to roadways. The use of OGAC is far more economical than the construction of sound walls. Therefore, where feasible and where its use would reduce noise levels below county standards, OGAC shall be used as the top layer of paving surface on the AME. Some jurisdictions, including the FHWA, do not recognize the placement of OGAC alone as sufficient mitigation to reduce noise levels. Therefore, under existing guidelines, the paving on state (Caltrans) facilities with OGAC would not be considered adequate mitigation. In these cases,			

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		soundwalls shall be constructed to reduce noise levels at receiver locations below County standards.			
Air Quality					
AQ-1	**Impact AQ-1:** The AME project would result in temporary increases in PM10 emissions requiring compliance with SJVAPCD's Regulation VIII.	**Mitigation Measure AQ-1:** To control the generation of construction-related PM10 emissions, MCAG shall comply with SJVAPCD Regulation VIII, as summarized below: • All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively established of dust emissions using water, chemical stabilizer/suppressant, or covered with a tarp or other suitable cover or vegetative ground cover. • All on-site unpaved roads and offsite-unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. • When materials are transported on or 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. • 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). • 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. • Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site	MCAG and contractor	On going through construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		and at the end of each workday. • Any site with 150 or more vehicle trips per day shall prevent carryout and trackout. • Limit traffic speeds on unpaved roads to 15 mph; and • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. Conformity with the best management practices established in SJVAPCD's Regulation VIII would limit the generation and release of particulate matter resulting from construction activities. Therefore, any impacts would be less than significant.			
AQ-2	**Impact AQ-2:** The AME project would result in temporary impacts arising from elevated concentrations of PM10 and CO, as well as increased emissions of ROG's and NO2 due to project construction.	**Mitigation Measure AQ-2:** The AME project shall comply with San Joaquin Valley Air Pollution Control District recommended measures as listed below: • Use of alternative fueled or catalyst diesel construction equipment • Minimize idling time (e.g., 10 minute maximum) • Limit the hours of operation of heavy duty equipment and/or the amount of time in use • When feasible replace fossil-fueled equipment with electrically driven equivalent (provided they are not run via a portable generator set) • Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways • Implement activity management (e.g., rescheduling activities to reduce short term impacts) • Comply with Rule 4641 of the SJVAPCD – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations	MCAG and contractor	On going through construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		Conformity with the above measures will reduce emissions of PM10 and CO, as well as emissions of ROG's and NO2. Properly managing the amount of time emissions producing equipment is utilized and substituting electrical equipment for fossil fueled equipment whenever feasible, will reduce overall emissions, reducing this impact to a less-than-significant level.			
AQ-3	**Impact AQ-3:** Construction of the AME project would result in generation of more than two tons of NO2 in non-conformance with SJVAPCD Rule 9510.	**Mitigation Measure AQ-3:** The AME project shall comply with San Joaquin Valley Air Pollution Control District Rule 9510 by achieving: • A 20 percent NO2 and 45 percent PM10 reduction in exhaust emissions compared to the statewide fleet average. This can be met by implementing one or more of the following: • Retrofitting existing equipment with control devices, • Using cleaner fuels, • Operating newer than average equipment, • Payment of a mitigation fee to District to obtain reductions through grant and incentive programs. Compliance with the above requirements will reduce emissions of NO2 through the utilization of fuels that produce less of this pollutant and maximizing efficient use of fuel through use of newer than average equipment utilizing appropriate control devices. Furthermore, in the event that emissions targets are not met on-site through implementation of the other measures, payment of a mitigation fee to the SJVAPCD would help reduce emissions of NO2 in other areas of the Air Basin by helping to fund more effective air quality measures elsewhere. Implementation of the above mitigation measures would reduce this impact to a less-than-significant level.	MCAG and contractor	During construction	
Geology, Seismicity, and Soils					
GEO-1	**Impact GEO-1:** During project operation, seismic related-liquefaction and lateral spreading could occur, causing	**Mitigation Measure GEO-1:** Further investigation of liquefaction potential (looking at subsurface soil conditions and groundwater conditions) by a qualified geologist, certified by the State of California, shall	MCAG in coordination with a qualified geotechnical	Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	destabilization of roadways, overhead structures and approaches. This could result in damage to the project and create a hazard to people on the roadway structures.	be performed during the final engineering and design phases of the project, once a final alignment is selected. This investigation shall include a vertical pile capacity analysis which shall consider post-liquefaction settlement. Recommendations given in this investigation shall be consistent with the Caltrans Highway Design Manual. Recommendations of this investigation shall be incorporated into the final project designs and approved by MCAG and Caltrans for work within the State's ROW prior to issuance of permits to construct.	engineer and Caltrans		
GEO-2	**Impact GEO-2:** Seismic ground shaking could damage the project and cause bridge collapse which could harm people in the vicinity, including motorists.	**Mitigation Measure GEO-2:** Once a final alignment is selected for the project, a detailed geotechnical evaluation shall be preformed by a qualified geologist, certified by the State of California. This evaluation shall identify specific areas of concern for seismic ground shaking and provide mitigation measures consistent with the Caltrans Highway Design Manual. Recommended mitigation measures from this evaluation shall be incorporated into the project design and the seismic design of the project shall be approved by MCAG and Caltrans for improvements within the State's ROW prior to issuance of permits to construct.	MCAG in coordination with a qualified geotechnical engineer and Caltrans	Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
GEO-3	**Impact GEO-3:** Unstable soils pose a threat to the structural integrity of the project's bridge structures.	**Mitigation Measure GEO-3:** Recommendations on foundation design shall be made in the final geotechnical evaluation, which is to be performed by a qualified geologist, certified by the State of California, during the PS&E phase. Foundation recommendations in the geotechnical evaluation shall be based on further investigation of subsurface conditions and structural design requirements. In is anticipated that recommendations could include design features that would exceed the structural integrity of Standard Class piles. These recommendations shall be approved by Caltrans and MCAG and incorporated into the project.	MCAG in coordination with a qualified geotechnical engineer and Caltrans	Detailed design phase	
GEO-4	**Impact GEO-4:** In areas where the use of fill material is required, post construction settlement could occur at project embankments since their construction would require fill to be placed on top of existing very stiff silt/sandy silt and very loose to very dense sand silty/sand. Settlement could damage the project structures, which could create hazards to motorists on the expressway.	**Mitigation Measure GEO-4a:** Once a final alignment is selected for the project, a detailed geotechnical evaluation shall be preformed by a qualified geologist certified by the State of California. This study shall address potential post construction settlement at project embankments and shall recommend appropriate mitigation measures consistent with Caltrans design guidelines. Caltrans standard embankment settlement period may be required from 60 days to 90 days depending upon site-specific condition as determined by the geotechnical evaluation. **Mitigation Measure GEO-4b:** Embankment fill shall be placed in accordance with the Caltrans Highway Design Manual guidelines, which requires structure approach embankment material to be compacted to a 95 percent relative compaction. **Mitigation Measure GEO-4c:** Retaining walls needed to retain approach embankments at Route 99 and Santa Fe Drive, and grade separations at the Burlington Northern Railroad and Union Pacific Railroad tracks shall be constructed of either mechanically stabilized earth [MSE] walls (the preferred option) or Caltrans standard cantilever walls. Proper backfill compaction; drainage; adequate bearing capacity; and retaining and grade separation wall type shall be determined by a qualified geologist, certified by the State of California, in the geotechnical evaluation that will be prepared for the project.	MCAG in coordination with a qualified geotechnical engineer and Caltrans	Detailed design phase and construction phase as appropriate	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		Recommendations of the geotechnical evaluation shall be implemented and final designs shall be reviewed and approved by MCAG and Caltrans for improvements within the State's ROW prior to the issuance of permits to construct.			
Hydrology, Drainage, and Floodplains					
HWQ-1	**Impact HWQ-1:** Construction activities would increase erosion potential by exposing soils that can be transported into nearby creeks and storm drains with stormwater runoff.	**Mitigation Measure HWQ-1a:** Consistent with requirement of the NPDES program, the project sponsor shall obtain an individual local permit or multiple permits (depending on phasing plan), subject to approval by the RWQCB. **Mitigation Measure HWQ-1b:** The project sponsor shall prepare a SWPPP, as required under the individual local permits that will be approved by the RWQCB. A NOI shall be filed under the local permits. To comply with the conditions of these permits, and to address the temporary water quality impacts resulting from the construction activities of this project, a SWPPP will be required before construction. **Mitigation Measure HWQ-1c:** The SWPPP required for this project shall include the following elements: • *Project Description* - Includes maps and other information related to construction activities and potential sources of pollutants. • *Minimum Construction Control Measures* - These may include limiting construction access routes, stabilization of areas denuded by construction, and using sediment controls and filtration. The plan will include the design of construction site Best Management Practice (BMP) requirements, per the Caltrans' Project Planning Design Guide and stormwater guidance manuals. • *Erosion and Sediment Control* - The plan is required to contain a description of soil stabilization practices, control measures to prevent a net increase in sediment load in stormwater, controls to reduce tracking sediment onto roads, and controls to reduce wind erosion.	MCAG in coordination with Caltrans MCAG in coordination with the RWQCB MCAG in coordination with the RWQCB	Prior to construction Prior to construction Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		• *Non-Storm Water Management* - The plan will include provisions to reduce and control discharges other than stormwater. • *Post-Construction Storm Water Management* - The SWPPP requires the development of stormwater control measures to provide ongoing protection of water resources. The plan will include permanent treatment, pollution prevention, and maintenance BMPs. • *Waste Management and Disposal* - All wastes (including equipment maintenance waste: used oil, batteries) must be disposed of as required by state and federal law. • *Maintenance, Inspection, and Repair* - The plan requires an ongoing program to insure that all controls are in place and operating as designed. • *Monitoring* - This provision requires documented inspections of the control measures. • *Reports* – MCAG will prepare an annual report on the construction project and submit this report to the RWQCB. The report must certify compliance with the SWPPP. • *Training* - Inspections, maintenance and repair must be done by trained personnel. **Mitigation Measure HWQ-1d:** Erosion control measures shall be applied to all exposed areas during construction. Erosion control measures may include the trapping of sediments within the construction area by placing barriers, such as straw bales, at the perimeter of downstream drainage points or by construction of temporary detention basins. Other methods of minimizing erosion impacts may include hydromulching and limiting the amount and length of exposure of graded soil. The temporary erosion control and water quality measures shall be defined in detail in the SWDR and SWPPP. **Mitigation Measure HWQ-1e:** In areas where the proposed roadway alignment would cross creeks and canals, a structure (such as a box culvert)	Contractor	Ongoing during construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		shall be added to convey the flow of water under the roadway. Figure 4.9-3 shows the location of these structures. Alternative 1A will require one structure across Canal Creek and one structure across Black Rascal Creek. Modified Alternative 1B will require four structures across Canal Creek, one structure across Livingston Canal, and one structure across Black Rascal Creek. The proposed interchange improvements at SR 99 (common to both alternatives) cross Canal Creek four times, two of which require new conveyance structures to be built. Design and flow rates for the conveyance structures will be determined by a final hydraulic report as approved by Merced County. Included in Table 4.9-1 are the temporary control measures that will likely be part of the project. Construction BMPs (as listed in Table 4.9-1) are temporary BMPs that contractors are required to implement to meet BCT/BATEA requirement for construction. The selected temporary BMPs are consistent with the practices required under State of California NPDES General Permit for storm water discharges associated with construction activities. Expressway construction that impacts MID rights-of-way for canals, irrigation laterals, and creeks will require a "construction agreement" and a "joint use agreement" between MID and Merced County. Compliance with the Caltrans statewide NPDES and individual local permits and/or agreements should reduce or avoid potentially substantial construction-related water quality impacts. Implementation details of these mitigation measures shall be developed and incorporated into the project design and operations prior to project construction. With proper implementation of these mitigation measures, short-term or temporary construction-related water quality impacts will be minimized.	MCAG and contractor	Detailed design phase	
HWQ-2	**Impact HWQ-2:** Spills and leaks of lubricants and other fluids associated with vehicles and equipment used during construction activities would increase the potential for pollution transported by	**Mitigation Measure HWQ-2:** Mitigation Measures HWQ-1A through HWQ-1C would reduce construction vehicle and equipment related water pollution to a less than significant level.	MCAG and contractor	Prior to construction, on going during construction, and detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	stormwater runoff into nearby creeks and storm drains.				
HWQ-3	**Impact HWQ-3:** Pollutants associated with vehicles would be deposited on the roadway during project operation and would be transported by stormwater runoff into nearby creeks and storm drains adversely affecting water quality.	**Mitigation Measure HWQ-3a:** The applicant shall prepare a SWPPP and apply for inclusion in the Caltrans NPDES permit as required under Mitigation Measure HWQ-1A. As required under the NPDES permit, the project will include both Design Pollution Prevention and Treatment BMPs to treat stormwater pollution during project operation. **Mitigation Measure HWQ-3b:** When establishing Design Pollution Prevention BMPs for the project, MCAG shall consider all of the following affects: • Downstream Effects Related to Potentially Increased Flow – The project will discharge to unlined channels. As a result, erosion control shall be applied to the ditches. There is the potential for increased sediment loads to be transported to downstream waterways; therefore permanent erosion control measures shall be applied to all new or exposed slopes. The project will cross several waterways, and there may be the potential for creating unstable channel conditions. BMPs will address the stability of channels crossed by the project • Preservation of Existing Vegetation – At all locations, preserving existing vegetation is beneficial. • Concentrated Flow Conveyance Systems – The project will: A) have the potential to cause gullying, B) create or modify existing slopes, C) be subject to roadway flooding, D) require the concentration of surface runoff, and E) require cross drains. Each of these conditions will require the proper design of the following drainage facilities to handle concentrated flows. o Ditches, berms, dikes and swales o Overside drains o Flared end sections o Outlet protection/velocity dissipation devices • Slope/Surface Protection Systems – The project will	MCAG in coordination with Caltrans MCAG	Prior to construction Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		create or modify existing slopes requiring the application of one or more of the following control measures. o Vegetated surfaces o Hard surfaces **Mitigation Measure HWQ-3c:** Detention and infiltration devices shall be implemented as approved Treatment BMPs. Soil erosion shall be primarily handled with the proper design of landscaping and the application of final ground treatment BMPs, such as planting and fiber rolls. Detention basins shall also be used to reduce the sediment and particulate matter in stormwater runoff. A detention basin is a permanent treatment BMP designed to reduce the sediment and particulate matter in stormwater runoff. The basin allows a large volume of water to enter, slowly (to prevent erosion), and limits the outflow by having small orifices (or openings) at the lowest point in the structure. Water stops flowing once it reaches a detention basin and over time particulate matter (including various pollutants) falls out of the water to the bottom of the basin Water leaves the basin through a water quality outlet structure that is designed with these orifices. Water is stored in the basin, temporarily, for enough time for pollutants and other floating sediments to settle, but not enough time for vector control issues (i.e. growth of potential disease-carrying mosquito populations) to develop. The water then is discharged to a discharge point (Canal Creek) through an outflow pipe. The rate at which the water leaves the basin is dependant on the design of the orifices. Generally, water is contained in detention basins for approximately 24 to 72 hours.	MCAG and contractor	During construction	
HWQ-4	**Impact HWQ-4:** Development of the AME project would increase pollution in groundwater since pollutants washed off the roadway may percolate into and contaminate groundwater.	**Mitigation Measure HWQ-4a:** The applicant shall prepare a SWPPP and apply for inclusion in the Caltrans NPDES permit as required under Mitigation Measure HWQ-1A, 1B, and 1C. As required under the NPDES permit and discussed under Mitigation Measures HWQ-3B and 3C, the project will include both Design Pollution Prevention and Treatment BMPs required	MCAG in coordination with Caltrans	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		to treat stormwater pollution. **Mitigation Measure HWQ-4b:** If Modified Alternative 1B is selected, groundwater quality testing shall be performed, specifically in the area of the depressed section between Green Sands Avenue and Canal Creek, to verify the presence of groundwater contaminants. If contaminants are present in the groundwater, groundwater treatment shall be required.			
HWQ-5	**Impact HWQ-5**: The AME project would convert pervious surface area into impervious surface area which would increase the amount of stormwater runoff in the project study area to a level that would exceed the capacity of existing or planned stormwater drainage systems.	**Mitigation Measure HWQ-5a:** New drainage facilities shall be constructed where needed. New roadside ditches and detention basins will be constructed to accommodated increased stormwater flows. Existing drainage systems may need to be extended or replaced if undersized. The specifications of roadside ditches will be finalized during the final phase of the project, although the ditches must be built with a minimum 4:1 side slope. The use of detention and infiltration basins and BMPs as discussed in Mitigation Measure HWQ-3C will be implemented so that untreated runoff does not adversely affect roadside ditches. Detention basins are proposed at each of the water body crossings either along the main roadway or in the loop areas. Fourteen detention basins would be required for Alternative 1A and thirteen detention basins required for Modified Alternative 1B. The construction of drainage facilities is complicated by the flat terrain and that the elevations of the receiving waters would be higher than the roadside ditches. In order to overcome the drainage challenge presented by minimal difference in elevation, installation of pumps may be required at the end of these ditches in order to drain runoff from the roadside ditches to the existing canals. The design of roadside ditches shall be based on flow data calculations by the design engineer. Final design of roadside ditches shall be approved by the Merced County Department of Public Works and the Merced Irrigation District prior to issuance of the permit to construct. Final	MCAG and contractor in coordination with the Merced County Department of Public Works and the Merced Irrigation District	During construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		Design shall be based on procedures presented in the Caltrans Highway Design Manual, Fifth Edition and the Federal Highway Administration HEC-22 publication for highway pavement drainage. **Mitigation Measure HWQ-5b:** Detention basins shall be constructed to accommodate runoff resulting from a 25-year, 24-hour storm and to collect any additional flood spill flows from nearby water bodies during major precipitation events. Additional right-of-way would be required at all the proposed outfall locations ranging from approximately 100 to 150 feet of additional right-of-way width from the edge of the pavement. Pumps shall be installed after each detention basin to lift the detained stormwater and to meter the flow that reaches each water body. Final design shall be based on procedures presented in the Caltrans Highway Design Manual, Fifth Edition and the Federal Highway Administration HEC-22 publication for highway pavement drainage and approved by the Merced County Department of Public Works and the Merced Irrigation District prior to issuance of the permit to construct.	MCAG and contractor in coordination with the Merced County Department of Public Works and the Merced Irrigation District	Prior to construction	
HWQ-6	**Impact HWQ-6:** Development of the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek would impact existing groundwater table due to its potentially high elevation at this location.	**Mitigation Measure HWQ-6:** Depending on the depth of intrusion into the groundwater table, the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek shall be designed to avoid any intrusion of groundwater into the roadway. To avoid any cross contamination or interference of groundwater movements, an underground impermeable cutoff wall shall be constructed around and below the depressed section. In addition, a reinforced concrete section for the depressed section shall also be designed to resist uplifting due to groundwater. These elements for the depressed section of Modified Alternative 1B would be evaluated during the design phase of the AME project and a feasible solution would be developed in coordination with the applicable governing agencies.	MCAG and contractor	Detailed Design Phase	
HWQ-7	**Impact HWQ-7:** If Modified Alternative 1B is selected, motorists traveling on the depressed section of	**Mitigation Measure HWQ-7:** For major precipitation events larger than the 10-year storm event, an alert system shall be installed to warn motorists traveling on the AME of potential hazards to floods within	MCAG	During construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	Alternative 1B between Green Sands Avenue and Canal Creek would be exposed to significant hazards to floods during major precipitation events.	the depressed section of Modified Alternative 1B. Road signage alerting motorists of potential flooding hazards shall be installed south of Green Sands Avenue for northbound motorists and north of Avenue Two for southbound motorists. Flashing lights shall be installed on the roadway signage that would be used if the depressed section of Modified Alternative 1B were to become flooded. In the event that flooding occurs at the depressed section of Modified Alternative 1B, the depressed section of the AME shall be closed to motorists. Traffic shall be diverted onto Green Sands Avenue and Avenue Two and then to local roads between these two points to avoid exposure to hazards to floods in the depressed section of Modified Alternative 1B.			
Hazards and Hazardous Materials					
HAZ-1	**Impact HAZ-1:** Construction of the project would require demolition of structures that may contain hazardous substances such as lead and asbestos. These substances would potentially threaten workers if not properly handled.	**Mitigation Measure HAZ-1a:** Once a final project alignment is selected, and well before permits to construct are issued, a Phase II testing report shall be completed. The Phase II shall be completed by a qualified hazards specialist as approved by the MCAG. The Phase II shall include, but not be limited to, surveys for asbestos and lead in buildings to be demolished, a work plan for demolition, and soil sampling to determine the amount and type of herbicides and pesticides in the soil from past agricultural uses in the project study area. Phase II study shall include soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and the location and contents of USTs in the project study area to the extent feasible. Soils along the railroad right of way shall be tested for heavy metals, TPH, and PAHs. Tests to be included in the Phase II study are described in Mitigation Measures HAZ-2 to HAZ-6. **Mitigation Measure HAZ-1b:** As part of the Phase II study, buildings and structures to be demolished shall be surveyed by a certified asbestos surveyor and tested for lead by an AHERA Accredited Building Inspector. A work plan for demolition will be developed and included in the Phase II report. The recommendations of the Phase II study shall be	MCAG in coordination with a qualified hazards specialist MCAG in coordination with a qualified environmental professional	Detailed Design Phase Prior to demolition and during detailed design phase as appropriate	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		incorporated into final project plans. Asbestos shall be removed and stored off-site prior to building/structure demolition by experts qualified to identify and remove asbestos. Similarly, Lead based paint will be appropriately contained off-site during the demolition process. Demolition shall comply with the California Department of Occupational Safety and Health (CAL/ OSHA) requirements regarding asbestos and lead paint removal. Asbestos is to be removed from the site and properly disposed of prior to, and as a condition of, the issuing a permit for site demolition.			
HAZ-2	**Impact HAZ-2:** Grading and earthmoving activities could expose the public or construction workers to heavy metals in the soil from nearby railroad operations.	**Mitigation Measure HAZ-2:** In the event the construction involves installation of footings within the railroad right of way, soils along the railroad right of way shall be tested as part of the Phase II study mentioned in Mitigation Measure HAZ-1 for heavy metals, TPH, and PAHs. This study will be preformed once an alignment is selected for the project and prior to the issuance of permits to construct any portion of the project near the railroad lines. The number of borings and test methods shall be documented in a work plan for the Phase II study. Remediation for these substances shall depend on the contaminant nature, level, and estimated volume of soil contamination. Impacted soils may be capped under the road, treated onsite biologically or via stabilization, or sent offsite to an approved landfill. Remediation measures shall be approved by the MCAG prior to issuance of the permit to construct.	MCAG in coordination with a qualified environmental professional	After an alignment is selected, prior to beginning construction in the vicinity of any railroad.	
HAZ-3	**Impact HAZ-3:** Grading and earthmoving activities may disturb soils that are potentially contaminated by known or unknown leaking USTs associated with farms in the project study area. Furthermore, if USTs under the project were to be abandoned, they could leak hazardous substances and create risks to	**Mitigation Measure HAZ-3:** Underground storage tanks in the project study area shall be identified during the Phase II study and removed or otherwise mitigated. USTs shall be identified by a trained environmental professional through visual observation during a site visit, in interviews with the property owners, and during review of records at the City of Atwater and or Merced County Health Department. The project engineer shall retain an environmental consultant experienced with UST removal to prepare a plan	MCAG in coordination with a qualified environmental professional	Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	human health and the environment over time.	that addresses proper removal and remediation of USTs and any adjacent contaminated soils that are identified within the proposed right-of-way. The remediation plan shall also provide a strategy for addressing any USTs presently unlisted or otherwise not identified during the Phase II, but that are found during project construction phases. This plan shall be approved by the Merced County or City of Atwater Health Departments, as applicable, prior to issuance of a grading permit. In all cases, any USTs found within the proposed right-of-way shall be safely removed and properly disposed of prior to final grading for the construction of the roadway.			
HAZ-4	**Impact HAZ-4:** Abandoned automobiles and farm equipment may have deposited substances such as TPH, BTEX, MTBE, oil, grease, associated PAHs, and lead into the soil. Abandoned farm equipment may have also leaked pesticides (including arsenic) and herbicides into the soil. Soil contaminants from abandoned automobiles and farm equipment may be present at high enough levels such that during grading and earthmoving activities disruption of the soil would pose a health risk to construction workers and the public.	**Mitigation Measure HAZ-4:** The Phase II study shall conduct soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and remediate any concentrations of hazardous materials appropriately. During the Phase II study the selected alternative shall be superimposed (with the limits of the selected right of way) on the property map to identify and expand upon areas of potential concern. A sampling plan shall be prepared and shall be approved by the Merced County or City of Atwater Health Departments, as applicable. The sampling plan shall include soil sampling around abandoned cars and farm equipment and in agricultural areas to determine the types and levels of contaminants present (if any). Once the sampling plan is approved, soil investigation will be conducted to determine specific impacts to the soil and groundwater, and mitigation measures. Results shall be included in the Phase II study. Recommendations of this study shall be implemented prior to issuance of the permit to construct. State oversight and regulatory approval of cleanup shall occur as necessary. Recommendations based on soil sampling shall be developed and incorporated into future plans. Measures may include the removal and offsite disposal of farm equipment, excavation and offsite disposal of impacted soil, and/or onsite capping of contaminated soil underneath the selected route.	MCAG in coordination with a qualified environmental professional	Detailed design phase	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
HAZ-5	**Impact HAZ-5:** Grading and earthmoving activities could expose the public or construction workers to hazardous substances in the soil deposited during agricultural processes.	**Mitigation Measure HAZ-5:** See Mitigation Measure HAZ-4 and HAZ-1A. The sampling plan shall also address the level of pesticides and herbicides in the soil from previous agricultural applications.	MCAG in coordination with a qualified environmental professional	Detailed design phase	
HAZ-6	**Impact HAZ-6:** Lighting associated with the project and the storage of hazardous materials during construction could create a safety hazard to the flight school operating at the former Castle Air Force Base since a portion of the project is within several airport compatibility zones.	**Mitigation Measure HAZ-6a:** The developer shall prepare a lighting plan to minimize construction and operational lighting such that it does not interfere with aircraft using the runway at the former Castle Air Force Base. Prior to issuance of a permit to construct the lighting plan shall be approved by MCAG and the CAED and determined to be consistent with Merced County Airport Land Use Compatibility Plan Policy 4.3.5, which does not allow lighting that would distract aircraft from the runway and create landing hazards. **Mitigation Measure HAZ-6b:** As required by the Merced County Airport Land Use Compatibility Plan Policy 4.3.2, structures within Compatibility Zone B1 above 35 feet tall require Airport Land Use Commission review. **Mitigation Measure HAZ-6c:** As required by the Merced County Airport Land Use Compatibility Plan Policy 4.2.4, except for aviation fuel, other aviation-related flammable materials and up to 2,000 gallons of nonaviation flammable materials, the aboveground storage of fuel or hazardous materials shall not occur in airport compatibility zones B1 and B2.	Contractor and MCAG MCAG MCAG	Detailed design phase Detailed design phase Detailed design phase	
Biological Resources and Wetlands					
BIO-1A	**Impact BIO-1a:** Giant Garter Snake	**Mitigation Measure BIO-1a:** Although there are no modern records for giant garter snakes in Black Rascal Creek or Canal Creek, these creeks provide suitable habitat conditions for this snake. Thus, to ensure that there would be no impacts to this snake during any dewatering activities related to creek realignment and/or construction of road crossings, avoidance measures shall be	MCAG and contractor in coordination with a qualified biologist	On going through construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		implemented when construction would be within 200 feet of Black Rascal Creek or Canal Creek. The avoidance and minimization measures are detailed in the Guidelines for Procedures and Timing of Activities Related to the Modification or Relocation of Giant Garter Snake Canal or Stream Habitat and the USFWS Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat (USFWS 1999). In addition, if a giant garter snake is found in the work area, the USFWS shall be notified and the snake will be relocated within the same waterbody, outside of the area of effect.			
BIO-1B	**Impact BIO-1b:** Vernal Pool Fairy Shrimp	**Mitigation Measure BIO-1b:** Mitigation for impacts to vernal pool fairy shrimp (or vernal pool tadpole shrimp) habitat is not be required for this project.	N/A	N/A	
BIO-1C	**Impact BIO-1c:** Hardhead	**Mitigation Measure BIO-1c:** If partial or total dewatering of Black Rascal Creek or Canal Creek is required, a dewatering plan would be reviewed and monitored by a qualified biologist. The dewatering plan will be designed to reduce impacts to hardhead to the greatest extent practicable. Appropriate measures, including the use of mesh screens, seine and dip-nets, will be implemented to salvage and otherwise reduce mortality to this species during active dewatering. Additionally, turbidity barriers will be installed in the work areas within the channels to prevent impacts to water quality downstream. Finally, a biological monitor will be present during all dewatering activities. The biological monitor will capture all native fish species including hardhead and relocate to undisturbed habitat within the same watercourse. This activity will be conducted in consultation and as approved by CDFG.	MCAG in coordination with a qualified biologist	Detailed design phase	
BIO-1D	**Impact BIO-1d:** California Tiger Salamander	**Mitigation Measure BIO-1d:** In order to offset the project's impact to potential California tiger salamander breeding habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation banks that may be available for use at the time of project construction). It is likely that the USFWS will require the applicant to purchase at least three preservation credits for every acre (or portion thereof) of potential breeding	MCAG	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		habitat impacted by the project (3:1 mitigation ratio). The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project. Prior to project implementation, the project sponsor shall purchase mitigation credits for any impacts. In addition, the USFWS has approved use of the Great Valley Conservation Bank at Flynn Ranch in Merced to jointly mitigate for impacts to California tiger salamander upland estivation/over-summering habitat and San Joaquin kit fox habitat. It is likely that the USFWS will require a 3:1 mitigation ratio for permanent impacts to "suitable" CTS upland estivation/over-summering habitats, and a 1.1: 1 mitigation ratio for temporary impacts to "suitable" CTS upland estivation/over-summering habitats. Once the final alignment is determined, the project sponsor shall purchase the appropriate number of mitigation credits for any impacts. The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project. This mitigation is not in addition to mitigation requirements for San Joaquin kit fox, rather can be combined with any requirement for these species, the greater acreage requirement for any single species being the dominant requirement. Prior to impacting potential California tiger salamander habitats, an "incidental take" permit (Section 7 consultation) would be required from USFWS. The US Army Corps of Engineers would be the Section 7 federal nexus agency for this project.			
BIO-1E	**Impact BIO-1e:** Western Spadefoot Toad	**Mitigation Measure BIO-1e:** Western spadefoot toads are known to occur at both the Vieira-Sandy Mush Conservation Bank located in Merced and the Great Valley Conservation Bank at Flynn Ranch in Merced. Consequently, it is likely that mitigation credits purchased at either of these mitigation banks to compensate for impacts to potential California tiger salamander breeding habitat would also mitigate the proposed project's impact on potential breeding habitat for the western spadefoot toad. Mitigation credits that are purchased shall be based upon a minimum of a 1:1 compensation to impacts ratio for impacts	MCAG in coordination with CDFG	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		to 0.69-acre of potential breeding habitat for western spadefoot toad. As this mitigation is not in addition to mitigation requirements for California tiger salamander, provided that a minimum of 0.69 acre of compensation credits are purchased in total for the proposed project, impacts to western spadefoot toad would be regarded as less than significant. Impacts to potential breeding habitat for the western spadefoot toad will be conducted in consultation and as approved by CDFG.			
BIO-1F	**Impact BIO-1f:** Pacific Pond Turtle	**Mitigation Measure BIO-1f:** Turbidity barriers that will be installed around the construction areas in Black Rascal Creek or Canal Creek will reduce impacts to pond turtles that may occur downstream. All Pacific pond turtles encountered during dewatering or other activities in the creeks would be salvaged, per CDFG approval, and relocated to preserved off-site habitats. The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the Pacific pond turtle. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied aquatic habitat and upland nesting habitat within the final project alignment could be impacted by the proposed project. Since avoidance of all potentially occupied habitat is not possible, mitigation would include conducting preconstruction surveys for Pacific pond turtle and avoidance of nest sites. Preconstruction surveys for turtles and their nests shall be conducted 30 days prior to any construction in or surrounding any large primary irrigation canals, creeks, Black Rascal Creek or Canal Creek. If nest sites are located adjacent to a proposed work area, the nest site plus a 50-foot buffer around the nest site shall be fenced to avoid impacts to the eggs or hatchlings which over-winter at the nest site. In addition, if nest(s) are located during surveys, moth balls (naphthalene) should be sprinkled around the vicinity of the nest (no closer than 10 feet) to mask human scent and discourage predators. Construction at the nest site and within the 50-foot buffer	MCAG in coordination with CDFG and contractor	Prior to and on going through construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		area shall be delayed until the young leave the nest (this could be a period of many months) or as otherwise advised and directed by CDFG, the agency responsible for overseeing the protection of the pond turtle. If CDFG allows translocation of any nestling pond turtles this shall be completed by a qualified biologist under the direction of CDFG. While the measures prescribed above would reduce the impacts to Pacific pond turtles to a level regarded as less than significant pursuant to the CEQA, CDFG may also require mitigation for any impacts to the turtle's habitat following completion of nesting. Any CDFG requirements would become conditions of the project that shall be implemented by the project sponsor. This mitigation is typically at a 1:1 mitigation ratio, or as otherwise determined by CDFG. Mitigation credits shall be purchased from a qualified mitigation bank if required by CDFG. This mitigation measure would reduce impacts to a level regarded as less than significant.			
BIO-1G	**Impact BIO-1g:** Nesting Raptors	**Mitigation Measure BIO-1g:** Nesting surveys shall be conducted in the spring of the year prior to construction of the project and, if construction would commence between March 1 and September 1, again 30 days prior to construction of the project. The raptor nesting surveys shall include examination of all trees and shrubs within the project area and trees and shrubs within sphere of influence of the proposed project. If nesting raptors are identified during the surveys, the dripline of the nest tree or shrub must be fenced with orange construction fencing. In addition, a 300-foot radius buffer must be fenced with orange construction fencing where this buffer intersects the expressway alignment work areas. This 300-foot buffer may be reduced if a qualified raptor biologist determines that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. At a minimum, however, the non-disturbance buffer shall be a radius of 100 feet around the nest tree or shrub. If the nest site is on an adjacent property, the portion of the buffer that occurs on the project site shall be fenced with orange construction fencing.	MCAG in coordination with a qualified biologist and contractor	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		When construction buffers are reduced from the 300 foot radius, a qualified raptor biologist shall monitor distress levels of the nesting birds for one week after project disturbance occurs. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the raptor biologist shall have the right to re-implement the full 300-foot buffer. Instances when the buffer could be reduced in size would be if the raptors were well acclimated to disturbance and/or if there were physical barriers between the nest site and the construction project that would reduce disturbance to the nesting raptors. No construction or earth-moving activity should occur within the non-disturbance buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1. Regardless, the resource agencies consider September 1 the end of the nesting period unless otherwise determined by a qualified raptor biologist. Once the raptors have completed the nesting cycle, that is the young have reached independence of the nest, no further regard for the nest site shall be required. No other compensatory mitigation is required.			
BIO-1H	**Impact BIO-1h:** Swainson's Hawk	**Mitigation Measure BIO-1h:** CDFG has prepared guidelines for conducting surveys for Swainson's hawk entitled: Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (CDFG 2000). These survey recommendations were developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reduce the potential for nest failures as a result of project activities and/or disturbances. To meet the CDFG's recommendations for mitigation and protection of Swainson's hawks in this guideline, surveys should be conducted for a half-mile radius around all project activities and should be completed for at least the two survey periods immediately prior to a project's initiation. The guidelines provide specific recommendations regarding the number of surveys based on when the project is scheduled to begin	MCAG in coordination with CDFG	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		and the time of year the surveys are conducted. If Swainson's hawks are found to be nesting on or in the immediate vicinity of the project area in the future when the proposed project is implemented, consultation with CDFG and mitigation compensation shall be required. At that time, the necessity of acquiring a Fish and Game Section 2081 management authorization should be determined. CDFG has prepared a Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California (CDFG 1994) (hereinafter the Mitigation Guidelines) that prescribes avoidance and mitigation guidelines for impacts to Swainson's hawk nesting and foraging habitats. The Mitigation Guidelines require project sponsors to replace any impacted Swainson's hawk nesting and/or foraging habitat with other suitable Swainson's hawk nesting/foraging habitat. If Swainson's hawks are found to be nesting on or within the area of influence of the project (within 1,000 feet of the project alignment), impacts to nesting Swainson's hawks would be regarded as significant and adverse, and mitigation compensation would be required. The CDFG Mitigation Guidelines states that acceptable mitigation to offset impacts to Swainson's hawk foraging habitat can be met by Fee Title acquisition of Swainson's hawk habitat, or by acquisition of the right to record a conservation easement over lands that can be managed for this hawk species (hereinafter Habitat Management Lands). Any land acquired through Fee Title would have to be donated to a suitable conservation organization for management. In addition to providing Habitat Management Lands, the project sponsor would be assessed a management fee for the long-term management of the Habitat Management Lands by a suitable conservation organization. In lieu of these mitigation measures, as approved by CDFG, the project sponsor may purchase mitigation credits commensurate with the acreage of impacts to foraging and/or nesting habitat at a CDFG approved Swainson's hawk mitigation bank.			
BIO-1I	**Impact BIO-1i:** Western Burrowing Owl	**Mitigation Measure BIO-1i-1:** A nesting survey shall be conducted for ground nesting	MCAG in coordination with a	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		raptors, such as western burrowing owl and northern harrier. The burrowing owl survey should be conducted in accordance with the survey requirements detailed in the CDFG's October 17, 1995 Staff Report on Burrowing Owl Mitigation. Surveys shall be conducted in both the breeding season (April 15-July 15) and non-breeding season (December-January) to assess use of the project area by this species. If burrowing owls are present on the project area during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 75 meter (276-foot) buffer would be required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance within the project area. This 276-foot buffer could be removed once it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest). Typically, the young fledge by August 31. This date may be earlier than August 31, or later, and would have to be determined by a qualified raptor biologist. If northern harriers are identified nesting within the project area, mitigation measures detailed above for nesting raptors should be implemented. Additionally, if burrowing owls are identified nesting onsite and would be affected by the proposed project, an upland mitigation area for burrowing owls shall be established either on- or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls that would be affected by the proposed project, with a minimum of 6.5 acres preserved per pair of owls or single owl that would be affected by the proposed project. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are found to be within the project area, the mitigation requirement shall be 2 x 6.5 = 13 acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be 3 x 6.5 = 19.5 acres). A detailed	qualified biologist and CDFG		

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		mitigation and monitoring plan shall be developed for the burrowing owl mitigation area. This plan must be prepared in coordination with CDFG, and approved by this agency. In lieu of this mitigation measure, as approved by CDFG, credit commensurate with the mitigation acreage requirements set forth above shall be purchased from a qualified burrowing owl mitigation bank.			
		Mitigation Measure BIO-1i-2: Preconstruction surveys of the project area shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted to non-habitat (e.g., graded and developed).	MCAG in coordination with a qualified biologist	No more than 30 days prior to construction	
		Mitigation Measure BIO-1i-3: If western burrowing owls must be passively relocated from the project area to remove them from harms way, these activities shall be approved by CDFG in advance. Passive relocation shall not commence before September 30th and shall be completed prior to February 1st.	MCAG in coordination with a qualified biologist and CDFG	Prior to and during construction	
		Mitigation Measure BIO-1i-4: If an upland mitigation site is designated for burrowing owls, it shall be approved as a suitable burrowing owl mitigation property by CDFG. The preserved area shall be preserved in perpetuity as wildlife habitat via recordation of a conservation easement that designates the California Department of Fish and Game (CDFG), or any other qualified conservation organization as approved by CDFG as the Grantee of the easement.	MCAG with a qualified biologist and CDFG	Prior to construction	
		Mitigation Measure 1i-5: If a conservation easement is established over burrowing owl habitat, an endowment to cover the management of the mitigation area and implementation of the mitigation and monitoring plan shall be provided by the project sponsor to the Grantee of the Conservation Easement prior to issuance of the grading permit.	MCAG	Prior to issuance of the grading permit	
BIO-1J	**Impact BIO-1j:** Common and Special-Status Nesting	**Mitigation Measure BIO-1j:** A nesting survey shall be conducted 15 days prior to	MCAG in coordination with a	15 days prior to construction as	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	Passerine Birds	commencing construction work if this work would commence between March 1 and September 1. If special-status birds, such as loggerhead shrike or tricolored blackbirds, are identified nesting within or near the project area, a 200-foot radius around the nest must be staked with bright orange construction fencing. No construction or earth-moving activity shall occur within this 200-foot staked buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by August 1. This date may be earlier than August 1, or later, and would have to be determined by a qualified ornithologist. If common (that is, not special-status) passerine birds (that is, perching birds such as American robins, scrub jays, and northern mockingbird) are identified nesting within the project area, grading activities in the immediate area shall be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the area. Typically, most passerine birds can be expected to complete nesting by July 1, with young attaining sufficient flight skills by early July.	qualified biologist	necessary	
BIO-1K	**Impact BIO-1k:** San Joaquin Kit Fox	**Mitigation Measure BIO-1k:** In order to offset the project's impact to high and medium quality potential San Joaquin kit fox habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation bank available for use at the time the project is constructed). The USFWS has approved use of this bank to jointly mitigate for impacts to California tiger salamander upland estivation/over-summering habitat and San Joaquin kit fox habitat. Mitigation credits that are purchased to compensate for permanent impacts and for temporary impacts to high and medium quality suitable kit fox habitats. The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project. It is likely that the USFWS will require a 2:1 mitigation ratio for permanent impacts to potential SJKF habitat (for medium and high quality habitat areas only), and a 0.5:1 mitigation ratio for temporary	MCAG in coordination with a qualified biologist and contractor	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		impacts to potential SJKF habitat. Once the final alignment is determined, the project sponsor shall purchase the appropriate number of mitigation credits for any impacts. Finally, avoidance and minimization measures will be implemented by the proposed project to further reduce potential impacts to the San Joaquin kit fox. An employee training program will be conducted before groundbreaking to explain the Federal Endangered Species Act and any endangered species concerns to contractors working in the area. Qualified biologists would then conduct preconstruction den surveys no more than 14 days prior to groundbreaking to ensure that potential kit fox dens are not disrupted during construction of the expressway project. If "potential dens" are located, infrared camera stations will be set up and maintained for 3 consecutive nights at den openings prior to initiation of groundbreaking activities to determine the status of the potential dens. If no kit fox is found to be using the den, groundbreaking activities would proceed unhindered. However, if a kit fox is found using a den site within an area of influence of the expressway project (i.e., within 300 feet of the proposed road alignment), the USFWS will be notified at once. Because timing is an issue, notification would be via a telephone call (and as necessary voice-mail message) to the Chief of Endangered Species in Sacramento, and the Supervisor of Environmental Services at the appropriate CDFG Regional office. If the den is a refuge site only, the project sponsor will seek permission from the USFWS (and CDFG) to passively relocate the fox(es) from the den site prior to the initiation of the groundbreaking activities. As approved, passive relocation will occur over a three day period. Should a den be found that is a natal or pupping den, and it is within an area of influence near the expressway project, the groundbreaking activities would be delayed until such time that biologists can confirm that all kit foxes have left the den site. Once the den has been vacated, an infra red triggered camera would be set at the den opening. The camera would then be checked over a 2-day period to confirm that kit foxes no longer use the den. Once this is verified, grading equipment could be moved into the area and the			

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		groundbreaking activities completed. Prior to initiating groundbreaking activities, the vehicle and equipment access routes and work area will be delineated using construction fencing. This will minimize the project-related disturbance to potential San Joaquin kit fox habitat to the maximum extent possible. During the groundbreaking activities, all project-related vehicle traffic will be restricted to established roads or access routes, and will observe a 20-mile an hour speed limit within the work areas, except on County roads and highways. A biological monitor will be present during all activities that could result in injury to San Joaquin kit fox. The biologist will have the authority to halt work, if necessary, to protect the kit fox. To prevent harm to San Joaquin kit fox, any steep-walled holes and/or trenches excavated for the project will be completely covered at the end of each workday, or escape ramps will be provided to allow any entrapped animals to escape unharmed. All pipe sections stored at the project site overnight that are four inches in diameter or greater will be inspected for San Joaquin kit fox before the pipes are moved or buried. If San Joaquin kit fox are identified in the work area at any time, the USFWS and/or CDFG will be notified and consulted before work activities resume. All trash items will be removed from the project site to reduce the potential for attracting predators of San Joaquin kit fox. Contractors will be prohibited from bringing firearms and pets to the job site. Prior to impacting San Joaquin kit fox habitat, an "incidental take" permit (Section 7 consultation) would be required from USFWS, and an "incidental take" permit (Section 2081 permit) would be required from CDFG. In lieu of such a permit, CDFG may process a "consistency determination" pursuant to Fish and Game Code §2080.1. Such a determination would indicate that the State's interests in protecting State listed species are met by the federal biological opinion (i.e., the incidental take permit) issued by USFWS and thus no Section 2081 permit is required.			
BIO-1L	**Impact BIO-1l:** California	**Mitigation Measure BIO-1l:**	MCAG in	Prior to	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	Horned Lizard	The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the California horned lizards. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied California horned lizard habitat within the project area could be impacted by the proposed project. Avoidance of potentially occupied upland burrow sites is not possible. The project sponsor will be purchasing mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation bank) to mitigate for impacts to San Joaquin kit fox habitat. Since both the San Joaquin kit fox and the California horned lizard require friable soils, it shall be assumed that mitigation land set aside for San Joaquin kit fox could also serve to provide mitigation lands for the California horned lizard. Additional mitigation measures shall include conducting preconstruction surveys for the California horned lizard prior to any site grading. All California horned lizards encountered during site grading would be salvaged, per CDFG approval, and relocated to preserved off-site habitats. Impacts to potential California horned lizard habitat would be conducted in consultation and as approved by CDFG. This mitigation measure would reduce impacts to a level regarded as less than significant.	coordination with CDFG	construction	
BIO-2	**Impact BIO-2:** Impacts to Jurisdictional Wetlands, Including Waters of the United States and the State of California	**Mitigation Measure BIO-2:** Impacts to waters of the United States and/or State will be reduced to a less-than-significant level through various means, including avoidance, minimization of impacts, and mitigation compensation. Impacts will be minimized by the use of Best Management Practices to protect avoided wetland and "other waters" in the project area, and ensure water quality in the avoided wetlands and other waters within the watershed. These practices can include installing orange construction fencing, hay waddles, and other protective measures around wetlands and other waters. During project-related grading, a biological monitor will be on-site to monitor the integrity of avoided wetlands and other waters.	MCAG in coordination RWQCB, Army Corps of Engineers, contractor and a qualified biologist	Detailed design phase on going through construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		For those wetland areas and other waters that cannot be avoided, a Mitigation and Monitoring Plan will be prepared that will provide a mitigation program to fully compensate for impacts to waters of the United States/State. To compensate for impacts to wetlands and other waters, wetlands and other waters shall be created in areas that are now upland at a 2:1 (mitigation to impacts) ratio and be consistent with requirements set forth by the Corps and the RWQCB. The new wetlands and other waters will resemble those wetlands and other waters affected by the project (known as in-kind replacement). In pool environments that will be impacted by the project, wetland plant/animal populations will be relocated by transferring topsoil from the impacted pools to the re-created pools. These topsoils would contain a seed bank of the impacted pool plant species which would germinate with fall/winter hydration in the re-created pools. The proposed wetland mitigation plan would have to meet normal requirements for mitigating impacts to wetlands and other waters, which include: • Replacement of impacted wetlands and other waters at a 2:1 ratio. For permanent wetland and other waters impacts, wetlands and other waters shall be replaced at a minimum ratio of two acres created for each acre, or fraction thereof that is permanently impacted. • Dedication of the permanently protected areas. The Corps and other regulatory agencies generally require that any new wetlands and other waters created to mitigate project impacts be set aside in a preserve in perpetuity, either through deed restrictions or conservation easements. • Establishment of a five-year monitoring program to monitor the progress of the wetland and other waters mitigation toward an established goal. Success criteria, maintenance and monitoring requirements, contingency measures and a schedule for implementation shall be specified. At the end of each monitoring year, an annual report will be submitted to the Corps, RWQCB and other			

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		resource agencies that permitted the project. This report will document the hydrological and vegetative condition of the mitigation wetlands and other waters, and will recommend remedial measures as necessary to correct deficiencies. In lieu of creating compensation wetlands and other waters, as approved by the Corps and RWQCB, the project sponsor may purchase mitigation credits from an approved mitigation bank at a 2:1 ratio or as otherwise specified by the Corps and RWQCB. Aside from the minimum replacement ratio and in perpetuity protection, various regulatory agencies may provide additional conditions and stipulations for permits. No water of the U.S. and/or State would be impacted until such time that appropriate permits are acquired for the project from the CDFG, RWQCB, and/or Corps. As proposed, impacts to wetlands and other waters within the project area will require a Section 404 permit from the Corps, authorization from the RWQCB pursuant to Section 401 of the Clean Water Act, an NOI with the SWRCB, and an SBAA from the CDFG. Conditions in permits authorized for the project by these agencies shall become conditions of the project. Implementation of the measures described above would reduce significant impacts to waters of the United States/State to a level considered less than significant pursuant to the CEQA. Any other conditions that are stipulated for wetland impacts by the CDFG, Corps and/or RWQCB shall also become conditions of project approval.			
Paleontological and Cultural Resources					
PALEO-1	**Impact PALEO-1:** Project-related ground disturbance could have adverse impacts on unknown or unrecorded significant paleontological resources, including animal and plant fossil remains.	**Mitigation Measure PALEO-1a:** In the event that paleontological resources are discovered during ground clearing operations, a qualified paleontologist shall establish a monitoring and mitigation program, including preconstruction coordination; construction monitoring; emergency discovery procedures; sampling and data recovery, if needed; preparation, identification, and analysis of the significance of fossil specimens salvaged, if any; museum storage of any specimens and data recovered; and reporting.	MCAG in coordination with a qualified paleontologist	During construction as necessary	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		Mitigation Measure PALEO-1b: Prior to construction, construction personnel involved with earth-moving activity shall be informed of the possibility of excavating paleontological resources and that such resources are protected under certain laws and regulations regarding proper notification procedures. This training should be performed by a qualified paleontologist.	MCAG in coordination with contractor	Prior to construction	
CULT-1	**Impact CULT-1:** Project construction would involve subsurface excavation and grading which could result in damage to or destruction of unrecorded archaeological resources, including Native American artifacts and/or human remains.	**Mitigation Measure CULT-1a:** If cultural resources are discovered during earthmoving or soil-disturbing activities, a monitoring program will be implemented to observe, assess, record and recover any important prehistoric features or human remains uncovered.	MCAG	During construction as necessary	
		Mitigation Measure CULT-1b: Provide a qualified, professional archaeological monitor and a qualified Native American observer in accordance with CEQA Guidelines, § 15064.5 (d) in the event that cultural resources are found during removal of the existing built environment during all initial exposure of native soil and during deep utility trenching.	MCAG	During construction as necessary	
		Mitigation Measure CULT-1c: In accordance with CEQA Guidelines, § 15064.5 (e)(1)(A)(B), in the event of the discovery or recognition of any human remains on the project site during development, there shall be no further excavation or disturbance of the site or any area reasonably suspected to overlie adjacent human remains until the coroner of the county in which the remains are discovered is to be contacted to determine that no investigation of the cause of death is required.	MCAG in coordination with a qualified cultural resource specialist and the County	During construction as necessary	
		Mitigation Measure CULT-1d: If the coroner determines the remains to be Native American: • the coroner shall contact the Native American Heritage Commission within 24 hours; • the Native American Heritage Commission shall identify the person or persons it believes to be most likely descended from the deceased Native American; and • the most likely descendent may make recommendations	MCAG in consultation with the Native American Heritage Commission	During construction as necessary	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code § 5097.98.			
CULT-2	**Impact CULT-2:** Construction of the Buhach Road overpass over SR 99 would occur in close proximity to the Buhach Catholic Church, an identified historic resource, potentially resulting in damage to, or destabilization of, the structure.	**Mitigation Measure CULT-2:** Construction work, including construction staging near the Buhach Church shall not take place within the legal parcel boundary (Assessor Parcel 025-170-001) of the church. Widening of the Buhach Road overpass would necessitate re-grading of the Church driveway but would not impair access to the main entrance of the building. Furthermore, the Church structure itself, which is the historic resource in question, would be unaffected by widening of the Buhach Road overcrossing.	Contractor	Construction phase	
CULT-3	**Impact CULT-3:** If construction of the Buhach Road overpass would require construction activities to occur on the Buhach Catholic Church property, damage to, or destabilization of the Buhach Catholic Church, an identified historic resource, could occur.	**Mitigation Measure CULT-3:** • The project proponent would develop and implement measures to protect the character-defining features of the Buhach Catholic Church from damage. Such measures would be prepared in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the California Historical Building Code. • Inadvertent damages to the character-defining features of the Buhach Catholic Church would be repaired in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the California Historical Building Code. The building and grounds would be photographed prior to construction establishing a baseline condition for assessing inadvertent damage, as described below.	MCAG	During construction as necessary	
Utilities and Service Systems					
UTIL-1	**Impact UTIL-1:** Project construction would require the demolition of several structures, including the Buhach Road overcrossing and several residential units, as	**Mitigation Measure UTIL-1:** Prior to construction, MCAG shall prepare a Solid Waste Management Plan for the project that demonstrates that at least 50 percent of project-generated solid waste is being recycled, reused or diverted from landfills. Elements of the Solid Waste Management Plan could include, but are not	MCAG in coordination with City/County Public Works	Prior to construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	well as the removal of vegetation and soil. This debris and other construction material could affect the capacity and lifespan of local landfills, and affect the ability of Merced County and the City of Atwater to meet its AB 939 reduction targets.	limited to, the following: • Recycling of metals and other recyclable materials generated during construction. • Regrinding and reuse of the concrete debris generated by demolition of the existing Buhach Road overpass. • Balancing excavated soils by reusing them in other areas, such as for fill around the foundations of elevated project features. • Removed vegetation reused, such as through mulching, or composted at a composting facility. The City of Atwater and Merced County Public Works departments shall approve the Solid Waste Management Plan prior to the issuance of any building permits. Given that the types of solid waste that would be generated are highly recyclable or green waste, such as soil and vegetation, it is anticipated a source reduction rate of 50 percent or higher is easily attainable.			
Public Services					
PS-1	**Impact PS-1:** Emergency responders from the Merced County Fire Department Station 82 on Gurr Road could be delayed or at risk from the signalized intersections proposed for the project, particularly the intersection of North Gurr Road with SR 140 and the AME.	**Mitigation Measure PS-1:** The project sponsor shall be responsible for installation of specialized traffic signal lights at all signalized intersections along the project alignment. These traffic signals shall be controllable by the Fire Department to ensure that fire apparatus may safely cross signalized intersections on a green light and that other traffic at the intersection is stopped by red lights. In addition to the specialized traffic signals, the roadway alignment shall be moved to a further distance from the existing fire station, as shown in Figure 4.14-2. A paved break in the roadway median shall also be provided to ensure adequate fire station access and response times.	MCAG in coordination with City/County emergency service providers	Construction phase	
PS-2	**Impact PS-2:** The project would result in changes in access to local roadways that could affect emergency service providers by altering the routes that are currently used to respond to service calls. This	**Mitigation Measure PS-2:** The project sponsor shall provide all emergency service providers in Merced County, and the Cities of Atwater and Merced with detailed information about changes in local roadways. This information can be used by the emergency service providers to update their response plans and to chart new routes to respond to service calls.	MCAG in coordination with City/County emergency service providers	Detailed design phase and during construction	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
	could adversely affect emergency response times.	• Prior to any demolition or construction, this information shall be submitted prior to any changes in access. • During construction, this information shall be updated every time a new access connection is completed to inform the service providers that an alternate connection is available. It is assumed that, once constructed, the AME would provide new routes for many of these calls.			
PS-3	**Impact PS-3:** Project construction may require detours and lane closures on existing roadways in the project area which may adversely affect EMS, as well as Sheriff, Police, and Fire Department response times.	**Mitigation Measure PS-3:** The project sponsor shall prepare a Traffic Management Plan that ensures coordination between construction contractor(s) and public safety providers to minimize or eliminate interference with provision of police, fire and emergency medical services. Prior to construction, the plan shall be provided to all emergency service providers within the area. Additionally, emergency service providers shall receive advance notice of all necessary lane closures and detours as a result of project construction. This plan shall be approved by the Merced County and City of Atwater Department of Public Works prior to the issuance of permits to construct the project.	MCAG in coordination with City/County Planning, Engineering, and emergency service providers	Detailed design phase	
PS-4	**Impact PS-4:** The AME would be built in close proximity to the proposed Avenue One school site, which could result in unsafe conditions for students traveling by foot or bicycle who would have to get across the AME.	**Mitigation Measure PS-4a:** Under either alternative, the section of the AME project between SR 99 and Santa Fe Drive, including the proposed intersection of Avenue Two with the AME, shall be constructed in accordance with the FHWA's Safe Route to School guidelines It is anticipated that these guidelines may include requirements for: • Designated crosswalks crossing the AME • Traffic-signals equipped with walk/don't walk signals • Bicycle lanes on Avenue One and Avenue Two • School Crossing signage Modified Alternative 1B would cross under Avenue One which would allow vehicles, pedestrians, and bicyclists on Avenue One to safely travel over the AME to access the	MCAG in consultation with the Atwater Elementary School District	Prior to beginning construction of Alternative 1B	

Impact #	Impact Statement	Mitigation Measures	Responsible Agency	Timing	Initials
		Avenue One school site. Under Alternative 1A, Avenue One would terminate on either side of the AME, ending in cul de sac on the east and west sides of the AME. Individuals traveling to and from the Avenue One school site would be required to travel south to Green Sands Avenue or north to Avenue Two to cross the AME. This would restrict the ability for some students or other individuals to travel to school using alternative transportation, such as walking or bicycling. This would create a conflict with the FHWA's Safe Routes to School guidelines, which are designed to enable and encourage children, including those with disabilities, to walk and bicycle to school and to make bicycling and walking to school a safer and more appealing transportation alternative. **Mitigation Measure PS-4b:** To provide safe pedestrian and bicycle crossing of Alternative 1A, a pedestrian overpass shall be constructed between the two cul de sacs on Avenue One on the east and west sides of Alternative 1A. Built in accordance with the Safe Route to Schools guidelines, the pedestrian overpass would allow for students to safely cross above the expressway and access the Avenue One school site. The design and configuration of these intersections and the overpass shall be developed in consultation with the AESD and approved by the Merced County Department of Public Works prior to the issuance of permits to construct this portion of Alternative 1A.			

Board of Supervisors Meeting
October 6, 2009

PL 355 – GPTA 09-002 Atwater-Merced Expressway

Submittal 8
Merced County Association of Governments (MCAG)
Adopting Resolutions

BEFORE THE
MERCED COUNTY ASSOCIATION OF GOVERNMENTS (MCAG)
RESOLUTION NO. 2009/02-19-03

In the matter of:
The Atwater-Merced Expressway

RESOLUTION CERTIFYING THE EIR FOR THE ATWATER-MERCED EXPRESSWAY

WHEREAS, the Merced County Association of Governments (MCAG) is an Association of Governments, pursuant to Government Code sections 6500 et seq.; and

WHEREAS, Section 15090 of the Guidelines for the California Environmental Quality Act requires that a final Environmental Impact Report ("EIR") be certified by the "Lead Agency" before approving the underlying project; and

WHEREAS, MCAG is the Lead Agency for the Atwater-Merced Expressway ("AME"), which is a proposed 7-mile long transportation corridor located in the northeast portion of Merced County; and

WHEREAS, the AME would connect with State Route (SR) 59 at Bellevue Road north of the City of Merced, and connect with SR 140 at Gurr Road south of the City of Atwater. The AME would cross SR 99 and include a new interchange with SR 99 west of the City of Merced; and

WHEREAS, in September 2001, the California Department of Transportation ("Caltrans") completed a Project Study Report - Project Development Study (PSR-PDS) that evaluated several possible alignments for the AME. In January 2005, MCAG was authorized by the California Transportation Commission (CTC) to take over the Project Approval/Environmental Document phase of the AME project and MCAG took over the role of lead agency for the environmental document; and

WHEREAS, the MCAG Executive Director approved the Preliminary Design Report for the AME in November of 2007, which finalized the alternative alignments that would be studied in this EIR; and

WHEREAS, MCAG issued a Notice of Preparation of an Environmental Document (NOP) on August 25, 2006 (State Clearinghouse Number 2006081138). A public scoping meeting was held on September 20, 2006 and public comment was taken on that day and continued to be received until September 25, 2006; and

WHEREAS, during the 30-day comment period ending September 25, 2006, written comments regarding the scope and content of the Draft EIR were received from regulatory agencies and interested parties. MCAG and the project team performed extensive technical review of potential environment impacts, including protocol surveys for sensitive biological species, and used these technical reports as the basis of the Draft EIR. The Draft EIR was published on March 3, 2008 and circulated for public review during a 60-day review and comment period. A Public Hearing on the Draft EIR was held on April 1, 2008. Responses to the written comments received on the Draft EIR and comments from the Public Hearing were addressed and incorporated in the AME Final EIR, which was published August 8, 2008; and

WHEREAS, after publication of the AME Final EIR, but prior to certification, several project changes were made to one of the proposed AME project alternatives. The modifications were made due to concern raised by the Atwater Elementary School District (AESD) during the public comment period of the Draft EIR regarding the impacts of Alternative 1B. As a result, MCAG decided that the Draft EIR should be revised and recirculated for a new round of public review and comment; and

WHEREAS, MCAG prepared the Recirculated Draft EIR to assess the potential significant environmental impacts of development of the AME in November of 2008, received public comments during a second public comment period and prepared the Responses to Comments Document on February 9, 2009; and

WHEREAS, the AME Final EIR incorporates the above information, as required by law, to assess the potential significant environmental impacts of development of the project.

NOW, THEREFORE, BE IT RESOLVED, that MCAG hereby certifies the AME Final EIR and finds that it was completed in compliance with the California Environmental Quality Act ("CEQA"); and be it

FURTHER RESOLVED, that the AME Final EIR was presented to the decision-making body of the lead agency (MCAG Governing Board), and that the MCAG Governing Board reviewed and considered the information contained in the AME Final EIR; and be it

FURTHER RESOLVED, that the AME Final EIR reflects the MCAG Governing Board's independent judgment and analysis.

THE FOREGOING RESOLUTION was passed and adopted by MCAG this 19th day of this February, 2009.

AYES: Directors Nelson, Pedrozo, Kelsey, Oliveira, Jones, Faul, Spriggs, Mays

NOES: None

ABSTAIN: None

ABSENT: Directors Walsh, O'Banion, Varela

ATTEST:

Signed:

Jesse Brown, Executive Director
Merced County Association of Governments

Signed:

Joe Oliveira, Chair, Merced County Association of Governments Governing Board

BEFORE THE
MERCED COUNTY ASSOCIATION OF GOVERNMENTS (MCAG)
RESOLUTION NO. 2009/03-19-02

In the matter of:
The Atwater-Merced Expressway

RESOLUTION ADOPTING CEQA FINDINGS AND STATEMENT OF OVERRIDING CONSIDERATIONS, APPROVING THE ATWATER-MERCED EXPRESSWAY PROJECT, AND FINDING CONSISTENCY OF THE ATWATER-MERCED EXPRESSWAY PROJECT WITH THE REGIONAL TRANSPORTATION PLAN

WHEREAS, the Merced County Association of Governments (MCAG) is an Association of Governments, pursuant to Government Code sections 6500 et seq.; and

WHEREAS, MCAG is a Regional Transportation Planning Agency and a Metropolitan Planning Organization, pursuant to state and federal designation; and

WHEREAS, Section 65080 of the California Government Code requires each regional transportation planning agency to prepare a regional transportation plan and update it for submission to the governing Policy Board for adoption; and

WHEREAS, 2007 Regional Transportation Plan ("RTP") was prepared in full compliance with federal guidance and also the state guidelines adopted by the California Transportation Commission; and

WHEREAS, MCAG is the Lead Agency for the Atwater-Merced Expressway ("AME"), which is a proposed 7-mile long transportation corridor located in the northeast portion of Merced County; and

WHEREAS, the AME would connect with State Route (SR) 59 at Bellevue Road north of the City of Merced, and connect with SR 140 at Gurr Road south of the City of Atwater. The AME would cross SR 99 and include a new interchange with SR 99 west of the City of Merced; and

WHEREAS, in 1997, MCAG completed the Route 99 Major Investment Study for the Merced/Atwater urbanized area. The Study evaluated population, housing, and employment growth in the urbanized area through the year 2020. The existing transportation system was modeled and impacts created by future traffic were identified. In 1998, the RTP for Merced County was completed, which designated the AME as high priority in the "Recommended Regional Improvement Project Priorities" list. The RTP was subsequently updated in 2004 and 2007. The AME is thus consistent with the RTP; and

WHEREAS, MCAG prepared the Recirculated Draft EIR to assess the potential significant environmental impacts of development of the AME in November of 2008 and issued the Responses to Comments Documents on February 9, 2009; and

WHEREAS, the Final EIR was certified by MCAG on February 19, 2009, in accordance with Section 15090 of the Guidelines for the California Environmental Quality Act (*See* MCAG Resolution #2009 / 02-19-03).

NOW, THEREFORE, BE IT RESOLVED, that MCAG hereby adopts those certain CEQA Findings and Statement of Overriding Considerations, attached hereto as Exhibit "A"; and be it

FURTHER RESOLVED, that MCAG hereby finds that the AME Project is consistent with the RTP, and directs MCAG staff to take appropriate and necessary actions to include the AME Project as approved in subsequent planning documents; and be it

FURTHER RESOLVED, that the MCAG approves the AME to be planned, constructed and maintained in accordance with the mitigation measures set forth in the Final Environmental Impact Report certified previous hereto; and be it

FURTHER RESOLVED, that MCAG advises and recommends that the County of Merced, City of Merced and City of Atwater to incorporate the AME project into their General and land use plans and new development projects.

THE FOREGOING RESOLUTION was passed and adopted by MCAG this 19th day of March 2009.

AYES: Directors Nelson, Walsh, Kelsey, O'Banion, Varela, Jones, Faul, Spriggs, Mays

NOES: None

ABSTAIN:

ABSENT: Directors Pedrozo, Oliveira

ATTEST:

Signed:

Jesse Brown, Executive Director
Merced County Association of Governments

Signed:

Joe Oliveira, Chair
Merced County Association of Governments Governing Board

Board of Supervisors Meeting
October 6, 2009

PL 355 – GPTA 09-002 Atwater-Merced Expressway

Submittal 9
Merced County Association of Governments (MCAG)
Final CEQA Findings and Statement of Overriding Considerations

MARCH 19, 2009

ATWATER-MERCED EXPRESSWAY PROJECT

FINAL CEQA FINDINGS AND STATEMENT OF OVERRIDING CONSIDERATIONS
Pursuant to Sections 15091 and 15093 of the
State CEQA Guidelines and Section 21081 of the Public Resources Code

The Final Environmental Impact Report (Final EIR) prepared by the Merced County Association of Governments (MCAG) for the Atwater-Merced Expressway Project (project) consists of the Recirculated Draft EIR (Atwater-Merced Expressway Project Recirculated Draft Environmental Impact Report, November 2008) and Responses to Comments Document (Atwater-Merced Expressway Project Recirculated Draft Environmental Impact Report Responses to Comments Document, dated February 8, 2009). The Final EIR identifies significant environmental impacts that will result from implementation of the project. However, MCAG finds that the inclusion of certain mitigation measures as part of project approval will reduce the majority of potentially significant impacts to less-than-significant levels. The impacts which are not reduced to less-than-significant levels are identified and overridden due to specific considerations that are described below.

As required by the California Environmental Quality Act (CEQA), MCAG, in adopting these Final CEQA Findings and Statement of Overriding Considerations, also adopts a Mitigation Monitoring and Reporting Program for the project. MCAG finds that the Mitigation Monitoring and Reporting Program meets the requirements of Public Resources Code Section 21081.6 by providing for the implementation and monitoring of measures intended to mitigate potentially significant effects of the project. In accordance with CEQA and the *CEQA Guidelines,* MCAG adopts these findings as part of the certification of the Final EIR for the projects. Pursuant to Public Resources Code Section 21082.1(c)(3), MCAG also finds that the Final EIR reflects the MCAG's independent judgment as the lead agency for the project.

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SECTION 1: INTRODUCTION

1.1 Statutory Requirements for Findings

Section 15091 of the *CEQA Guidelines* states that:

> *(a) No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:*
>
> *(1) Changes or alternatives have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.*
>
> *(2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.*
>
> *(3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.*

In short, CEQA requires the lead agency adopt mitigation measures or alternatives, where feasible, to avoid or mitigate significant environmental impacts that will otherwise occur with implementation of the project. Project mitigation or alternatives are not required, however, where they are infeasible or where the responsibility for modifying the project lies with another agency.[1]

For those significant effects that cannot be mitigated to a less-than-significant level, the public agency is required to find that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment.[2] The *CEQA Guidelines* sate in section 15093 that:

> *"If the specific economic, legal, social, technological, or other benefits of a propos[ed] project outweigh the unavoidable adverse environmental effects, that adverse environmental effects may be considered 'acceptable'."*

1.2 Record of Proceedings

For purposes of CEQA and the findings set forth herein, the record of proceedings for MCAG's decision on the project consists of: a) matters of common knowledge to MCAG, including, but

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[1] *CEQA Guidelines*, Section 15091(a), (b)
[2] Public Resources Code Section 21081(b)

not limited to, federal, state and local laws and regulations; and b) the following documents which are in the custody of MCAG:

- Notice of Preparation and other public notices issued by MCAG in conjunction with the project (see Appendix A of the Recirculated Draft EIR for the Notice of Preparation);
- The Public Review Recirculated Draft EIR, dated November 2008;
- All written comments submitted by agencies and members of the public during the public comment period on the Draft EIR and responses to those comments (see AME Project Responses to Comments Document);
- The Mitigation Monitoring and Reporting Program;
- All findings, statements of overriding consideration, and resolutions adopted by MCAG in connection with the project, and all documents cited or referred therein;
- All final reports, studies, memoranda, maps, correspondence, and all planning documents prepared by MCAG or the consultants, or responsible or trustee agencies with respect to: a) MCAG's compliance with CEQA; b)development of the project site; or c) MCAG's action on the project; and
- All documents submitted to MCAG by agencies or members of the public in connection with development of the project.

1.3 Organization/Format of Findings

Section 2 of these findings contains a summary description of the project, sets forth the objectives of the project, and provides related background information. Section 3 identifies the potentially significant effects of the project that were determined to be mitigation to a less-than-significant level. All numbered references identifying specific mitigation measures refer to numbered mitigation measures found in the Recirculated Draft EIR. Section 4 identifies the significant impacts that cannot be mitigated to a less-than-significant level even though all feasible mitigation measures have been identified and incorporated into the project. Section 5 identifies the project's potential environmental effects that were determined not to be significant, and do not require mitigation. Cumulative effects are discussed in Section 6. Section 7 discusses the feasibility of project alternatives and Section 8 includes MCAG's Statement of Overriding Considerations. These findings summarize the impacts and mitigation measures from the Recirculated Draft EIR, and Responses to Comments documents. Full descriptions and analyses are contained in the original documents.

SECTION 2: ATWATER-MERCED EXPRESSWAY PROJECT AREAS

The objectives for the Atwater –Merced Expressway project are listed below.

2.1 Project Description

The Atwater-Merced Expressway (AME) is a proposed 7-mile-long north-south transportation corridor located in the northeast portion of Merced County, north and west of the City of Merced, and south and East of the City of Atwater. The AME would connect with State Route (SR) 59 at Bellevue Road north of the City of Merced, and connect with SR 140 at Gurr Road south of the City of Atwater. The AME would cross SR 99 and include a new interchange with

SR 99 west of the City of Merced. Figure 3-1 depicts the general location of the Atwater-Merced Expressway project and the project study area.

In 1997, the Merced County Association of Governments (MCAG) completed the Route 99 Major Investment Study for the Merced/Atwater urbanized area. The Study evaluated population, housing, and employment growth in the urbanized area through the year 2020. The existing transportation system was modeled and impacts created by future traffic were identified. In 1998, the Regional Transportation Plan (RTP) for Merced County was completed, which designated the Atwater-Merced Expressway project (henceforth "AME" or "project") as high priority in the 'Recommended Regional Improvement Project Priorities' list. The RTP was subsequently updated in 2004 and 2007. The AME project has continued to be seen as an important part of the region's future transportation system.

In September 2001, the California Department of Transportation (Caltrans) completed a Project Study Report – Project Development Study (PSR-PDS) that evaluated several possible alignments for the AME. At the time it was thought that (Caltrans) and the Federal Highway Administration (FHWA) would be the lead agencies or the project and a joint CEQA/NEPA document would be prepared. In January 2005, MCAG was authorized by the California Transportation Commission (CTC) to take over the Project Approval/Environmental Document phase of the AME project and in March 2005, MCAG retained a consultant team to continue to study and refine the alignments identified in the PSR-PDS. The outcome of this task was to refine the possible alternative alignments to be studied in the environmental process to one primary corridor with two possible alignments. MCAG and its consultants reevaluated the projects goals in coordination with Caltrans and determined that the best course for the AME project was to pursue environmental clearance under the California Environmental Quality Act (CEQA) and not to pursue Federal NEPA clearance because federal funds for the project were deemed very limited in the future. In June 2006, the MCAG Board of Directors approved this approach for the AME project. In making this decision, MCAG took over the role of lead agency for the environmental document.

The MCAG Board of Directors approved the Preliminary Design Report for the AME in November of 2007, which finalized the alternative alignments that would be studied in this EIR. MCAG issued a Notice of Preparation of an Environmental Document (NOP) on August 25, 2006 (State Clearinghouse Number 2006081138). A public scoping meeting was held on September 20, 2006 and public comment was taken on that day and continued to be received until September 25, 2006 (the NOP and copies of all written comments on the NOP are included in Appendix A of this EIR). A notice of the meeting was posted in local newspapers prior to the meeting. Additionally, MCAG sent notification mailers to approximately 560 persons on the project mailing list that included residents in the project area.

The population in the Atwater-Merced region is projected to grow substantially between now and 2030. As growth continues, additional vehicles will place greater travel demands on the existing roadway network in the area. In order to accommodate this future growth, the objectives of the AME project are to:

- Provide additional north/south roadway capacity to accommodate existing, approved, and planned development within the Cities of Atwater and Merced Spheres of Influence, unincorporated portions of Merced County, and to the new University of California - Merced Campus;
- Improve access to the Castle Airport Development Center and the United States Penitentiary – Atwater located in unincorporated portions of Merced County;
- Create an alternate route for existing SR 59 to accommodate regional travel demand from north of Bellevue Road to SR 99 and along SR 140 from west of Gurr Road to SR 99;
- Reduce deficiencies and improve operational characteristics on SR 99 by closing the Buhach Road interchange.

A complete description of the proposed project is presented in Chapter 3 of the Recirculated Draft EIR.

2.2 Alternatives

Based on the project objectives and anticipated environmental consequences, and pursuant to Section 15126.6 of the *CEQA Guidelines*, the following project alternatives were selected for analysis:

- The **No Project Alternative**, which assumes that the AME project would not be annexed and would not be developed. The agricultural use of the project site would continue, and no development would occur on the project site.

A more detailed description of the alternatives, and required findings, are set forth in Section 7: Feasibility of Project Alternatives.

SECTION 3: EFFECTS DETERMINED TO BE MITIGATED TO LESS-THAN-SIGNIFICANT LEVELS

The Recirculated Draft EIR identified certain potentially significant effects that could result from the project. However, MCAG finds for each of the significant or potentially significant impacts identified in this section (Section 3) that based upon substantial evidence in the record, changes or alterations have been required or incorporated into the project which avoid or substantially lessen the significant effects as identified in the Final EIR[3] and, thus, that adoption of the mitigation measures set forth below will reduce these significant or potentially significant effects to less-than-significant levels. Adoption of the recommended mitigation measures will effectively make the mitigation measures part of the project.

3.1 Visual Resources

Impact VIS-1: The construction, realignment, and expansion of roadways within the project area could create new sources of daytime and nighttime lighting that could adversely affect day or nighttime views in the area.

[3] *CEQA Guidelines*, Section 15091.

Facts: As previously discussed, the majority of the existing lighting within the project area is limited to natural sources, nearby residential and commercial buildings, and vehicle traffic lighting along the existing roadways. Project construction and operation would introduce new sources of light and glare to the project area, affecting day and nighttime views.

Construction Phase

Project construction would establish new sources of daytime glare to the area. Construction machinery would be temporarily stationed within the project area during the construction phase. The reflection of sunlight on construction machinery would establish new sources of glare. This glare, however, would be temporary as construction machinery would only remain in the area during the construction phase. Although the reflective glare would introduce sources not previously found in the project area, the sources would be limited and therefore would not significantly impact daytime views in the area.

Construction would also affect nighttime views in the area through the introduction of new light sources. Construction lighting, such as overhead fluorescent light fixtures and construction machinery lighting would create sources of light not previously located within the project area. These sources of lighting would also be temporary. Those primarily affected by the new sources of lighting would be nearby residents and motorists traveling on the county roads. The existing nighttime views are limited to short-range views, as there are limited existing lighting features in the project study area. Construction lighting could cause unwanted nighttime lighting for the nearby residents. As stated before, the majority of residential developments are located to the west of Visual Segment 2. Although the lighting may negatively affect nighttime conditions for the residents in their homes, the impact of construction lighting on nighttime views could be reduced to less-than-significant with proper mitigation measures (see below).

Operational Phase

The operational phase of the project would also introduce new sources of light and glare. Daytime views of the area would be affected by the reflection of the sunlight from motor vehicles. As there would be both new and expanded roadways, more vehicles would be able to access and travel through the area, therefore establishing new sources of daytime glare. Those primarily affected by the glare would be the motorists themselves. However, the proposed alignment would not create a significant amount of additional glare, as there are existing roadways throughout the project area, and glare from moving vehicles is generally short in duration. Thus, the reflective glare from the vehicles would not produce a significant amount of glare that would create an adverse impact to daytime views of the area.

Nighttime views in the project area would be affected by the light produced by vehicle traffic lights and street lighting fixtures. Those affected by the light include the residential and commercial uses within and in proximity to the roadway alignment. As stated before, the majority of these uses are located along SR 99 and immediately adjacent to Visual Segment 2 to the west. As with construction lighting, the lighting associated with the operational phase could cause unwanted nighttime lighting for nearby residents. However, sound walls would be placed

between the residential and commercial uses, which would reduce adverse impacts that traffic and street lighting would have on nighttime views. For further discussion regarding the sound walls, refer to Section 4.6, Noise. Similar to the construction lighting, the street lighting along the AME would also allow for views of the project area that were previously unavailable at night. Overhead street lighting fixtures would be located at all proposed intersections and selected AME off-ramps. The lighting fixtures would be in accordance with Caltrans standard overhead lighting, at approximately 36 to 40 feet in height. Proper mitigation measures could reduce the lighting impacts on nighttime views to less-than-significant.

Mitigation Measure VIS-1a:
Lighting at construction sites shall be shielded and shall face downwards at lot lines so as to not be directly visible from any adjoining sensitive uses, such as residential areas, unless required to maintain safe levels of lighting for work and security, and as necessary to meet Occupational Safety and Health Administration (OSHA) standards.

Mitigation Measure VIS-1b:
Street lighting shall incorporate directional shielding so as not to shine directly on residential areas adjacent to the project site.

Findings for Impact VIS-1:

Mitigation Measure VIS-1a, which requires lighting at construction sites to be shielded downward at lot lots, will significantly reduce the amount of light that escapes from the construction sites and will protect residences from construction site lighting. The mitigation measures presented in Mitigation Measure VIS-1a are feasible and effective measures that will reduce the potential lighting impacts from the project. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure VIS-1a will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts to a less-than-significant level.

Mitigation Measure VIS-1b, which requires directional shielding to be incorporated into street lighting, will prevent light from street lights from escaping and shining onto and into local residences. The mitigation measures presented in Mitigation Measure VIS-1b are feasible and effective measures that will reduce the potential lighting impacts from the project street lights. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure VIS-1b will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts to a less-than-significant level.

Impact VIS-2: The removal of existing vegetation within Caltrans facilities could adversely affect existing visual features in these areas.

Facts: This project will require the removal of oleander and eucalyptus trees and common low-level brush within Caltrans facilities. Any removal of vegetation from the roadside will result in a noticeable change to the visual environment. Per the Caltrans Highway Design Manual, efforts

should be made during the design stage of this project to preserve as much vegetation as possible. The removal of the median oleander will also result in increased head light glare from oncoming traffic.

Mitigation Measure VIS-2: Any vegetation removal from within the state right-of-way as a result of the proposed construction activities shall be identified prior to removal and shall be replaced within project limits at a ratio approved by Caltrans. Funds shall be set aside by the project sponsor for replacement highway planting. Replacement highway planting must be installed within two years of damage or removal of the existing planting. A minimum 3-year plant establishment period will be included to assure the success of the replacement highway planting.

For any new plantings or plantings within project limits and Caltrans jurisdiction, barriers shall be installed, where possible without compromising motorist safety, in front of vegetation to avoid loss of tree and shrubs from vehicle collisions. During the construction of the project, ESA fencing shall be used to protect existing trees and shrubs will be required.

Findings for Impact VIS-2:

Mitigation Measure VIS-2 requires the identification of vegetation that will be removed from the state ROW as a result of the proposed construction and the subsequent replacement of such vegetation within the project limits, at a ratio approved by Caltrans, within two years of damage or removal of existing planting. Also, funds shall be set aside by the project sponsor for the replacement highway planting. These mitigation measures are feasible and effective measures that will reduce the project's impact on vegetation in the project ROW. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure VIS-2 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact VIS-3: The construction and modification of project features within state facilities could be inconsistent with the visual character being implemented along SR 99.

Facts: This project will also include the construction of new bridges and barriers within Caltrans facilities, particularly around the interchange of SR 99 and the AME. In order to maintain visual consistency these new structures will need to incorporate materials and design elements similar to the existing facilities and in accordance with the visual character planned for SR 99.

Mitigation Measure VIS-3: Project facilities and features along SR 99 shall be constructed with aesthetic treatments consistent with the design guidelines provided in the Route 99 Corridor Enhancement Master Plan. These design guidelines shall apply to bridges, median plantings and soundwalls on SR 99 within project limits. The aesthetic design shall be approved by Caltrans prior to modification of any state facilities. These aesthetic treatments should be coordinated through the Caltrans Landscape Architecture unit and the Bridge Aesthetics unit at Caltrans Headquarters. This coordination with Caltrans and the

incorporation of design features consistent with the Route 99 Corridor Enhancement Master Plan would reduce any impacts related to inconsistent visual features to a less-than-significant level.

Required design features are likely to include aesthetics treatments such as:

- Extended Gore Paving
- Color or architectural concrete barrier used on bridge structures
- Color or texture on slope paving under a bridge abutment
- Color or arch work on the bridge fence
- Use of a cobblestone aesthetic treatment on new soundwalls along SR 99

Findings for Impact VIS-3:

Mitigation Measure VIS-3 requires project facilities and features along SR 99 to be constructed with aesthetic treatments consistent with the design guidelines provided in the Route 99 Corridor Enhancement Plan, approved by Caltrans prior to the modification of any state facilities, and coordinated through the Caltrans Landscape Architecture unit and the Bridge Aesthetics unit at Caltrans Headquarters. These mitigation measures are feasible and effective measures that will reduce the project's impact on the visual character of SR 99. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure VIS-3 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified, to a less-than-significant level.

3.2 Traffic and Transportation

Impact TRAF-1: During construction, the project may result in inadequate emergency access.

Facts: The project is a roadway construction project providing improved roadway access to areas within Unincorporated Merced County and the City of Atwater and improved regional access that would also benefit motorists in the City of Merced. Implementation of the project would ultimately result in increased and improved emergency access. However, during the construction phase of the project, emergency access could be adversely impacted on already existing area roadways that are part of or connected to the project alignment.

Mitigation Measure TRAF-1: During construction of the AME, the project sponsor shall be required to provide a minimum number of through lanes and turning lanes open on all existing roadways to accommodate vehicular traffic. Emergency service providers in the City of Atwater, the City of Merced, and Merced County shall be notified throughout the construction phase as to any road closures or detours as lane reductions in existing roadways would impede emergency access.

Findings for Impact TRAF-1:

Mitigation Measure TRAF-1 requires the project sponsor to maintain a minimum number of through lanes and turning lanes open on all existing roadways during the construction of the AME. Furthermore, all emergency service providers in the City of Atwater, the City of Merced, and Merced County will be notified, throughout the construction phase, of any road closures and/or detours that would impede emergency access. These mitigation measures are feasible and effective measures that will reduce the project's impact emergency vehicle access by requiring the project sponsor to inform emergency responders of construction activities that would impede emergency vehicle response routes. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure TRAF-1 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

3.3 Noise

Impact N-1: Project construction would cause a substantial temporary or periodic increase in ambient noise levels, groundborne vibration, and groundborne noise levels in the project vicinity above existing levels.

Facts: Construction activities would result in temporary noise level increases at receivers along the project alignment. Road construction is anticipated to last two years. Construction equipment would likely include air compressors, paving machines, forklift trucks, loaders, pavement grinders, dump trucks, trenching machines, compactors, and backhoes. All equipment and material staging for the project would occur within adjacent parcels, existing public right-of-way, or on private property subject to landowner approval.

Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receivers. Construction activities generate considerable amounts of noise, especially when heavy equipment is used. At times, these activities would occur immediately adjacent to residential receivers. The highest maximum noise levels generated by project construction would typically range from about 90 to 98 dBA L_{max} at a distance of 50 feet from the noise source. Typical hourly average construction generated noise levels are about 79 dBA to 88 dBA L_{max} measured at a distance of 50 feet from the center of the site during busy construction periods. Noise levels described above would be expected when construction occurs in the immediate vicinity of receivers along the project alignment. Construction generated noise levels drop off at a rate of about 7.5 dBA per doubling of distance between the source and receiver. Shielding provided by buildings or terrain result in lower construction noise levels at distant receivers. Construction noise levels would at times exceed 60 dBA L_{eq} and the ambient by at least 5 dBA L_{eq} at nearby receivers.

While construction related noise would be less-than-significant, the following mitigation measures would help to further reduce temporary noise associated with construction activities.

Mitigation Measure N-1: Project Sponsor shall enforce the following actions during construction of the AME:

- Noise-generating activities at the construction site or in areas adjacent to the construction site associated with the project in any way shall be restricted to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday. Should it become necessary to work on weekends, holidays, or after 7:00 p.m., residents shall be notified and noise levels for the needed work shall be subject to a special provision that would limit noise levels from construction activities to not exceed 82 dBA at 50 feet.
- All internal combustion engine driven equipment shall be outfitted with appropriate intake and exhaust mufflers in good condition.
- "Unnecessary" idling of internal combustion engines shall be strictly prohibited.
- Staging of construction equipment shall be avoided within 200 feet of residences and all stationary noise-generating construction equipment, such as air compressors and portable power generators, shall be placed as far as practical from existing noise sensitive receivers. Temporary barriers to screen stationary noise generating equipment shall be utilized when located in areas adjoining noise sensitive land uses.
- "Quiet" air compressors and other stationary noise sources shall be utilized where technology allows such uses.
- All construction traffic to and from the project site shall be routed via designated truck routes. Construction related heavy truck traffic shall be prohibited in residential areas where feasible. Construction truck traffic shall be prohibited in the project vicinity during non-allowed hours.
- All adjacent residents to the project site shall be notified of the construction schedule in writing.
- A "noise disturbance coordinator" responsible for responding to any local complaints about construction noise shall be designated. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. A telephone number for the disturbance coordinator at the construction site shall be conspicuously posted and included in the notice sent to neighbors regarding the construction schedule. (Merced County and the City of Atwater shall be responsible for designating a noise disturbance coordinator and the contractor shall be responsible for posting the phone number and providing construction schedule notices.)
- If the Avenue One school site is open prior to or during construction of the AME project, grading operations within 500 feet of the schools site shall be coordinated with the school schedule such that major grading activities do not occur at times when school is in session. The grading plans shall indicate which areas are to be avoided to prevent disruption of school activities.

Findings for Impact N-1:

Mitigation Measure N-1, which limits the times for construction, establishes muffler regulations, prohibits unnecessary idling within 200 feet of residences, creates temporary barriers to screen station noise generating equipment from sensitive areas, requires "quiet" air compressors where possible, limits construction traffic, requires residence notification procedures, establishes a "noise disturbance coordinator", and requires coordination and limitations on activities within 500 feet of school sites, will substantially lessen the potential noise impacts on residences, schools, and other sensitive areas. These mitigation measures are feasible and effective

measures that will reduce the project's noise impacts. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure N-1 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, as discussed herein, to a less-than-significant level.

3.4 Air Quality

Impact AQ-1: The AME project would result in temporary increases in PM_{10} emissions requiring compliance with SJVAPCD's Regulation VIII.

Facts: Construction of the AME would result in numerous activities that would generate dust. Grading, earthmoving and excavation are the activities that generate the most PM_{10} emissions. While impacts arising from generation of PM_{10} would be localized and variable, construction dust impacts are considered to be potentially significant on a localized basis. Therefore, AME project construction is subject to standard mitigation as required by the SJVAPCD.

Mitigation Measure AQ-1: To control the generation of construction-related PM_{10} emissions, MCAG shall comply with SJVAPCD Regulation VIII, as summarized below:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively established of dust emissions using water, chemical stabilizer/suppressant, or covered with a tarp or other suitable cover or vegetative ground cover.
- All on-site unpaved roads and offsite-unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported on or 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.
- 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).
- 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.
- 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.
- Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.
- Limit traffic speeds on unpaved roads to 15 mph; and
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.

Conformity with the best management practices established in SJVAPCD's Regulation VIII would limit the generation and release of particulate matter resulting from construction activities. Therefore, any impacts would be less-than-significant.

Findings for Impact AQ-1:

Mitigation Measure AQ-1, which requires MCAG to comply with SJVAPCD Regulation VIII (summarized above), will substantially lessen the impacts on air quality by significantly decreasing activities that result in the PM_{10} emissions. These mitigation measures are feasible and effective measures that will reduce the project's impacts on air quality and substantially decrease PM_{10} emissions. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure AQ-1 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact AQ-2: The AME project would result in temporary impacts arising from elevated concentrations of PM_{10} and CO, as well as increased emissions of ROG's and NO_2 due to project construction.

Facts: Construction within the project site would result in numerous activities that would generate emissions from construction equipment engines that can contribute to elevated concentrations of PM_{10} and CO, as well as increased emissions of ozone precursors (ROG's and NO_2). Impacts would be localized and variable. While the SJVAPCD does not require Lead Agencies to provide detailed quantification of construction emissions, these emissions are considered to be potentially significant on a localized basis, and therefore are subject to mitigation as recommended by the SJVAPCD.

Mitigation Measure AQ-2: The AME project shall comply with San Joaquin Valley Air Pollution Control District recommended measures as listed below:

- Use of alternative fueled or catalyst diesel construction equipment
- Minimize idling time (e.g., 10 minute maximum)
- Limit the hours of operation of heavy duty equipment and/or the amount of time in use
- When feasible replace fossil-fueled equipment with electrically driven equivalent (provided they are not run via a portable generator set)
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways
- Implement activity management (e.g., rescheduling activities to reduce short term impacts)
- Comply with Rule 4641 of the SJVAPCD – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations

Conformity with the above measures will reduce emissions of PM10 and CO, as well as emissions of ROG's and NO2. Properly managing the amount of time emissions producing equipment is utilized and substituting electrical equipment for fossil fueled equipment

whenever feasible, will reduce overall emissions, reducing this impact to a less-than-significant level.

Findings for Impact AQ-2:

Mitigation Measure AQ-2, which requires MCAG to comply with SJVAPCD recommended measures (summarized above), will substantially lessen the impacts on air quality by reducing emissions of PM_{10} and CO, as well as emissions of ROG's and NO2, through properly managing the amount of time emissions producing equipment is utilized and substituting electrical equipment for fossil fueled equipment whenever feasible. These mitigation measures are feasible and effective measures that will reduce the project's impact on air quality. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure AQ-2 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact AQ-3: Construction of the AME project would result in generation of more than two tons of NO2 in non-conformance with SJVAPCD Rule 9510.

Facts: Construction of the AME project would generate substantial air pollutant emissions and is subject to Rule 9510, Indirect Source Review (ISR). The rule requires that transportation projects mitigate construction emissions by applying SJVAPCD-approved mitigation measures or by paying fees to support programs that reduce emissions. This project would likely generate two tons or more of NO_2 construction exhaust emissions per year, and is therefore subject to the Rule 9510.

Mitigation Measure AQ-3: The AME project shall comply with San Joaquin Valley Air Pollution Control District Rule 9510 by achieving:

- A 20 percent NO_2 and 45 percent PM10 reduction in exhaust emissions compared to the statewide fleet average. This can be met by implementing one or more of the following:
- Retrofitting existing equipment with control devices,
- Using cleaner fuels,
- Operating newer than average equipment,
- Payment of a mitigation fee to District to obtain reductions through grant and incentive programs.

Compliance with the above requirements will reduce emissions of NO_2 through the utilization of fuels that produce less of this pollutant and maximizing efficient use of fuel through use of newer than average equipment utilizing appropriate control devices. Furthermore, in the event that emissions targets are not met on-site through implementation of the other measures, payment of a mitigation fee to the SJVAPCD would help reduce emissions of NO_2 in other areas of the Air Basin by helping to fund more effective air quality measures elsewhere. Implementation of the above mitigation measures would reduce this impact to a less-than-significant level.

Findings for Impact AQ-3:

Mitigation Measure AQ-3, which requires MCAG to comply with SJVAPCD Rule 9510 (summarized above), will substantially lessen the impacts on air quality by reducing emissions of NO_2 through the utilization of fuels that produce less of this pollutant and maximizing efficient use of fuel through the use of newer than average equipment, which utilize appropriate control devices. If emissions targets are not met on-site through the implementation of Rule 9510, payment of a mitigation fee to the SJVAPCD will help reduce emissions of NO_2 in other areas of the Air Basin by helping to fund more effective air quality measures elsewhere. These mitigation measures are feasible and effective measures that will reduce the project's impact on air quality to a less-than-significant level through on-site or off-site mitigation. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure AQ-3 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

3.5 Geology, Seismicity, and Soils:

Impact GEO-1: During project operation, seismic related-liquefaction and lateral spreading could occur, causing destabilization of roadways, overhead structures and approaches. This could result in damage to the project and create a hazard to people on the roadway structures.

Facts: Liquefaction occurs when cohesionless, saturated soils (soils in which the space between individual particles is completely filled with water) are subject to a temporary loss of strength under the reversing, cyclic stresses associated with earthquake shaking. As a result, the ability of the soil deposit to support foundations would be reduced. Submerged cohesionless sands and silts of low relative density are the type of soils that are usually susceptible to liquefaction. Lateral spreading involves the lateral movement of large blocks of soil as a result of liquefaction in a subsurface layer.

Based on the available boring information, the project study area is generally underlain by firm to very stiff silt/sandy silt with partial cementation and very loose (at shallow depth) to very dense sand/silty sand. The very loose to medium dense sand layers at a shallow depth may be subject to liquefaction.

Ground adjustment (changes in ground level and surface soil formations), due to post-liquefaction settlement of soils after a seismic event, could occur. Any post-liquefaction settlement at abutments/piers of the bridges has the potential to cause downdrag on overhead structures and reduce the load carrying capacity of the piles. This could cause the shifting or collapse of overhead features. General ground failure resulting from liquefaction is not anticipated, but further investigations would be necessary to identify liquefaction potential as indicated in the following mitigation measure.

> **Mitigation Measure GEO-1:** Further investigation of liquefaction potential (looking at subsurface soil conditions and groundwater conditions) by a qualified geologist, certified by the State of California, shall be performed during the final engineering and design phases of

the project, once a final alignment is selected. This investigation shall include a vertical pile capacity analysis which shall consider post-liquefaction settlement. Recommendations given in this investigation shall be consistent with the Caltrans Highway Design Manual. Recommendations of this investigation shall be incorporated into the final project designs and approved by MCAG and Caltrans for work within the State's ROW prior to issuance of permits to construct.

Findings for Impact GEO-1:

Mitigation Measure GEO-1, which requires further investigation of liquefaction potential by a qualified geologist certified by the State of California, during the final engineering and design phases of the project, and the implementation of the investigation results into the final project designs, will substantially lessen the potential impacts of liquefaction. These mitigation measures are feasible and effective measures that will reduce the project's impact on liquefaction to a less-than-significant level by incorporating the results of the investigation into the final project designs. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure GEO-1 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact GEO-2: Seismic ground shaking could damage the project and cause bridge collapse which could harm people in the vicinity, including motorists.

Facts: The proximity of the project to the controlling fault allows for a low to moderate possibility of the site to experience strong ground shaking. During an earthquake, damage to the project, including bridge collapse, could result from intense ground shaking. People near the project or in their vehicles driving on the expressway or on or near one of the associated roadway improvements, could be harmed by the structural damage caused by ground shaking.

Mitigation Measure GEO-2: Once a final alignment is selected for the project, a detailed geotechnical evaluation shall be performed by a qualified geologist, certified by the State of California. This evaluation shall identify specific areas of concern for seismic ground shaking and provide mitigation measures consistent with the Caltrans Highway Design Manual. Recommended mitigation measures from this evaluation shall be incorporated into the project design and the seismic design of the project shall be approved by MCAG and Caltrans for improvements within the State's ROW prior to issuance of permits to construct.

Findings for Impact GEO-2:

Mitigation Measure GEO-2, which requires a detailed geotechnical evaluation to be performed by a qualified geologist, certified by the State of California, and the implementation of the investigation results into the final project and seismic designs, according to the terms set forth above, will substantially lessen the potential impacts of seismic ground shaking. These mitigation measures are feasible and effective measures that will reduce the project's impact on seismic ground shaking to a less-than-significant level by providing for and incorporating the results of a detailed geotechnical evaluation into the project. Pursuant to CEQA Guidelines

Section 15091(a)(1), MCAG finds that Mitigation Measure GEO-1 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact GEO-3: Unstable soils pose a threat to the structural integrity of the project's bridge structures.

Facts: Several new bridge structures are proposed for the project, which include two main interchanges at Route 99 and Santa Fe Drive, two grade separations at the Burlington Northern Santa Fe (BNSF) Railroad and Union Pacific (UP) Railroads, and several overcrossing structures. Based the dense/silty sand and high groundwater level indicated in test borings of the project study area, the use of Standard Class piles could result in the loss of structural integrity to bridge structures.

> **Mitigation Measure GEO-3:** Recommendations on foundation design shall be made in the final geotechnical evaluation, which is to be performed by a qualified geologist, certified by the State of California, during the PS&E phase. Foundation recommendations in the geotechnical evaluation shall be based on further investigation of subsurface conditions and structural design requirements. In is anticipated that recommendations could include design features that would exceed the structural integrity of Standard Class piles. These recommendations shall be approved by Caltrans and MCAG and incorporated into the project.

Findings for Impact GEO-3:

Mitigation Measure GEO-3, which requires the final geotechnical evaluation to include recommendations on foundation design based on further investigation of subsurface conditions and structural design requirements, conducted by a qualified geologist, will substantially lessen the potential impacts on the structural integrity of the project's bridge structures. These mitigation measures are feasible and effective measures that will reduce the project's impacts on the structural integrity of the project's bridge structures to a less-than-significant level. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure GEO-3 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact GEO-4: In areas where the use of fill material is required, post construction settlement could occur at project embankments since their construction would require fill to be placed on top of existing very stiff silt/sandy silt and very loose to very dense sand silty/sand. Settlement could damage the project structures, which could create hazards to motorists on the expressway.

Facts: Construction of embankments would involve the use of substantial fill (redeposited soils from on or off-site area) at some of the bridge approaches, specifically at the interchanges of the AME with Route 99 and Santa Fe Drive, and at the approaches to the grade separated overpasses of the BNSF Railroad and UP Railroad tracks. Since the on-site soil conditions consist of firm

silt/sandy silt and very loose to very dense sand/silty sand, the addition of thick layers of fill soil could result in settlement of the soils. Settlement could cause damage (cracks) to structural elements of the project, or alter the height level of elements of the project, creating hazards to drivers and passengers on the expressway.

Mitigation Measure GEO-4a:
Once a final alignment is selected for the project, a detailed geotechnical evaluation shall be performed by a qualified geologist certified by the State of California. This study shall address potential post construction settlement at project embankments and shall recommend appropriate mitigation measures consistent with Caltrans design guidelines. Caltrans standard embankment settlement period may be required from 60 days to 90 days depending upon site-specific condition as determined by the geotechnical evaluation.

Mitigation Measure GEO 4b:
Embankment fill shall be placed in accordance with the Caltrans Highway Design Manual guidelines, which requires structure approach embankment material to be compacted to a 95 percent relative compaction.

Mitigation Measure GEO 4c:
Retaining walls needed to retain approach embankments at Route 99 and Santa Fe Drive, and grade separations at the Burlington Northern Railroad and Union Pacific Railroad tracks shall be constructed of either mechanically stabilized earth [MSE] walls (the preferred option) or Caltrans standard cantilever walls. Proper backfill compaction; drainage; adequate bearing capacity; and retaining and grade separation wall type shall be determined by a qualified geologist, certified by the State of California, in the geotechnical evaluation that will be prepared for the project. Recommendations of the geotechnical evaluation shall be implemented and final designs shall be reviewed and approved by MCAG and Caltrans for improvements within the State's ROW prior to the issuance of permits to construct.

Findings for Impact GEO-4:

Mitigation Measure GEO-4a requires a detailed geotechnical evaluation to address potential post construction settlement at project embankments and provide consistent mitigation measures to remedy the settlement issues to be conducted by a qualified geologist, certified by the State of California. This will substantially lessen the potential impacts of potential post construction settlement by ensuring the institution of tailored mitigation measures at the time such impacts may be more fully investigated. These mitigation measures, along with mitigation measures GEO-4b and 4c, are feasible and effective measures that will reduce the project's impacts from post construction settlement at the project embankments. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure GEO-4a will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Mitigation Measure GEO-4b, which requires embankment fill to be placed in accordance with the Caltrans Highway Design Manual guidelines (requiring the embankment material to be

compacted to a 95 percent relative compaction), will substantially lessen the potential impacts of potential post construction settlement using the 95 percent compaction percentage. This mitigation measure, along with mitigation measures GEO-4a and 4c, are feasible and effective measures that will reduce the project's impacts from post construction settlement at the project embankments. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure GEO-4b will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Mitigation Measure GEO-4c requires retaining walls at SR 99 and Santa Fe Drive and grade separations at the Burlington Northern Railroad and Union Pacific Railroad tracks to be constructed of either mechanically stabilized earth (MSE) walls (preferred option) or Caltrans standard cantilever walls. It also requires proper backfill compaction, drainage, adequate bearing capacity, and retaining and grade separation wall types to be determined by a qualified geologist, certified by the State of California. These measures will substantially lessen the potential impacts from potential post construction settlement by ensuring that the proper support mechanisms, such as retaining walls and grade separations, are approved and constructed properly. These mitigation measures, along with mitigation measures GEO-4b and 4c, are feasible and effective measures that will reduce the project's impacts from post construction settlement at the project embankments. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure GEO-4b will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

3.6 Hydrology, Drainage, and Floodplains:

Impact HWQ-1: Construction activities would increase erosion potential by exposing soils that can be transported into nearby creeks and storm drains with stormwater runoff.

Facts: Construction of the AME would require the disturbance of approximately 393 acres of land to build Alternative 1A, or 400 acres to build Alternative 1B. Because the project would involve the disturbance of a large area of land, it will expose a large amount of soil to potential stormwater erosion. Erosion of topsoil would increase sedimentation in runoff water. This water and sediment would then drain to stormwater systems (canals and creeks) and pollute surface waters.

Because it would disturb more than one acre of land, the project shall be regulated under the NPDES Permit for Construction Activities (Order No. 99-08-DWQ, NPDES No. CAS000002), which is incorporated by reference to the Caltrans NPDES Permit, Storm Water Discharges from the State of California, Department of Transportation (Caltrans) Properties, Facilities, and Activities (Order No. 99-06-DWQ, NPDES No. CAS000003). Control measures to reduce soil erosion during construction are included in these permits and have been incorporated into Mitigation Measure HWQ-1A and HWQ-1B.

In addition to disturbance of soil, construction of the project could disturb several creeks as a roadway is built over them. The project crosses three of the major waterways found in the area:

Canal Creek, Livingston Canal, and Black Rascal Creek. Creek disturbance or alteration could lead to erosion, and sedimentation. In order to avoid these potential construction impacts, the existing flow rates and patterns of the creeks should be preserved. Mitigation Measure HWQ-1C would mitigate potential erosion and sedimentation impacts from the disturbance of streams.

Mitigation Measure HWQ-1a:
Consistent with requirements of the NPDES program, the project sponsor shall obtain an individual local permit or multiple permits (depending on phasing plan), subject to approval by the RWQCB.

Mitigation Measure HWQ-1b:
The project sponsor shall prepare a SWPPP, as required under the individual local permits that will be approved by the RWQCB. A NOI shall be filed under the local permits. To comply with the conditions of these permits, and to address the temporary water quality impacts resulting from the construction activities of this project, a SWPPP will be required before construction.

Mitigation Measure HWQ-1c:
The SWPPP required for this project shall include the following elements:

- *Project Description* – Includes maps and other information related to construction activities and potential sources of pollutants.
- *Minimum Construction Control Measures* – These may include limiting construction access routes, stabilization of areas denuded by construction, and using sediment controls and filtration. The plan will include the design of construction site Best Management Practice (BMP) requirements, per the Caltrans' Project Planning Design Guide and stormwater guidance manuals.
- *Erosion and Sediment Control* – The plan is required to contain a description of soil stabilization practices, control measures to prevent a net increase in sediment load in stormwater, controls to reduce tracking sediment onto roads, and controls to reduce wind erosion.
- *Non-Storm Water Management* – The plan will include provisions to reduce and control discharges other than stormwater.
- *Post-Construction Storm Water Management* – The SWPPP requires the development of stormwater control measures to provide ongoing protection of water resources. The plan will include permanent treatment, pollution prevention, and maintenance BMPs.
- *Waste Management and Disposal* – All wastes (including equipment maintenance waste: used oil, batteries) must be disposed of as required by state and federal law.
- *Maintenance, Inspection, and Repair* – The plan requires an ongoing program to insure that all controls are in place and operating as designed.
- *Monitoring* – This provision requires documented inspections of the control measures.
- *Reports* – MCAG will prepare an annual report on the construction project and submit this report to the RWQCB. The report must certify compliance with the SWPPP.
- *Training* – Inspections, maintenance and repair must be done by trained personnel.

Mitigation Measure HWQ-1d:

Erosion control measures shall be applied to all exposed areas during construction. Erosion control measures may include the trapping of sediments within the construction area by placing barriers, such as straw bales, at the perimeter of downstream drainage points or by construction of temporary detention basins. Other methods of minimizing erosion impacts may include hydromulching and limiting the amount and length of exposure of graded soil. The temporary erosion control and water quality measures shall be defined in detail in the SWDR and SWPPP.

Mitigation Measure HWQ-1e:
In areas where the proposed roadway alignment would cross creeks and canals, a structure (such as a box culvert) shall be added to convey the flow of water under the roadway. Figure 4.9-3 shows the location of these structures. Alternative 1A will require one structure across Canal Creek and one structure across Black Rascal Creek. Alternative 1B will require four structures across Canal Creek, one structure across Livingston Canal, and one structure across Black Rascal Creek. The proposed interchange improvements at SR 99 (common to both alternatives) cross Canal Creek four times, two of which require new conveyance structures to be built. Design and flow rates for the conveyance structures will be determined by a final hydraulic report as approved by Merced County.

Included in Table 4.9-1 are the temporary control measures that will likely be part of the project.

Construction BMPs (as listed in Table 4.9-1) are temporary BMPs that contractors are required to implement to meet BCT/BATEA requirement for construction. The selected temporary BMPs are consistent with the practices required under State of California NPDES General Permit for storm water discharges associated with construction activities.

Compliance with the Caltrans statewide NPDES and individual local permits should reduce or avoid potentially substantial construction-related water quality impacts. Implementation details of these mitigation measures shall be developed and incorporated into the project design and operations prior to project construction. With proper implementation of these mitigation measures, short-term or temporary construction-related water quality impacts will be minimized.

Findings for Impact HWQ-1:

Mitigation Measure HWQ-1, which requires the obtainment of individual local permits from the RWQCB, the preparation of a SWPPP prior to construction, erosion control measures as defined in the SWDR and SWPPP, the construction of structures (such as box culverts) to convey the flow of water under a roadway where the proposed roadway alignment would cross creeks and canals, and the implementation of Construction BMPs that are consistent with the practices required under State of California NPDES General Permit for storm water discharges associated with construction activities, will substantially lessen the potential impacts of soil erosion in creeks and storm drains. These mitigation measures are feasible and effective measures that will reduce the project's impacts on soil erosion to a less-than-significant level by requiring compliance with NPDES requirements and the preparation of a SWPPP, which will limit

construction access routes, use sediment control filtration, reduce control discharges other than stormwater, trap sediments within the construction area by placing barriers, such as straw bales, at the perimeter of downstream drainage points or by the construction of temporary detention basins, and requirement of inspections and monitoring to insure such measures are sufficient. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure HWQ-1 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact HWQ-2: Spills and leaks of lubricants and other fluids associated with vehicles and equipment used during construction activities would increase the potential for pollution transported by stormwater runoff into nearby creeks and storm drains.

Facts: Fueling and maintenance of construction vehicles would occur in the project study area during construction. There would be a risk of small accidental spills or leaks of fuels, oils, or other potentially toxic materials. An accidental release of these materials may pose a threat to water quality if contaminants enter storm drains, irrigation channels, or creeks. The magnitude of the impact from an accidental release would depend on the amount and type of material spilled. The potential for large scale spills on the roadway is discussed in Section 4.10, Hazards and Hazardous Materials. The impact discussed here would be from unreported small scale releases during construction (i.e. small amounts of fuel being spilled during vehicle refueling).

> **Mitigation Measure HWQ-2:** Mitigation Measures HWQ-1A through HWQ-1C would reduce construction vehicle and equipment related water pollution to a less-than-significant level.

Findings for Impact HWQ-2:

Mitigation Measure HWQ-2, which requires the obtainment of individual local permits from the RWQCB, the preparation of a SWPPP prior to construction, and an NOI to be filed under the local permits, will substantially lessen the potential impacts from the transportation of spills and leaks of lubricants and other fluids associated vehicles and equipment used during construction activities into nearby creeks and storm drains. These mitigation measures are feasible and effective measures that will reduce the project's impacts on nearby creeks and storm drains from spills and leaks of lubricants and other fluids associated with vehicles and equipment used during construction activities, transported by stormwater runoff, by requiring compliance with NPDES requirements and the preparation of a SWPPP, which will regulate the use of lubricants and other fluids on-site, and require inspections and monitoring to insure all controls are in place. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure HWQ-2 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact HWQ-3: Pollutants associated with vehicles would be deposited on the roadway during project operation and would be transported by stormwater runoff drains adversely affecting water quality.

Facts: Construction of the AME project would include the paving of approximately 90 acres of land. This pavement would increase the amount of impervious paved areas and stormwater runoff from the impervious roadway surface would carry roadway associated pollutants with it. This would increase the polluted stormwater runoff from the project during rain events.

Heavy metals associated with vehicle tire and brake wear, oil and grease, and air emissions are the primary toxic pollutants associated with transportation corridors. During project operation, these pollutants would be deposited from vehicles and may be carried by stormwater into nearby water bodies. The nature of these impacts depends on the uses and flow rate or volume of the receiving water, rainfall characteristics, and roadway characteristics.

Mitigation Measure HWQ-3a:
The applicant shall prepare a SWPPP and apply for inclusion in the Caltrans NPDES permit as required under Mitigation Measure HWQ-1A. As required under the NPDES permit, the project will include both Design Pollution Prevention and Treatment BMPs to treat stormwater pollution during project operation.

Mitigation Measure HWQ-3b:
When establishing Design Pollution Prevention BMPs for the project, MCAG shall consider all of the following affects:

- Downstream Effects Related to Potentially Increased Flow – The project will discharge to unlined channels. As a result, erosion control shall be applied to the ditches. There is the potential for increased sediment loads to be transported to downstream waterways; therefore permanent erosion control measures shall be applied to all new or exposed slopes. The project will cross several waterways, and there may be the potential for creating unstable channel conditions. BMPs will address the stability of channels crossed by the project
- Preservation of Existing Vegetation – At all locations, preserving existing vegetation is beneficial.
- Concentrated Flow Conveyance Systems – The project will: A) have the potential to cause gullying, B) create or modify existing slopes, C) be subject to roadway flooding, D) require the concentration of surface runoff, and E) require cross drains. Each of these conditions will require the proper design of the following drainage facilities to handle concentrated flows.
    - Ditches, berms, dikes and swales
    - Overside drains
    - Flared end sections
    - Outlet protection/velocity dissipation devices
- Slope/Surface Protection Systems – The project will create or modify existing slopes requiring the application of one or more of the following control measures.
    - Vegetated surfaces
    - Hard surfaces

Mitigation Measure HWQ-3c:

Detention and infiltration devices shall be implemented as approved Treatment BMPs. Soil erosion shall be primarily handled with the proper design of landscaping and the application of final ground treatment BMPs, such as planting and fiber rolls. Detention basins shall also be used to reduce the sediment and particulate matter in stormwater runoff.

A detention basin is a permanent treatment BMP designed to reduce the sediment and particulate matter in stormwater runoff. Water stops flowing once it reaches a detention

Findings for Impact HWQ-3:

Mitigation Measure HWQ-3, which requires the obtainment of individual local permits from the RWQCB, the preparation of a SWPPP prior to construction, and the establishment of Design Pollution Prevention BMPs, will substantially lessen the potential impacts of pollutants associated with vehicles, deposited on the roadway during project operation, and transported by stormwater runoff drains, adversely affecting water quality. These mitigation measures are feasible and effective measures that will reduce the project's impacts pollutants associated with vehicles, deposited on the roadway during project operation and transported by stormwater runoff drains, adversely affecting water quality, by the preparation of a SWPPP, the obtainment of an NPDES permit, and the implementation of Design Pollution Prevention BMPs for the project, which shall consider the downstream effects related to increased flow, existing vegetation, concentrated flow conveyance systems, and slope/surface protection systems. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure HWQ-3 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact HWQ-4: Development of the AME project would increase pollution in groundwater since pollutants washed off the roadway may percolate into and contaminate groundwater.

Facts: Pollutants from stormwater runoff accumulate during the dry summer months and the first major autumn storm can flush high concentrations of pollutants to receiving water bodies which can then percolate into groundwater. In some cases, stormwater can directly discharge directly into groundwater sources.

Mitigation Measure HWQ-4a:
The applicant shall prepare a SWPPP and apply for inclusion in the Caltrans NPDES permit as required under Mitigation Measure HWQ-1A, 1B, and 1C. As required under the NPDES permit and discussed under Mitigation Measures HWQ- 3B and 3C, the project will include both Design Pollution Prevention and Treatment BMPs required to treat stormwater pollution.

Mitigation Measure HWQ-4b:
If Modified Alternative 1B is selected, groundwater quality testing shall be performed, specifically in the area of the depressed section between Green Sands Avenue and Canal Creek, to verify the presence of groundwater contaminants. If contaminants are present in the groundwater, groundwater treatment shall be required.

Findings for Impact HWQ-4:

Mitigation Measure HWQ-4, which requires the obtainment of individual local permits from the RWQCB, the preparation of a SWPPP prior to construction, and the establishment of Design Pollution Treatment and Prevention BMPs, will substantially lessen the potential impacts of the increase pollution in groundwater from pollutants washed off the roadway and percolated into and contaminating groundwater. If Alternative 1B is selected, additional testing shall be performed and the groundwater shall be treated as required. These mitigation measures are feasible and effective measures that will reduce the project's impacts on groundwater by the preparation of a SWPPP, the obtainment of an NPDES permit, and the implementation of Design Pollution Prevention BMPs for the project, which shall properly investigate and treat polluted stormwater. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure HWQ-4 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact HWQ-5: The AME project would convert pervious surface area into impervious surface area which would increase the amount of stormwater runoff in the project study area to a level that would exceed the capacity of existing or planned stormwater drainage systems.

Facts: Construction of the AME project will include the paving of approximately 90 acres of land. Stormwater that is currently absorbed into the ground would instead runoff the impervious roadway surface and into water conveyance features that could overflow and flood nearby areas. Existing and planned stormwater drainage systems would not be sufficient to capture stormwater runoff from the AME project.

Implementation of drainage systems as discussed under Mitigation Measures HWQ-5A and 5B will accommodate stormwater flows that would result from the project. These mitigation measures will maintain the existing drainage pattern of the project study and match preconstruction flows of stormwater runoff to post construction discharge.

Mitigation Measure HWQ-5a:
New drainage facilities shall be constructed where needed. New roadside ditches and detention basins will be constructed to accommodated increased stormwater flows. Existing drainage systems may need to be extended or replaced if undersized. The specifications of roadside ditches will be finalized during the final phase of the project, although the ditches must be built with a minimum 4:1 side slope. The use of detention and infiltration basins and BMPs as discussed in Mitigation Measure HWQ-3C will be implemented so that untreated runoff does not adversely affect roadside ditches.

Detention basins are proposed at each of the water body crossings either along the main roadway or in the loop areas. Fourteen detention basins would be required for Alternative 1A and thirteen detention basins required for Modified Alternative 1B.

The construction of drainage facilities is complicated by the flat terrain and that the elevations of the receiving waters would be higher than the roadside ditches. In order to overcome the drainage challenge presented by minimal difference in elevation, installation of pumps may be required at the end of these ditches in order to drain runoff from the roadside ditches to the existing canals.

The design of roadside ditches shall be based on flow data calculations by the design engineer. Final design of roadside ditches shall be approved by the Merced County Department of Public Works and the Merced Irrigation District prior to issuance of the permit to construct. Final Design shall be based on procedures presented in the Caltrans Highway Design Manual, Fifth Edition and the Federal Highway Administration HEC-22 publication for highway pavement drainage.

Mitigation Measure HWQ-5b:
Detention basins shall be constructed to accommodate runoff resulting from a 25-year, 24-hour storm and to collect any additional flood spill flows from nearby water bodies during major precipitation events. Additional right-of-way would be required at all the proposed outfall locations ranging from approximately 100 to 150 feet of additional right-of-way width from the edge of the pavement. Pumps shall be installed after each detention basin to lift the detained stormwater and to meter the flow that reaches each water body. Final design shall be based on procedures presented in the Caltrans Highway Design Manual, Fifth Edition and the Federal Highway Administration HEC-22 publication for highway pavement drainage and approved by the Merced County Department of Public Works and the Merced Irrigation District prior to issuance of the permit to construct.

Findings for Impact HWQ-5:

Mitigation Measure HWQ-5, which requires the construction of new drainage facilities and roadside ditches and detention basins and the extension or replacement of existing drainage systems, as specified by the Merced County Department of Public Works and the Merced Irrigation District, will substantially lessen the potential impacts of the increase in stormwater runoff in the project study area to a level that exceeds the capacity of existing or planned stormwater drainage systems from the conversion of pervious surface area into impervious surface area. These mitigation measures are feasible and effective measures that will reduce the project's impacts from stormwater runoff by the construction of roadside ditches, detention basins, pumps, and other such drainage facilities discussed above, which shall properly prevent the increase in pollution from stormwater runoff from the AME. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure HWQ-5 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact HWQ-6: Development of the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek would impact existing groundwater table due to its potentially high elevation at this location.

Facts: Construction of the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek would extend approximately -20 feet below grade. At its highest point, the groundwater table could reach a depth of 10 feet below ground surface in the area proposed for the depressed section of Modified Alternative 1B. Since the groundwater elevation is potentially high, operational impacts to the groundwater could result from groundwater flow obstruction as a result of the implementation of the depressed section.

Mitigation Measure HWQ-6:
Depending on the depth of intrusion into the groundwater table, the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek shall be designed to avoid any intrusion of groundwater into the roadway. To avoid any cross contamination or interference of groundwater movements, an underground impermeable cutoff wall shall be constructed around and below the depressed section. In addition, a reinforced concrete section for the depressed section shall also be designed to resist uplifting due to groundwater. These elements for the depressed section of Modified Alternative 1B would be evaluated during the design phase of the AME project and a feasible solution would be developed in coordination with the applicable governing agencies.

Findings for Impact HWQ-6:

Mitigation Measure HWQ-6, which requires the depressed section of Modified Alternative 1B between Green Sands Avenue and Canal Creek to be designed to avoid any intrusion of groundwater into the roadway, an underground impermeable cutoff wall to be constructed around and below the depressed section, a reinforced concrete section to be designed and constructed to resist uplifting due to groundwater, and these measures to be evaluated during the design phase of the AME project, will substantially lessen the potential impacts on groundwater due to the development of the depressed section of Modified Alternative 1B. These mitigation measures are feasible and effective measures that will reduce the project's impacts on groundwater by preventing the intrusion of groundwater into the roadway. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure HWQ-6 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact HWQ-7: If Modified Alternative 1B is selected, motorists traveling on the depressed section of Alternative 1B between Green Sands Avenue and Canal Creek would be exposed to significant hazards to floods during major precipitation events.

Facts: Under Modified Alternative 1B, the new roadway would be below existing ground level between Green Sands Avenue and Canal Creek to pass under Avenue One. The approximately ½-mile depressed section of Modified Alternative 1B would have a maximum depth of approximately -20 feet below grade at its lowest point. During major precipitation events, flood waters could enter the depressed section of the roadway and interrupt traffic due to flooding. However, off-site flows north of the depressed section would be intercepted and conveyed across the AME before it reaches the depressed section. A pumping plant is proposed as part of the

project drainage design to pump storm and flood water discharge from the depressed section to the nearest water body, Canal Creek. The pumping plant would be designed for the 10-year storm event, as required by the Merced County Department of Public Works *Storm Drainage Design Manual*. However, for any precipitation events larger than the 10-year storm event, the depressed roadway may become inundated with flood water, which would expose motorists to flood hazards. To help prevent such flooding from precipitation events larger than the 10-year storm, a berm would be constructed on the western side of Modified Alternative 1B in this area to help minimize potential flood flows from entering the depressed section from the west. In addition, Mitigation Measure HWQ-5b would require the construction of detention basins to collect water from storm events and spill flows from nearby water bodies. Detention basins near the depressed section of Modified Alternative 1B would collect spill flows from Canal Creek during flood events to reduce the inundation of flood waters into the depressed section (as discussed previously in Mitigation Measure HWQ-3c). Mitigation Measure HWQ-7 would further reduce impacts to hazards to floods to a less-than-significant level.

While the depressed section of Modified Alternative 1B would expose motorists to a potential flood hazard during major precipitation events, the new bridge crossing over Black Rascal Creek under both Alternative 1A and Modified Alternative 1B would be constructed to pass 100-year flows (see location A6/B10 in Figure 4.9-3). Because the Black Rascal Creek channel is undersized, stormwater would top the banks and inundate the floodplain during a 100-year flood event. However, the proposed roadbase and bridge would be elevated in this area to a height (approximately 3-5 feet above surrounding terrain) that would prevent flooding of the roadway or bridge. Thus, at this location, the AME project would not create new risks to people in vehicles during major precipitation events.

Mitigation Measure HWQ-7:
For major precipitation events larger than the 10-year storm event, an alert system shall be installed to warn motorists traveling on the AME of potential hazards to floods within the depressed section of Modified Alternative 1B. Road signage altering motorists of potential flooding hazards shall be installed south of Green Sands Avenue for northbound motorist and north of Avenue Two for southbound motorists. Flashing lights shall be installed on the roadway signage that would be used if the depressed section of Modified Alternative 1B were to become flooded. In the event that flooding occurs at the depressed section of Modified Alternative 1B, the depressed section of the AME shall be closed to motorists. Traffic shall be diverted onto Green Sands Avenue and Avenue Two and then to local roads between these two points to avoid exposure to hazards to floods in the depressed section of Modified Alternative 1B.

Findings for Impact HWQ-7:

Mitigation Measure HWQ-7, which requires the installation of an alert system, road and flood warning signage, flashing lights, and the use of alternative routes during periods of flooding, will significantly reduce motorists' exposure to significant hazards to floods during major precipitation events. The mitigation measures presented in Mitigation Measure HWQ-7 are feasible and effective measures to reduce the potential road flooding impacts. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure VIS-1a will be

incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

3.7 Hazards and Hazardous Materials:

Impact HAZ-1: Construction of the project would require demolition of structures that may contain hazardous substances such as lead and asbestos. These substances would potentially threaten workers if not properly handled.

Facts: There is a potential that lead paint and asbestos are present in existing bridge structures, buildings, and other structures in the project area that would be removed or replaced with development of the project. Buildings built prior to 1982 most likely contain both asbestos and lead based paint. During demolition of these structures, construction workers may be exposed to asbestos and/or lead paint, which could result in a significant health hazard.

Section 19827.5 of the California Health and Safety Code requires that local agencies not issue demolition or alteration permits until the MCAG or its assignee has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. Therefore, the following mitigation measure will ensure compliance with the safety code and will reduce impacts from lead and asbestos to a less-than-significant level.

Mitigation Measure HAZ-1a:
Once a final project alignment is selected, and well before permits to construct are issued, a Phase II testing report shall be completed. The Phase II shall be completed by a qualified hazards specialist as approved by the MCAG. The Phase II shall include, but not be limited to, surveys for asbestos and lead in buildings to be demolished, a work plan for demolition, and soil sampling to determine the amount and type of herbicides and pesticides in the soil from past agricultural uses in the project study area. Phase II study shall include soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and the location and contents of USTs in the project study area to the extent feasible. Soils along the railroad right of way shall be tested for heavy metals, TPH, and PAHs. Tests to be included in the Phase II study are described in Mitigation Measures HAZ-2 to HAZ-6.

Mitigation Measure HAZ-1b:
As part of the Phase II study, buildings and structures to be demolished shall be surveyed by a certified asbestos surveyor and tested for lead by an AHERA Accredited Building Inspector. A work plan for demolition will be developed and included in the Phase II report.

The recommendations of the Phase II study shall be incorporated into final project plans. Asbestos shall be removed and stored off-site prior to building/structure demolition by experts qualified to identify and remove asbestos. Similarly, lead based paint will be appropriately contained off-site during the demolition process. Demolition shall comply with the California Department of Occupational Safety and Health (CAL/ OSHA) requirements

regarding asbestos and lead paint removal. Asbestos is to be removed from the site and properly disposed of prior to, and as a condition of, the issuing a permit for site demolition.

Findings for Impact HAZ-1:

Mitigation Measure HAZ-1 requires the Phase II report to be complete prior to construction, which shall include surveys for asbestos and lead in buildings to be demolished, a work plan for demolition, and soil sampling to determine the amount and type of herbicides and pesticides in the soil from past agricultural uses. It also requires soils along the railroad right-of-way to be tested for heavy metals. Also, buildings and structures to be demolished shall be surveyed by a certified asbestos surveyor and tested for lead by a certified AHERA inspector and the proper disposal of hazardous materials. These mitigation measures will significantly reduce the potential harmful impacts to on-site workers from the above-mentioned hazardous materials. The mitigation measures presented in Mitigation Measure HAZ-1 are feasible and effective measures to reduce the potential impacts from hazardous materials. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure HAZ-1 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce potential impacts from hazardous substances to on-site workers, to a less-than-significant level.

Impact HAZ-2: Grading and earthmoving activities could expose the public or construction workers to heavy metals in the soil from nearby railroad operations.

Facts: The project would cross the BNSF and UPRR railroad tracks. Soils below or adjacent to the tracks may be impacted from historical operations with heavy metals due to possible presence of slag ballast and total petroleum hydrocarbons as motor oil, diesel, and polynuclear aromatic hydrocarbons. Areas requiring soil testing for heavy metals TPH and PAHs have been identified.

Mitigation Measure HAZ-2: In the event the construction involves installation of footings within the railroad right of way, soils along the railroad right of way shall be tested as part of the Phase II study mentioned in Mitigation Measure HAZ-1 for heavy metals, TPH, and PAHs. This study will be performed once an alignment is selected for the project and prior to the issuance of permits to construct any portion of the project near the railroad lines. The number of borings and test methods shall be documented in a work plan for the Phase II study.

Remediation for these substances shall depend on the contaminant nature, level, and estimated volume of soil contamination. Impacted soils may be capped under the road, treated onsite biologically or via stabilization, or sent offsite to an approved landfill. Remediation measures shall be approved by the MCAG prior to issuance of the permit to construct.

Findings for Impact HAZ-2:

Mitigation Measure HAZ-2 requires the Phase II testing to incorporate soil testing for heavy metals, TPH, and PAHs from the railroad right of way. Remediation for these substances shall depend on the contaminant nature, level, and estimated volume of soil contamination, in a manner approved by MCAG. These mitigation measures will significantly reduce the potential harmful impacts to on-site workers from the above-mentioned hazardous materials. The mitigation measures presented in Mitigation Measure HAZ-2 are feasible and effective measures to reduce the potential impacts from hazardous materials. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure HAZ-2 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce potential impacts from hazardous substances to on-site workers, to a less-than-significant level.

Impact HAZ-3: Grading and earthmoving activities may disturb soils that are potentially contaminated by known or unknown leaking Underground Storage Tanks ("USTs") associated with farms in the project study area. Furthermore, if USTs under the project were to be abandoned, they could leak hazardous substances and create risks to human health and the environment over time.

Facts: As shown in Table 4.10-1, existing farms in the project study area and the alignment are known to have active USTs. Typically, farms do not have UST monitoring equipment and leaks could occur without being identified. Therefore, USTs in the project area may have undetected leaks that have contaminated the soil. Furthermore, if USTs exist in the ROW they may need to be removed prior to construction to prevent future leaks from abandonment.

Due to the age and history of agricultural activities, it is also likely that some USTs may not be located until the project is underway. Previously unidentified USTs may be found during soil excavations associated with road placement.

Mitigation Measure HAZ-3: Underground storage tanks in the project study area shall be identified during the Phase II study and removed or otherwise mitigated. USTs shall be identified by a trained environmental professional through visual observation during a site visit, in interviews with the property owners, and during review of records at the City of Atwater and/or Merced County Health Department.

The project engineer shall retain an environmental consultant experienced with UST removal to prepare a plan that addresses proper removal and remediation of USTs and any adjacent contaminated soils that are identified within the proposed right-of-way. The remediation plan shall also provide a strategy for addressing any USTs presently unlisted or otherwise not identified during the Phase II, but that are found during project construction phases. This plan shall be approved by the Merced County or City of Atwater Health Departments, as applicable, prior to issuance of a grading permit. In all cases, any USTs found within the proposed right-of-way shall be safely removed and properly disposed of prior to final grading for the construction of the roadway.

Findings for Impact HAZ-3:

Mitigation Measure HAZ-3, which requires USTs in the project study area to be identified in the Phase II report and removed or otherwise mitigated, and the preparation of a plan that addresses proper removal and remediation procedures, will significantly reduce the potential harmful impacts from the leakage of hazardous substances from USTs. The mitigation measures presented in Mitigation Measure HAZ-3 are feasible and effective measures that will reduce the potential impacts from the leakage of hazardous materials from USTs by ensuring proper mitigation measures are instituted and by providing for ongoing monitoring during construction. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure HAZ-3 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce identified impacts, to a less-than-significant level.

Impact HAZ-4: Abandoned automobiles and farm equipment may have deposited substances such as TPH, BTEX, MTBE, oil, grease, associated PAHs, and lead into the soil. Abandoned farm equipment may have also leaked pesticides (including arsenic) and herbicides into the soil. Soil contaminants from abandoned automobiles and farm equipment may be present at high enough levels such that during grading and earthmoving activities disruption of the soil would pose a health risk to construction workers and the public.

Facts: The majority of the project study area is agricultural. During the site visit several instances of abandoned automobiles and abandoned and stored farm equipment were observed. Abandoned automobiles and farm equipment have the potential to leak substances such as TPH, BTEX, MTBE, oil, grease, PAHs, lead, pesticides, herbicides, and arsenic into the soil. It is possible that these substances are present in amounts that exceed the State of California acceptable levels. If potentially harmful levels of pesticides and/or herbicides are present, grading and earthmoving activities could expose the public or construction workers to contaminated soil.

Mitigation Measure HAZ-4: The Phase II study shall conduct soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and remediate any concentrations of hazardous materials appropriately. During the Phase II study the selected alternative shall be superimposed (with the limits of the selected right of way) on the property map to identify and expand upon areas of potential concern. A sampling plan shall be prepared and shall be approved by the Merced County or City of Atwater Health Departments, as applicable. The sampling plan shall include soil sampling around abandoned cars and farm equipment and in agricultural areas to determine the types and levels of contaminants present (if any). Once the sampling plan is approved, soil investigation will be conducted to determine specific impacts to the soil and groundwater, and mitigation measures. Results shall be included in the Phase II study. Recommendations of this study shall be implemented prior to issuance of the permit to construct. State oversight and regulatory approval of cleanup shall occur as necessary.

Recommendations based on soil sampling shall be developed and incorporated into future plans. Measures may include the removal and offsite disposal of farm equipment, excavation and offsite disposal of impacted soil, and/or onsite capping of contaminated soil underneath the selected route.

Findings for Impact HAZ-4:

Mitigation Measure HAZ-4 requires the following: 1) The Phase II report must include soil sampling around abandoned vehicles and farm equipment storage areas within the project right-of-way and remediate any concentrations of hazardous materials; 2) a sampling plan prepared and approved by the appropriate agencies; and 3) a soil investigation to determine the types and levels of contaminants along with their specific impacts to the soil and groundwater, and the necessary mitigation measures. These mitigation measures will substantially lessen the potential impacts from soil contaminants from abandoned automobiles and farm equipment that are disrupted during grading and earthmoving activities. These mitigation measures are feasible and effective measures that will reduce the project's impacts from soil contaminants that would pose a health risk to construction workers and the public. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure HAZ-4 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact HAZ-5: Grading and earthmoving activities could expose the public or construction workers to hazardous substances in the soil deposited during agricultural processes.

Facts: The dominant land use within the study area is agriculture; it is likely that the soils are impacted with pesticides and herbicides as a result of historical and current farming operations. Due to the project study area's history of agricultural use, it is assumed that pesticides and herbicides have been applied to the soil. The amount and type of residue present is unknown at this time since soil testing has not been completed. It is possible that pesticide and herbicide residue levels are above State of California background levels. If potentially harmful levels of pesticides and/or herbicides are present, grading and earthmoving activities could expose the public or construction workers to contaminated soil that is hazardous to their health.

> **Mitigation Measure HAZ-5:** See Mitigation Measure HAZ-4 and HAZ-1A. The sampling plan shall also address the level of pesticides and herbicides in the soil from previous agricultural applications.

Finding for Impact HAZ-5:

Mitigation Measure HAZ-5, which requires the Phase II report to include soil sampling to address the level of pesticides and herbicides in the soil from previous agricultural applications and the necessary mitigation measures, will substantially lessen the potential impacts from soil contaminants from agricultural operations. These mitigation measures are feasible and effective measures that will reduce the project's impacts from pesticide and herbicide soil contaminants that would pose a health risk to construction workers and the public. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure HAZ-5 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact HAZ-6: Lighting associated with the project and the storage of hazardous materials during construction could create a safety hazard to the flight school operating at the former Castle Air Force Base since a portion of the project is within several airport compatibility zones.

Facts: As discussed in the policy consistency analysis of this section, a portion of the project is within the Merced County Airport Land Use Compatibility Plan. This plan identifies compatibility zones for Castle Airport and includes policies for activities within these zones that minimize potential aircraft related hazards. Policies 4.2.4 and 4.3.5 of the Merced County Airport Land Use Compatibility Plan regulate hazardous material storage and lighting use respectively.

As discussed Section 4.4, Visual Resources, the majority of existing lighting within the project area is limited to natural sources, nearby residential and commercial buildings, and vehicle traffic lighting along the existing roadways. Project construction and operation would introduce new sources of light and glare to the project area, creating new nighttime sources of light near the flight school operating at the former Castle Air Force Base. New sources of light within the airport compatibility zones may make it difficult for pilots to identify the airport runway thereby creating a safety hazard.

Temporary construction lighting, such as overhead fluorescent light fixtures and construction machinery lighting would create sources of light not previously located within the project area. New sources of light associated with the operational phase of the project would be created from vehicle lights using the expressway and from street lighting fixtures. Overhead street lighting fixtures would be located on selected AME off-ramps. The lighting fixtures would be in accordance with Caltrans standard overhead lighting, at approximately 36 to 40 feet in height and could create a physical hazard to pilots taking off and landing planes. These sources of lighting may also affect pilots looking for the landing area during the night. The impacts from new sources of light and the height of lighting structures related to airport hazards could be reduced to less-than-significant with proper mitigation measures (see below).

Aircraft related hazards can also occur from the storage of fuel or other hazardous materials. During construction, the project may use and store hazardous materials within an airport compatibility zone. Aboveground storage of flammable or hazardous materials near an airport runway could create a safety concern if an aircraft were to come in contact with these materials during an emergency landing. Mitigation Measures HAZ-6A through HAZ-6C below would mitigate this impact to a less-than-significant level.

Mitigation Measure HAZ-6a:
The developer shall prepare a lighting plan to minimize construction and operational lighting such that it does not interfere with aircraft using the runway at the former Castle Air Force Base. Prior to issuance of a permit to construct the lighting plan shall be approved by MCAG and the CAED and determined to be consistent with Merced County Airport Land Use Compatibility Plan Policy 4.3.5, which does not allow lighting that would distract aircraft from the runway and create landing hazards.

Mitigation Measure HAZ-6b:
As required by the Merced County Airport Land Use Compatibility Plan Policy 4.3.2, structures within Compatibility Zone B1 above 35 feet tall require Airport Land Use Commission review.

Mitigation Measure HAZ-6c:
As required by the Merced County Airport Land Use Compatibility Plan Policy 4.2.4, except for aviation fuel, other aviation-related flammable materials and up to 2,000 gallons of nonaviation flammable materials, the aboveground storage of fuel or hazardous materials shall not occur in airport compatibility zones B1 and B2.

Findings for Impact HAZ-6:

Mitigation Measure HAZ-6, which requires the preparation of a lighting plan to minimize construction and operational lighting, compliance with the Merced County Airport Land Use Compatibility Plan, and proper storage of aboveground fuel and hazardous material tanks, will substantially lessen the potential impacts on the flight school at the former Castle Air Force Base from project lighting and fuel and hazardous material storage. These mitigation measures are feasible and effective measures that will reduce the project's impacts on the flight school at the former Castle Air Force Base from project lighting and fuel and hazardous material storage. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure HAZ-6 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

3.8 Biological Resources and Wetlands:

Impact BIO-1: Impacts to Habitat of Sensitive Species Including Listed and Candidate Species.

Impact BIO-1C: Hardhead.

Facts: Hardhead are a California species of special concern. Suitable habitat for the hardhead is present in Black Rascal Creek and Canal Creek. The proposed project, as currently designed, will result in direct impacts to these creeks that could directly and indirectly impact hardhead. Hardhead could also be impacted during any dewatering activities related to creek realignment and/or construction of road crossings. Impacts to Black Rascal Creek and Canal Creek would be considered a potentially significant impact to potential hardhead habitat.

Mitigation Measure BIO-1C: If partial or total dewatering of Black Rascal Creek or Canal Creek is required, a dewatering plan would be reviewed and monitored by a qualified biologist. The dewatering plan will be designed to reduce impacts to hardhead to the greatest extent practicable. Appropriate measures, including the use of mesh screens, seine and dip-nets, will be implemented to salvage and otherwise reduce mortality to this species during active dewatering. Additionally, turbidity barriers will be installed in the work areas within the channels to prevent impacts to water quality downstream. Finally, a biological monitor will be present during all dewatering activities. The biological monitor will capture all native

fish species including hardhead and relocate to undisturbed habitat within the same watercourse. This activity will be conducted in consultation and as approved by CDFG.

Findings for Impact BIO-1C:

Mitigation Measure BIO-1C, which requires the preparation, review and implementation of a dewatering plan by qualified biologist if Black Rascal Creek or Canal Creek is partially or totally dewatered, and the relocation of all native fish species to undisturbed habitat within the same watercourse, will substantially lessen the potential impacts on hardhead from dewatering. These mitigation measures are feasible and effective measures that will reduce the project's impacts on hardhead by the use of mesh screens, seine and dip-nets, turbidity barriers and biological monitoring. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure BIO-1C will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact BIO-1D: California Tiger Salamander.

Facts: The California tiger salamander, a federally listed threatened species, was not identified during protocol surveys conducted in 2006-2007. Regardless, USFWS considers the protocol survey effort invalid owing to drought like condition in the winter of 2006/07. Similarly, as there was almost no rainfall that winter, not all potential breeding ponds/pools hydrated and thus larval surveys in 2007 were not conducted. Therefore, technically the protocol survey cannot be used to demonstrate absence of CTS in the project area. Accordingly, USFWS still regards portions of the project area to be suitable habitat for the California tiger salamander. Therefore, impacts to California tiger salamander must be regarded as potentially significant pursuant to CEQA.

The proposed road alignment for this expressway project has been redesigned in order to avoid direct impacts to potential CTS breeding habitats to the greatest extent possible. A large pond that was partially impacted by the originally proposed road alignment of Belcher Road was modified to avoid this feature to the greatest extent possible. Minimal impacts to a small section of the northern portion of this pond are unavoidable, since the new alignment of Belcher Road plans to avoid the two residences and the new small business building that are located just north of the proposed new alignment of Belcher Road. In total, the proposed project will result in direct impacts to a portion of the large pond (0.23-acre) and to two small detention basin located just north of Bellevue Road (0.69-acre). Therefore, the total direct impact to potential CTS breeding habitat will be 0.92-acre; both Alignment 1A and 1B will result in the same extent of impact these features. All potential breeding habitats are surrounded by highly manipulated areas and therefore the value of surrounding habitats as estivation/over-summering habitat is very low.

In order to determine the extent of project-related impacts to potential CTS upland estivation/oversummering habitat, all upland areas within the project area as classified as either providing "suitable" or "unsuitable" CTS over-summering habitat. Areas classified as "suitable" upland over-summering habitat include grazed grassland areas, ruderal areas, and horse pastures.

Areas considered to be "unsuitable" oversummering habitat include irrigated pastures, and other areas that are highly manipulated such as permanent crops (strawberry fields), rotational crops (corn and hay crops subject to frequent discing), and urban areas (existing roads, front yards and houses/buildings).

Construction of Alignment 1A would impact a total of 264.1 acres of upland area (excluding established urban areas). Of these 264.1 acres, 6.06 acres consist of grazed grassland, ruderal, or horse pasture that would be considered to provide "suitable" upland estivation/over-summering CTS habitat. The remaining upland areas that would be impacted by Alignment 1A include irrigated pastures, permanent crops, or rotational crops areas that are not considered to provide suitable upland estivation/over-summering CTS habitat.

Construction of Alignment 1B would result in impacts to a total of 270.2 acres of upland habitat (excluding established urban areas), of which 34.3 acres consists of habitats that are considered to provide "suitable" CTS upland estivation/over-summering habitat. Remaining upland areas would not be considered to provide suitable upland estivation/over-summering habitat. Impacts to potential upland estivation/over-summering California tiger salamander habitat along either alignment would be regarded as potentially significant pursuant to CEQA.

Mitigation Measure BIO-1D: In order to offset the project's impact to potential California tiger salamander breeding habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation banks that may be available for use at the time of project construction). It is likely that the USFWS will require a 3:1 mitigation ratio for permanent impacts to "suitable" CTS upland estivation/over-summering habitats, and a 1.1:1 mitigation ratio for temporary impacts to "suitable" CTS upland estivation/over-summering habitats. Once the final alignment is determined, the project sponsor shall purchase the appropriate number of mitigation credits for any impacts.

The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project. This mitigation is not in addition to mitigation requirements for San Joaquin kit fox, rather can be combined with any requirement for these species, the greater acreage requirement for any single species being the dominant requirement.

Findings for Impact BIO-1D:

Mitigation Measure BIO-1D, which requires the purchase of mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation banks) in an amount consistent with USFWS requirements for the project, will substantially lessen the potential impacts from the project on the California tiger salamander. These mitigation measures are feasible and effective measures that will reduce the project's impacts on the California Tiger Salamander through off-site mitigation. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure BIO-1D will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact BIO-1E: Western Spadefoot Toad.

Facts: The western spadefoot toad is a California species of special concern that was identified in the project area. The current alignment(s) of the proposed expressway project along Bellevue Road will result in impacts 0.68-acre of potential breeding habitat for western spadefoot toad. Impacts to western spadefoot toad habitat from the proposed project would be a significant impact pursuant to CEQA.

> **Mitigation Measure BIO-1E:** Western spadefoot toads are known to occur at both the Vieira-Sandy Mush Conservation Bank located in Merced and the Great Valley Conservation Bank at Flynn Ranch in Merced. Consequently, it is likely that mitigation credits purchased at either of these mitigation banks to compensate for impacts to potential California tiger salamander breeding habitat would also mitigate the proposed project's impact on potential breeding habitat for the western spadefoot toad. Mitigation credits that are purchased shall be based upon a minimum of a 1:1 compensation to impacts ratio for impacts to 0.69-acre of potential breeding habitat for western spadefoot toad. As this mitigation is not in addition to mitigation requirements for California tiger salamander, provided that a minimum of 0.69 acre of compensation credits are purchased in total for the proposed project, impacts to western spadefoot toad would be regarded as less-than-significant. Impacts to potential breeding habitat for the western spadefoot toad will be conducted in consultation and as approved by CDFG.

Findings for Impact BIO-1E:

Mitigation Measure BIO-1E, which requires the purchase of mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced or the Vieira-Sandy Mush Conservation Bank (or other USFWS-approved mitigation banks) in the amount specified above, will substantially lessen the potential impacts from the project on the western spadefoot toad. These mitigation measures are feasible and effective measures that will reduce the project's impacts on the western spadefoot toad through off-site mitigation. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure BIO-1E will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact BIO-1F: Pacific Pond Turtle.

Facts: The Pacific pond turtle is a California species of special concern that is known to occur in the project area. Pacific pond turtles were observed in several of the large irrigation canals and ditches within the project area. Alternative 1A of the expressway project would impact 2.19 acres of aquatic habitat occupied by this species, and Alternative 1B would impact 5.43 acres of aquatic habitat occupied by this species. The proposed project may also impact potentially occupied upland burrowing habitat. Impacts to individual Pacific pond turtles would be regarded as a significant impact pursuant to CEQA.

Mitigation Measure BIO-1F: Turbidity barriers that will be installed around the construction areas in Black Rascal Creek or Canal Creek will reduce impacts to pond turtles that may occur downstream. All Pacific pond turtles encountered during dewatering or other activities in the creeks would be salvaged, per CDFG approval, and relocated to preserved off-site habitats.

The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the Pacific pond turtle. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied aquatic habitat and upland nesting habitat within the final project alignment could be impacted by the proposed project. Since avoidance of all potentially occupied habitat is not possible, mitigation would include conducting preconstruction surveys for Pacific pond turtle and avoidance of nest sites. Preconstruction surveys for turtles and their nests shall be conducted 30 days prior to any construction in or surrounding any large primary irrigation canals, creeks, Black Rascal Creek or Canal Creek. If nest sites are located adjacent to a proposed work area, the nest site plus a 50-foot buffer around the nest site shall be fenced to avoid impacts to the eggs or hatchlings which over-winter at the nest site. In addition, if nest(s) are located during surveys, moth balls (naphthalene) should be sprinkled around the vicinity of the nest (no closer than 10 feet) to mask human scent and discourage predators.

Construction at the nest site and within the 50-foot buffer area shall be delayed until the young leave the nest (this could be a period of many months) or as otherwise advised and directed by CDFG, the agency responsible for overseeing the protection of the pond turtle. If CDFG allows translocation of any nestling pond turtles this shall be completed by a qualified biologist under the direction of CDFG. While the measures prescribed above would reduce the impacts to Pacific pond turtles to less-than-significant level pursuant to the CEQA, CDFG may also require mitigation for any impacts to the turtle's habitat following completion of nesting. Any CDFG requirements would become conditions of the project that shall be implemented by the project sponsor. This mitigation is typically at a 1:1 mitigation ratio, or as otherwise determined by CDFG. Mitigation credits shall be purchased from a qualified mitigation bank if required by CDFG. This mitigation measure would reduce impacts to a less-than-significant level.

Findings for Impact BIO-1F:

Mitigation Measure BIO-1F, which requires turbidity barriers to installed around the construction areas in Black Rascal Creek and Canal Creek, preconstruction surveys for nest sites, the postponement of construction activities at nest sites until the young leave the nest, and the purchase of mitigation credits as required, will substantially lessen the potential impacts from the project on the Pacific pond turtle. These mitigation measures are feasible and effective measures that will reduce the project's impacts Pacific pond turtle. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure BIO-1F will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact BIO-1G: Nesting Raptors.

Facts: Suitable nesting habitats for white-tailed kite, northern harrier, Cooper's hawk, red-tailed hawk, red shouldered hawk, Swainson's hawk, western burrowing owl, barn owl, and great horned owl all have been observed within the proposed project area and likely nest within the project area. Nesting surveys conducted for these species in 2007 identified that red-tailed hawks and red shouldered hawks nest within the project area. Since all of these species are mobile and often change nest sites from year to year, these raptors could nest within the project area or within a zone of influence of the project in the future. All raptors (that is, birds of prey) are also protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their nests, eggs, and young are protected under California Fish and Game Codes Sections 3503, 3503.5. The white-tailed kite is fully protected under the California Fish and Game Code (3511).

Impacts to nesting raptors are regarded as potentially significant pursuant to CEQA. Potential impacts to these species from the proposed project could include loss of nesting habitat, disturbance to nesting birds, and possibly death of adults and/or young. Impacts to unoccupied nesting habitats for these species would not be considered significant as there are other local and regional nesting habitats available for use by these species that could be used in subsequent nesting seasons.

Since the Swainson's hawk is a state listed species it is discussed in separate impact and mitigation sections below. Similarly, since the western burrowing owl is a California species of special concern that has formal CDFG mitigation requirements, it too is discussed in sections below.

Mitigation Measure BIO-1G: Nesting surveys shall be conducted in the spring of the year prior to construction of the project and, if construction would commence between March 1 and September 1, again 30 days prior to construction of the project. The raptor nesting surveys shall include examination of all trees and shrubs within the project area and trees and shrubs within sphere of influence of the proposed project.

If nesting raptors are identified during the surveys, the dripline of the nest tree or shrub must be fenced with orange construction fencing. Similarly, a 300-foot radius buffer must be fenced with orange construction fencing where this buffer intersects the expressway alignment work areas. This 300-foot buffer may be reduced if a qualified raptor biologist determines that the nesting raptors are acclimated to people and disturbance, and otherwise would not be adversely affected by construction activities. At a minimum, however, the non-disturbance buffer shall be a radius of 100 feet around the nest tree or shrub. If the nest site is on an adjacent property, the portion of the buffer that occurs on the project site shall be fenced with orange construction fencing.

When construction buffers are reduced from the 300 foot radius, a qualified raptor biologist shall monitor distress levels of the nesting birds for one week after project disturbance occurs. If at any time the nesting raptors show levels of distress that could cause nest failure or abandonment, the raptor biologist shall have the right to re-implement the full 300-foot buffer. Instances when the buffer could be reduced in size would be if the raptors were well

acclimated to disturbance and/or if there were physical barriers between the nest site and the construction project that would reduce disturbance to the nesting raptors. No construction or earth-moving activity should occur within the non-disturbance buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 1. Regardless, the resource agencies consider September 1 the end of the nesting period unless otherwise determined by a qualified raptor biologist. Once the raptors have completed the nesting cycle, that is the young have reached independence of the nest, no further regard for the nest site shall be required. No other compensatory mitigation is required.

Findings for Impact BIO-1G:

Mitigation Measure BIO-1G requires nesting surveys to be conducted to determine if there are nesting raptors in the project area. If there are nesting raptors, the nest tree or shrub and a 300-foot buffer around the nest site must be fenced. The buffer area may only be reduced if the proper procedures, outlined above, are followed, and no construction activity may occur within the non-disturbance area until the young have fledged. These measures will substantially lessen the potential impacts from the project on nesting raptors. Moreover, these mitigation measures are feasible and effective measures that will reduce the project's impacts on nesting raptors by preserving their nest sites and by ensuring proper monitoring. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure BIO-1G will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact BIO-1H: Swainson's Hawk.

Facts: Based on the California Department of Fish and Game's (CDFG) Natural Diversity Database, RareFind 3.1 application (CNDDB), there is a new (July 2007) record for nesting Swainson's hawk that is located within the project area (CNDDB Occurrence No. 1690). In addition, CDFG staff states that it is highly probable that this species nests within the project area (pers. comm. Ms. Annee Ferranti (CDFG) and Ms. Hope Kingma (Monk & Associates) on August 21, 2006). The trees within the project area provide suitable nesting habitat for this species. The fallow fields and hay fields provide suitable foraging habitat for this species. Swainson's hawks were observed in the project area during the wildlife surveys conducted in 2006 and 2007.

Since Swainson's hawks are known to nest within the proposed project area, implementation of the expressway project would be viewed by CDFG as a direct impact to the Swainson's hawk. Nest site disturbance which results in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates), may ultimately result in the take (killing) of nestling or fledgling Swainson's hawks incidental to otherwise lawful activities. The taking of Swainson's hawks in this manner can be viewed by the CDFG as a violation of the Section 2080 of the Fish and Game Code. This interpretation of take has been judicially affirmed by the landmark appellate court decision pertaining to CESA (CDFG v. ACID, 8 CA App.4, 41554) (CDFG 1994).

Any disturbance around a Swainson's hawk nest that is not characteristic of the normal activities around the nest site that caused disruption of the nesting attempt would likely be regarded by CDFG as a violation of CESA. Typically, CDFG requires that any impact to a Swainson's hawk nest be permitted through a Fish and Game Section 2081 management authorization. If an active nest is found on or immediately adjacent to the project area (which is generally considered to be within 300 feet of the project area) "to avoid potential violation of Fish and Game Code 2080 (i.e., killing of listed species), project-related disturbance at active Swainson's hawk nesting sites should be reduced or eliminated during critical phases of the nesting cycle (March 1- September 15 annually)" (CDFG 1994). If disturbance would occur to an actual active nest site (disturbance to the nest site or within 300 feet of the nest site), a Fish and Game Section 2081 management authorization shall be obtained as required by CDFG. Impacts to nesting Swainson's hawks would be considered a significant impact pursuant to CEQA.

The project area is within 10 miles of a known Swainson's hawk nest (CNDDB records) and is therefore considered by CDFG to be within the "defined foraging area" for this species (CDFG 1994). Only a small portion of the suitable foraging habitat would be permanently impacted by the project. This impact would be considered a significant impact pursuant to CEQA.

Mitigation Measure BIO-1H: CDFG has prepared guidelines for conducting surveys for Swainson's hawk entitled: Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (CDFG 2000). These survey recommendations were developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reduce the potential for nest failures as a result of project activities and/or disturbances. To meet the CDFG's recommendations for mitigation and protection of Swainson's hawks in this guideline, surveys should be conducted for a half-mile radius around all project activities and should be completed for at least the two survey periods immediately prior to a project's initiation. The guidelines provide specific recommendations regarding the number of surveys based on when the project is scheduled to begin and the time of year the surveys are conducted.

If Swainson's hawks are found to be nesting on or in the immediate vicinity of the project area in the future when the proposed project is implemented, consultation with CDFG and mitigation compensation shall be required. At that time, the necessity of acquiring a Fish and Game Section 2081 management authorization should be determined. CDFG has prepared a Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California (CDFG 1994) (hereinafter the Mitigation Guidelines) that prescribes avoidance and mitigation guidelines for impacts to Swainson's hawk nesting and foraging habitats. The Mitigation Guidelines require project sponsors to replace any impacted Swainson's hawk nesting and/or foraging habitat with other suitable Swainson's hawk nesting/foraging habitat. If Swainson's hawks are found to be nesting on or within the area of influence of the project (within 1,000 feet of the project alignment), impacts to nesting Swainson's hawks would be regarded as significant and adverse, and mitigation compensation would be required.

The CDFG Mitigation Guidelines states that acceptable mitigation to offset impacts to Swainson's hawk foraging habitat can be met by Fee Title acquisition of Swainson's hawk habitat, or by acquisition of the right to record a conservation easement over lands that can be managed for this hawk species (hereinafter Habitat Management Lands). Any land acquired through Fee Title would have to be donated to a suitable conservation organization for management. In addition to providing Habitat Management Lands, the project sponsor would be assessed a management fee for the long-term management of the Habitat Management Lands by a suitable conservation organization. In lieu of these mitigation measures, as approved by CDFG, the project sponsor may purchase mitigation credits commensurate with the acreage of impacts to foraging and/or nesting habitat at a CDFG approved Swainson's hawk mitigation bank.

Findings for Impact BIO-1H:

Mitigation Measure BIO-1H requires surveys to be conducted within a half-mile radius around all project activities for at least the two survey periods immediately prior to the project's initiation. If Swainson's hawks are found nesting in the survey area, consultation with the CDFG and mitigation compensation is required, which will include the provision of Management Habitat Lands and the payment of a management fee. These mitigation measures will substantially lessen the potential impacts from the project on the Swainson's Hawk. Moreover, these mitigation measures are feasible and effective measures that will reduce the project's impacts on the Swainson through off-site mitigation. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure BIO-1H will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact BIO-1I: Western Burrowing Owl.

Facts: The western burrowing owl is a California species of special concern. This owl is also protected under California Fish and Game Code §3503, §3503.5, §3513, and §3800, and the Federal Migratory Bird Treaty Act. Burrowing owls were observed in several locations within the project area in 2006 and 2007 (CNDDB Occurrence No. 876 and 877). Suitable nesting habitat for western burrowing owl occurs within the project area. Since this owl and ground squirrels are known from the area, and thus could nest or reside in the project area in the future when the proposed project is implemented, impacts to the western burrowing owl would be regarded as potentially significant pursuant to CEQA.

Mitigation Measure BIO-1I-1: A nesting survey shall be conducted for ground nesting raptors, such as western burrowing owl and northern harrier. The burrowing owl survey should be conducted in accordance with the survey requirements detailed in the CDFG's October 17, 1995 *Staff Report on Burrowing Owl Mitigation*. Surveys shall be conducted in both the breeding season (April 15-July 15) and non-breeding season (December- January) to assess use of the project area by this species. If burrowing owls are present on the project area during the breeding season (peak of the breeding season is April 15 through July 15), and appear to be engaged in nesting behavior, a fenced 75 meter (276-foot) buffer would be

required between the nest site(s) (i.e., the active burrow(s)) and any earth-moving activity or other disturbance within the project area. This 276-foot buffer could be removed once it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest). Typically, the young fledge by August 31. This date may be earlier than August 31, or later, and would have to be determined by a qualified raptor biologist. If northern harriers are identified nesting within the project area, mitigation measures detailed above for nesting raptors should be implemented.

Additionally, if burrowing owls are identified nesting onsite and would be affected by the proposed project, an upland mitigation area for burrowing owls shall be established either on- or offsite. The mitigation site must be determined to be suitable by a qualified biologist. The size of the required mitigation site will be based on the number of burrowing owls that would be affected by the proposed project, with a minimum of 6.5 acres preserved per pair of owls or single owl that would be affected by the proposed project. The number of owls for which mitigation is required shall be based on the combined results of the protocol-level survey and the preconstruction surveys (i.e., if two pairs of owls are found to be within the project area, the mitigation requirement shall be 2 x 6.5 = 13 acres provided that no more than two pairs of owls are observed during the preconstruction survey; if three pairs of owls are observed during the preconstruction survey, then the mitigation requirement shall be 3 x 6.5 = 19.5 acres). A detailed mitigation and monitoring plan shall be developed for the burrowing owl mitigation area. This plan must be prepared in coordination with CDFG, and approved by this agency. In lieu of this mitigation measure, as approved by CDFG, credit commensurate with the mitigation acreage requirements set forth above shall be purchased from a qualified burrowing owl mitigation bank.

Mitigation Measure BIO-1I-2:
Preconstruction surveys of the project area shall be conducted no more than 30 days prior to ground disturbing activities. If more than 30 days lapse between the time of the preconstruction survey and the start of ground-disturbing activities, another preconstruction survey must be completed. This process should be repeated until the habitat is converted to non-habitat (e.g., graded and developed).

Mitigation Measure BIO-1I-3:
If western burrowing owls must be passively relocated from the project area to remove them from harms way, these activities shall be approved by CDFG in advance. Passive relocation shall not commence before September 30th and shall be completed prior to February 1st.

Mitigation Measure BIO-1I-4:
If an upland mitigation site is designated for burrowing owls, it shall be approved as a suitable burrowing owl mitigation property by CDFG. The preserved area shall be preserved in perpetuity as wildlife habitat via recordation of a conservation easement that designates the California Department of Fish and Game (CDFG), or any other qualified conservation organization as approved by CDFG as the Grantee of the easement.

Mitigation Measure 1I-5:

If a conservation easement is established over burrowing owl habitat, an endowment to cover the management of the mitigation area and implementation of the mitigation and monitoring plan shall be provided by the project sponsor to the Grantee of the Conservation Easement prior to issuance of the grading permit.

Findings for Impact BIO-1I:

Mitigation Measure BIO-1I, which requires nesting surveys to be conducted for ground nesting raptors in accordance with the CDFG's survey requirements, the construction of a fenced 75 foot buffer area around each nest site, an on- or off-site upland mitigation (if required), preconstruction surveys 30 days prior to construction activity, passive relocation of western burrowing owls (if necessary) between September 30th and February 1st, CDFG approval of upland mitigation site (if required), and an endowment to cover the management of the mitigation area and implementation of the mitigation and monitoring plan, will substantially lessen the potential impacts from the project on the western burrowing owl. These mitigation measures are feasible and effective measures that will reduce the project's impacts on the western burrowing owl by providing proper monitoring and on- or off-site mitigation. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure BIO-1I will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact BIO-1J: Common and Special-Status Nesting Passerine Birds.

Facts: Nesting passerine birds (that is, perching birds), and special-status birds such as loggerhead shrike or tricolored blackbirds could be impacted. Birds and their nests are protected under California Fish and Game Code (Sections 3503, 3503.5), and the Migratory Bird Treaty Act. Impacts to nesting birds, their eggs, and/or young resulting from the proposed project would be potentially significant pursuant to CEQA. Impacts to unoccupied nesting habitats for these species would not be considered significant as there are other local and regional nesting habitats available for use by these species that could be used in subsequent nesting seasons. Consequently no mitigation is warranted for impacts to unoccupied nesting habitats.

Mitigation Measure BIO-1J: A nesting survey shall be conducted 15 days prior to commencing construction work if this work would commence between March 1 and September 1. If special-status birds, such as loggerhead shrike or tricolored blackbirds, are identified nesting within or near the project area, a 200-foot radius around the nest must be staked with bright orange construction fencing. No construction or earth-moving activity shall occur within this 200-foot staked buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by August 1. This date may be earlier than August 1, or later, and would have to be determined by a qualified ornithologist.

If common (that is, not special-status) passerine birds (that is, perching birds such as American robins, scrub jays, and northern mockingbird) are identified nesting within the project area, grading activities in the immediate area shall be postponed until it is determined

by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the area. Typically, most passerine birds can be expected to complete nesting by July 1, with young attaining sufficient flight skills by early July.

Findings for Impact BIO-1J:

Mitigation Measure BIO-1J, which requires a nesting survey to be conducted for special-status birds 15 days prior to commencing construction, and the creation of a 200-foot buffer zone around nesting sites, will substantially lessen the potential impacts from the project on special-status birds. Also, Mitigation Measure BIO-1J requires, if common passerine birds are identified nesting within the project area, grading activities to be postponed until a qualified ornithologist determines that the young have fledged and are able to leave the area. These mitigation measures are feasible and effective measures that will reduce the project's impacts on special-status and common passerine birds by providing for nesting surveys and the postponement of construction activities until the young are capable of leaving the project area. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure BIO-1J will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact BIO-1K: San Joaquin Kit Fox.

Facts: San Joaquin kit fox, a federally listed threatened species, was not identified during protocol surveys conducted in 2007. Based on the results of the protocol surveys conducted for this project, it is thought that there is a very low likelihood of kit fox occurring within the project area. The extent of land manipulation and high degree of disturbance due to agricultural practices such as tilling and crop planting (corn and strawberry) reduces the value of the project area for kit fox, and thus their use of the project area is less likely. However, the various large irrigation canals and creeks that bisect portions of the project area could provide marginal habitat, particularly as a migration corridor for the kit fox between ruderal and grassland habitats in the area. In order to better determine potential impacts to San Joaquin kit fox by the proposed project, the project area was broken down into high, medium, and low quality San Joaquin kit fox habitat (with agreement from USFWS on this methodology). High quality habitats include canals, ruderal areas, grasslands, and forested areas. Medium quality habitats include irrigated pasture, horse pasture, and rotational crops. Low or unlikely habitats include permanent crops, orchards, and urban areas. Impacts to high and medium quality habitats are regarded as potentially significant. Impacts to low quality habitats are regarded as less-than-significant. Therefore, the potential San Joaquin kit fox habitats affected by the proposed expressway that would require mitigation only includes the "high" and "medium" quality habitats, and no mitigation would be required for impacts to the "low" quality habitats. Impacts to potential San Joaquin kit fox habitats would be a significant impact pursuant to CEQA.

Construction of Alternative 1A would impact 7.26 acres of high quality habitat, 187.6 acres of medium quality habitat, and 178.3 acres of low quality or unlikely San Joaquin kit fox habitat. Thus, Alternative 1A would result in permanent impacts to approximately 194.9 acres of potential San Joaquin kit fox habitat (excluding the low quality areas). In addition, Alternative

1A would result in temporary impacts to 95.9 acres of potential San Joaquin kit fox habitat. Areas regarded as "temporarily impacted areas" would include a 50-foot buffer/set-back area along either side of each alignment. It is assumed that these areas would be restored to pre-existing conditions following the completion of the expressway project.

Construction of Alternative 1B would impact 37.66 acres of high quality habitat, 168.0 acres of medium quality habitat, and 178.3 acres of low quality or unlikely San Joaquin kit fox habitat. Thus, Alternative 1B would result in permanent impacts to approximately 205.7 acres of potential San Joaquin kit fox habitat (excluding the low quality areas). In addition, Alternative 1B would temporarily impact 96.1 acres of potential San Joaquin kit fox habitat (i.e., a 50-foot buffer along both sides of the alignment).

Finally, the USFWS believes that the project will diminish the ability of kit foxes to move between the Sandy Mush Road preserve and the "east side" of Merced County. Impacts to potential San Joaquin kit fox migration corridor habitat would be a significant impact pursuant to CEQA.

Mitigation Measure BIO-1K: In order to offset the project's impact to high and medium quality potential San Joaquin kit fox habitats, the project sponsor shall purchase mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS approved mitigation bank available for use at the time the project is constructed). The USFWS has approved use of this bank to jointly mitigate for impacts to California tiger salamander upland estivation/over-summering habitat and San Joaquin kit fox habitat. Mitigation credits that are purchased to compensate for permanent impacts and for temporary impacts to high and medium quality suitable kit fox habitats. The total credits purchased by the project sponsor shall ultimately be consistent with USFWS requirements for this project and will be included in the Final EIR. It is likely that the USFWS will require a 2:1 mitigation ratio for permanent impacts to potential SJKF habitat (for medium and high quality habitat areas only), and a 0.5:1 mitigation ratio for temporary impacts to potential SJKF habitat. Once the final alignment is determined, the project sponsor shall purchase the appropriate number of mitigation credits for any impacts.

Finally, avoidance and minimization measures will be implemented by the proposed project to further reduce potential impacts to the San Joaquin kit fox. An employee training program will be conducted before groundbreaking to explain the Federal Endangered Species Act and any endangered species concerns to contractors working in the area. Qualified biologists would then conduct preconstruction den surveys no more than 14 days prior to groundbreaking to ensure that potential kit fox dens are not disrupted during construct of the expressway project. If "potential dens" are located, infrared camera stations will be set up and maintained for 3 consecutive nights at den openings prior to initiation of groundbreaking activities to determine the status of the potential dens. If no kit fox is found to be using the den, groundbreaking activities would proceed unhindered. However, if a kit fox is found using a den site within an area of influence of the expressway project (i.e., within 300 feet of the proposed road alignment), the USFWS will be notified at once. Because timing is an issue, notification would be via a telephone call (and as necessary voice-mail message) to the Chief of Endangered Species in Sacramento, and the Supervisor of Environmental Services

at the appropriate CDFG Regional office. If the den is a refuge site only, the project sponsor will seek permission from the USFWS (and CDFG) to passively relocate the fox(es) from the den site prior to the initiation of the groundbreaking activities. As approved, passive relocation will occur over a three day period. Should a den be found that is a natal or pupping den, and it is within an area of influence near the expressway project, the groundbreaking activities would be delayed until such time that biologists can confirm that all kit foxes have left the den site. Once the den has been vacated, an infra red triggered camera would be set at the den opening. The camera would then be checked over a 2-day period to confirm that kit foxes no longer use the den. Once this is verified, grading equipment could be moved into the area and the groundbreaking activities completed.

Prior to initiating groundbreaking activities, the vehicle and equipment access routes and work area will be delineated using construction fencing. This will minimize the project-related disturbance to potential San Joaquin kit fox habitat to the maximum extent possible. During the groundbreaking activities, all project-related vehicle traffic will be restricted to established roads or access routes, and will observe a 20-mile an hour speed limit within the work areas, except on County roads and highways. A biological monitor will be present during all activities that could result in injury to San Joaquin kit fox. The biologist will have the authority to halt work, if necessary, to protect the kit fox.

To prevent harm to San Joaquin kit fox, any steep-walled holes and/or trenches excavated for the project will be completely covered at the end of each workday, or escape ramps will be provided to allow any entrapped animals to escape unharmed. All pipe sections stored at the project site overnight that are four inches in diameter or greater will be inspected for San Joaquin kit fox before the pipes are moved or buried. If San Joaquin kit fox are identified in the work area at any time, the USFWS and/or CDFG will be notified and consulted before work activities resume. All trash items will be removed from the project site to reduce the potential for attracting predators of San Joaquin kit fox. Contractors will be prohibited from bringing firearms and pets to the job site.

Prior to impacting San Joaquin kit fox habitat, an "incidental take" permit (Section 7 consultation) would be required from USFWS, and an "incidental take" permit (Section 2081 permit) would be required from CDFG. In lieu of such a permit, CDFG may process a "consistency determination" pursuant to Fish and Game Code §2080.1. Such a determination would indicate that the State's interests in protecting State listed species are met by the federal biological opinion (i.e., the incidental take permit) issued by USFWS and thus no Section 2081 permit is required.

Findings for Impact BIO-1K:

Mitigation Measure BIO-1K, which requires the purchase of mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or another USFWS approved mitigation bank) to offset the project's impact on high and medium quality potential San Joaquin kit fox habitats, the implementation of avoidance measures, including preconstruction surveys, vehicle use limitations, and construction activity limitations, and the obtainment of an "incidental take permit" from the USFWS and CDFG (unless a "consistency determination" is made), will

substantially lessen the potential impacts from the project on the San Joaquin kit fox. These mitigation measures are feasible and effective measures that will reduce the project's impacts on the San Joaquin kit fox by providing proper monitoring and on- or off-site mitigation. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure BIO-1K will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact BIO-1L: California Horned Lizard.

Facts: The friable/sandy soils common throughout the project area provide suitable habitat for California horned lizard. In the absence of surveys that demonstrate that this species does not occur in the project area, the proposed project may result in impacts to potentially occupied habitat. Impacts to California horned lizard would be regarding as a significant adverse impact.

Mitigation Measure BIO-1L: The resource agencies (CDFG and USFWS) do not have specific mitigation guidelines that must be followed to offset a project's impact to the California horned lizards. Mitigation for this special-status species is determined on a project by project basis. Potentially occupied California horned lizard habitat within the project area could be impacted by the proposed project. Avoidance of potentially occupied upland burrow sites is not possible. The project sponsor will be purchasing mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or other USFWS-approved mitigation bank) to mitigate for impacts to San Joaquin kit fox habitat. Since both the San Joaquin kit fox and the California horned lizard require friable soils, it shall be assumed that mitigation land set aside for San Joaquin kit fox could also serve to provide mitigation lands for the California horned lizard.

Additional mitigation measures shall include conducting preconstruction surveys for the California horned lizard prior to any site grading. All California horned lizards encountered during site grading would be salvaged, per CDFG approval, and relocated to preserved off-site habitats. Impacts to potential California horned lizard habitat would be conducted in consultation and as approved by CDFG. This mitigation measure would reduce impacts to a less-than-significant level.

Findings for Impact BIO-1L:

Mitigation Measure BIO-1L, which requires preconstruction surveys, lizard relocation to preserved off-site habitats, and the purchase of mitigation credits at the Great Valley Conservation Bank at Flynn Ranch in Merced (or another USFWS approved mitigation bank), will substantially lessen the potential impacts from the project on the California horned lizard. These mitigation measures are feasible and effective measures that will reduce the project's impacts on the California horned lizard by providing proper relocation measures and off-site mitigation. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure BIO-1L will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact BIO-2: Impacts to Jurisdictional Wetlands, including Waters of the United States and the States of California.

Facts: The proposed project would impact areas that are within the Corps' and RWQCB jurisdiction pursuant to Sections 404 and 401 of the Clean Water Act, respectively. Alternative 1A would impact 1.22 acres of potential seasonal wetlands, 0.92 acres of open water pond/detention basin, and 0.06-acre of other waters pools. In addition, Alternative 1A would impact 3.35 acres (18,828 linear feet) of the "other waters of the United States/State." These impacts to "other waters" include 2.19 acres (5,130 linear feet) of creeks and canals, 0.37 acre (3,042 linear feet) of primary irrigation ditches, 0.52 acre (8,333 linear feet) of secondary irrigation ditches and 0.27 acre (2,323 linear feet) of concrete-lined ditches.

Alternative 1B would impact 2.67 acres of potential seasonal wetlands, 0.92 acre of open water pond/detention basin, and 0.06 acre of other waters pools. In addition, Alternative 1B would impact 7.0 acres (26,292 linear feet) of "other waters of the United States/State." These impacts to "other waters" include 5.43 acres (9,935 linear feet) of creeks and canals, 0.76-acre (5,686 linear feet) of primary irrigation ditches, 0.49 acre (8,048 linear feet) of secondary irrigation ditches and 0.32 acre (2,623 linear feet) of concrete-lined ditches.

These impacts to waters of the United States and State would be regarded as a significant impact pursuant to CEQA.

Mitigation Measure BIO-2: Impacts to waters of the United States and/or State will be reduced to a less-than-significant level through various means, including avoidance, minimization of impacts, and mitigation compensation. Impacts will be minimized by the use of Best Management Practices to protect avoided wetland and "other waters" in the project area, and ensure water quality in the avoided wetlands and other waters within the watershed. These practices can include installing orange construction fencing, hay waddles, and other protective measures around wetlands and other waters. During project-related grading, a biological monitor will be on-site to monitor the integrity of avoided wetlands and other waters.

For those wetland areas and other waters that cannot be avoided, a *Mitigation and Monitoring Plan* will be prepared that will provide a mitigation program to fully compensate for impacts to waters of the United States/State. To compensate for impacts to wetlands and other waters, wetlands and other waters shall be created in areas that are now upland at a 2:1 (mitigation to impacts) ratio and be consistent with requirements set forth by the Corps and the RWQCB. The new wetlands and other waters will resemble those wetlands and other waters affected by the project (known as in-kind replacement).

In pool environments that will be impacted by the project, wetland plant/animal populations will be relocated by transferring topsoil from the impacted pools to the re-created pools. These topsoils would contain a seed bank of the impacted pool plant species which would germinate with fall/winter hydration in the re-created pools.

The proposed wetland mitigation plan would have to meet normal requirements for mitigating impacts to wetlands and other waters, which include:

- **Replacement of impacted wetlands and other waters at a 2:1 ratio**. For permanent wetland and other waters impacts, wetlands and other waters shall be replaced at a minimum ratio of two acres created for each acre, or fraction thereof that is permanently impacted.
- **Dedication of the permanently protected areas**. The Corps and other regulatory agencies generally require that any new wetlands and other waters created to mitigate project impacts be set aside in a preserve in perpetuity, either through deed restrictions or conservation easements.
- **Establishment of a five-year monitoring program to monitor the progress of the wetland and other waters mitigation toward an established goal**. Success criteria, maintenance and monitoring requirements, contingency measures and a schedule for implementation shall be specified. At the end of each monitoring year, an annual report will be submitted to the Corps, RWQCB and other resource agencies that permitted the project. This report will document the hydrological and vegetative condition of the mitigation wetlands and other waters, and will recommend remedial measures as necessary to correct deficiencies.

In lieu of creating compensation wetlands and other waters, as approved by the Corps and RWQCB, the project sponsor may purchase mitigation credits from an approved mitigation bank at a 2:1 ratio or as otherwise specified by the Corps and RWQCB.

Aside from the minimum replacement ratio and in perpetuity protection, various regulatory agencies may provide additional conditions and stipulations for permits. No water of the U.S. and/or State would be impacted until such time that appropriate permits are acquired for the project from the CDFG, RWQCB, and/or Corps. As proposed, impacts to wetlands and other waters within the project area will require a Section 404 permit from the Corps, authorization from the RWQCB pursuant to Section 401 of the Clean Water Act, an NOI with the SWRCB, and an SBAA from the CDFG. Conditions in permits authorized for the project by these agencies shall become conditions of the project.

Implementation of the measures described above would reduce significant impacts to waters of the United States/State to a level considered less-than-significant pursuant to the CEQA. Any other conditions that are stipulated for wetland impacts by the CDFG, Corps and/or RWQCB shall also become conditions of project approval.

Findings for Impact BIO-2:

Mitigation Measure BIO-2, which requires avoidance measures, minimization of impacts, and mitigation compensation, will substantially lessen the potential impacts from the project on the state and federal jurisdictional wetlands. These mitigation measures are feasible and effective measures that will reduce the project's impacts on jurisdictional wetlands by providing proper on-site monitoring, relocation of wetland topsoil, replacement of impacted wetlands, dedication of permanently protected areas, and the establishment of a five-year monitoring program.

Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure BIO-2 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

3.9 Cultural Resources:

Impact PALEO-1: Project-related ground disturbance could have adverse impacts on unknown or unrecorded significant paleontological resources, including animal and plant fossil remains.

Facts: Although no paleontological resources have been recorded, such resources may be present due to the high sensitivity of the project area. As a result, potential impacts to paleontological resources could occur during terrain modification activities as a result of project construction. Unknown fossil remains, unrecorded fossil sites and geologic site data could be disturbed and adversely impacted with the project construction. Direct impacts to paleontological resources could result from earthmoving activity, widening of road cuts, grading and vegetation removal, as previously undisturbed fossil sediments may become buried and unavailable for scientific investigations in the future. Significant adverse impacts to paleontological resources could also arise from the construction of supporting facilities associated with project implementation.

Conversely, if fossil remains recovered during project construction are documented and protected, it could provide a more complete documentation of the diversity of animal and plant life that once existed in Merced County and could result in a more accurate reconstruction of the geologic and paleobiologic history of the Central Valley.

An appropriate mitigation program would work to reduce potential impacts to less-than-significant and would provide the benefits identified above. The mitigation measures proposed below are consistent with standard guidelines of the Society of Vertebrate Paleontology for mitigating adverse construction-related impacts on paleontological resources.

Mitigation Measure PALEO-1a:
In the event that paleontological resources are discovered during ground clearing operations, a qualified paleontologist shall establish a monitoring and mitigation program, including preconstruction coordination; construction monitoring; emergency discovery procedures; sampling and data recovery, if needed; preparation, identification, and analysis of the significance of fossil specimens salvaged, if any; museum storage of any specimens and data recovered; and reporting.

Mitigation Measure PALEO-1b:
Prior to construction, construction personnel involved with earth-moving activity shall be informed of the possibility of excavating paleontological resources and that such resources are protected under certain laws and regulations regarding proper notification procedures. This training should be performed by a qualified paleontologist.

Findings for Impact PALEO-1:

Mitigation Measure PALEO-1, which requires a qualified paleontologist to establish a monitoring and mitigation program in the event paleontological resources are discovered, and to inform construction personnel involved in earth-moving activity of the possibility of excavating paleontological resources, will substantially lessen the potential impacts from the project on the paleontological resources. These mitigation measures are feasible and effective measures that will reduce the project's impacts on paleontological resources by informing earth-moving personnel of possible paleontological resources and providing the proper monitoring and mitigation of paleontological sites if discovered. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure PALEO-1 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact CULT-1: Project construction would involve subsurface excavation and grading which could result in damage to or destruction of unrecorded archaeological resources, including Native American artifacts and/or human remains.

Facts: Although recent studies and surveys do not demonstrate evidence of intact archaeological deposits, there were some potential archaeological resources encountered in the northeastern portion of the project study area. It is possible that previously undiscovered prehistoric features and human burials in the subsurface soils could be revealed in this area, or anywhere within the project area. Such resources could potentially be exposed during excavation and earthmoving activities during project construction. Damage or destruction of these cultural resources would represent a significant impact.

Mitigation Measure CULT-1a:
If cultural resources are discovered during earthmoving or soil-disturbing activities, a monitoring program will be implemented to observe, assess, record and recover any important prehistoric features or human remains uncovered.

Mitigation Measure CULT-1b:
Provide a qualified, professional archaeological monitor and a qualified Native American observer in accordance with CEQA Guidelines, § 15064.5 (d) in the event that cultural resources are found during removal of the existing built environment during all initial exposure of native soil and during deep utility trenching.

Mitigation Measure CULT-1c:
In accordance with CEQA Guidelines, § 15064.5 (e)(1)(A)(B), in the event of the discovery or recognition of any human remains on the project site during development, there shall be no further excavation or disturbance of the site or any area reasonably suspected to overlie adjacent human remains until the coroner of the county in which the remains are discovered is to be contacted to determine that no investigation of the cause of death is required.

Mitigation Measure CULT-1d:
If the coroner determines the remains to be Native American:

- the coroner shall contact the Native American Heritage Commission within 24 hours;
- the Native American Heritage Commission shall identify the person or persons it believes to be most likely descended from the deceased Native American; and
- the most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code § 5097.98.

Findings for Impact CULT-1:

Mitigation Measure CULT-1, which requires a monitoring program to be implemented if cultural resources are discovered during earthmoving activities, in accordance with CEQA Guidelines, and the remains of Native Americans, if found, to be treated in accordance with the measures outlined above, will substantially lessen the potential impacts from the project on unrecorded archaeological resources. These mitigation measures are feasible and effective measures that will reduce the project's impacts on unrecorded archaeological resources, including Native American artifacts and/or human remains. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure CULT-1 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact CULT-2: Construction of the Buhach Road overpass over SR 99 would occur in close proximity to the Buhach Catholic church, an identified historic resource, potentially resulting in damage to, or destabilization of, the structure.

Facts: Project construction has the potential to adversely impact one historical architectural resource, the Buhach Catholic Church. This historical resource is the only known resource eligible for listing in the CRHP and the NRHP, as it has direct associations with the trend of Azorean Portuguese settlement in the Central Valley.
The Church may be susceptible to material damages, as construction of the Buhach Road overpass over SR 99 would take place immediately adjacent to the building. Figure 4.12-2 shows the proximity of the project to the church property.

> **Mitigation Measure CULT-2:** Construction work, including construction staging near the Buhach Church shall not take place within the legal parcel boundary (Assessor Parcel 025-170-001) of the church. Widening of the Buhach Road overpass would necessitate re-grading of the Church driveway but would not impair access to the main entrance of the building. Furthermore, the Church structure itself, which is the historic resource in question, would be unaffected by widening of the Buhach Road overcrossing.

Findings for Impact CULT-2:

Mitigation Measure CULT-2, which requires that construction work, including construction staging near the Buhach Catholic church, to not take place on the legal parcel boundary on which

the Buhach Catholic church is situated, will substantially lessen the potential impacts from the project on the Buhach Catholic church. These mitigation measures are feasible and effective measures that will reduce the project's impacts on the Buhach Catholic church by not allowing construction activity to take place on the parcel where the Buhach Catholic church is situated. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure CULT-2 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact CULT-3: If construction of the Buhach Road overpass would require construction activities to occur on the Buhach Catholic church property, damage to, or destabilization of the Buhach Catholic church, an identified historic resource, could occur.

Facts: Current project designs indicate that the Buhach Road overpass will be constructed outside of the property boundary of the Buhach Catholic Church. However, the driveways of the church may have to be modified to maintain safe access to local roads. If construction activities must occur on the Buhach Catholic Church property the following mitigation measures would apply and would adequately protect the historic building and property from significant impacts.

Mitigation Measure CULT-3:

- The project proponent would develop and implement measures to protect the character-defining features of the Buhach Catholic Church from damage. Such measures would be prepared in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the California Historical Building Code.
- Inadvertent damages to the character-defining features of the Buhach Catholic Church would be repaired in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the California Historical Building Code. The building and grounds would be photographed prior to construction establishing a baseline condition for assessing inadvertent damage, as described below.

Findings for Impact CULT-3:

Mitigation Measure CULT-3, which requires the project proponent to develop and implement measures to protect the character-defining features of the structure and to pay for the repairs resulting from inadvertent damages to the structure, will substantially lessen the potential impacts from the project on the Buhach Catholic church. These mitigation measures are feasible and effective measures that will reduce the project's impacts on Buhach Catholic church by photographing the Church prior to construction to establish a baseline condition for assessing inadvertent damage, and by taking measures to protect the character-defining features of the Church. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure CULT-3 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

3.10 Utilities:

Impact UTIL-1: Project construction would require the demolition of several structures, including the Buhach Road overcrossing and several residential units, as well as the removal of vegetation and soil. This debris and other construction material could affect the capacity and lifespan of local landfills, and affect the ability of Merced County and the City of Atwater to meet its AB 939 reduction targets.

Facts: The project would require the demolition of the Buhach Road overcrossing, the demolition of residential units and businesses, as well as the removal of vegetation and soils the project right of way area. Demolition of structures would generate solid wastes, including concrete, metals, glass, wood and plastic, and substantial quantities of green wastes and soils would be generated from vegetation removal and grading activities. These materials could have a significant impact on local landfills, particularly because the landfills that serve the project area have limited capacity.

The project-generated materials, if sent to a landfill, would also affect the ability of the City of Atwater and Merced County to meet the source reduction goals required under AB 939. As previously stated, AB 939 requires cities and counties to divert 50 percent of their solid waste away from conventional landfills. The mitigation measure below would reduce the burden on local landfills and contribute to the City of Atwater and Merced County's attainment of their AB 939 targets.

Mitigation Measure UTIL-1: Prior to construction, MCAG shall prepare a Solid Waste Management Plan for the project that demonstrates that at least 50 percent of project-generated solid waste is being recycled, reused or diverted from landfills. Elements of the Solid Waste Management Plan could include, but are not limited to, the following:

- Recycling of metals and other recyclable materials generated during construction.
- Regrinding and reuse of the concrete debris generated by demolition of the existing Buhach Road overpass.
- Balancing excavated soils by reusing them in other areas, such as for fill around the foundations of elevated project features.
- Removed vegetation reused, such as through mulching, or composted at a composting facility.

The City of Atwater and Merced County Public Works departments shall approve the Solid Waste Management Plan prior to the issuance of any building permits. Given that the types of solid waste that would be generated are highly recyclable or green waste, such as soil and vegetation it is anticipated a source reduction rate of 50 percent or higher is easily attainable.

Findings for Impact UTIL-1:

Mitigation Measure UTIL-1, which requires the preparation of a Solid Waste Management Plan for the project that demonstrates that at least 50 percent of the project-generated solid waste is being recycled, reused or diverted from landfills, approved by the City of Atwater and the Merced County Public Works departments prior to the issuance of building permits, will substantially lessen the potential impacts from the project on local landfills and on the ability of

Merced County and the City of Atwater to meet their AB 939 reduction targets. These mitigation measures are feasible and effective measures that will reduce the project's impacts on local landfills and Merced County and the City of Atwater's ability to meet their AB 939 reduction targets through the implementation of the Solid Waste Management Plan. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure UTIL-1 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

3.11 Public Services:

Impact PS-1: Emergency responders from the Merced County Fire Department Station 82 on Gurr Road could be delayed or at risk from the signalized intersections proposed for the project, particularly the intersection of North Gurr road with SR 140 and the AME.

Facts: During the course of preparing this EIR, the Merced County Fire Department Fire expressed concern that their fire apparatus from Station 82 on North Gurr Road would frequently use the AME to respond to emergency calls, and could be delayed or at risk of collisions, at the signalized intersections proposed for the project, particularly at the intersection of North Gurr Road with SR 140 and the AME. Station 82 is less than 0.1 miles from the intersection and fire department apparatus leaving from the station would need to cross this intersection quickly and suddenly in order to respond to calls for service. The Merced County Fire Department would also frequently use the AME to respond to service calls and would need to quickly traverse other major project intersections. The following mitigation measure is recommended by the Fire Department to reduce these potential impacts.

> **Mitigation Measure PS-1:** The project applicant shall be responsible for installation of specialized traffic signal lights at all signalized intersections along the project alignment. These traffic signals shall be controllable by the Fire Department to ensure that fire apparatus may safely cross signalized intersections on a green light and that other traffic at the intersection is stopped by red lights. In addition to the specialized traffic signals, the roadway alignment shall be moved to a further distance from the existing fire station, as shown in Figure 4.14-2. A paved break in the roadway median shall also be provided to ensure adequate fire station access and response time.

Findings for Impact PS-1:

Mitigation Measure PS-1, which requires the project applicant to be responsible for the installation of specialized traffic signal lights at all signalized intersections along the project alignment, the adjustment of the roadway alignment so it is further from the existing fire station, and a paved break in the roadway medium to allow emergency access, will substantially lessen the potential impacts from the project on the Merced County Fire Department Station 82. These mitigation measures are feasible and effective measures that will reduce the project's impacts on Merced County Fire Department Station 82 by allowing faster access and controllable traffic signals along the project route. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure PS-1 will be incorporated into the project via conditions of approval or

via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact PS-2: The project would result in changes in access to local roadways that could affect emergency service providers by altering the routes that are currently used to respond to service calls. This could adversely affect emergency response times.

Facts: As discussed previously, the AME project would generally improve local access to many areas around the project and decrease traffic congestion such that response times could potentially be shortened. However, as described in **Chapter 3, Project Description,** under either Alignment 1A or Alignment 1B, the project would include changes to a number of local roadway access points including terminating some local roads in the form of cul-de-sacs, constructing new interchanges, and extending roads or realigning portions of existing roads. These changes in access would affect how emergency service providers would travel to certain portions of the project area, and could increase response times if these changes in access are not well documented and are not incorporated into emergency response plans.

The most substantial change in access changes would be on the north side of SR 99, where the AME project would connect with a realigned segment of SR 99. Under both alternatives, construction of the project would result in the abandonment of Ashby Road between Valley Drive and Buhach Road. Additionally, the Buhach Road overpass would no longer connect with SR 99. Broadway Avenue would also be extended under the overpass, but would no longer connect directly with Buhach Road. At present, the Buhach Road interchange and Ashby Road provide access to and from SR 99 to a number of developed areas of Merced County, including: the residential development at the intersections of Ashby Road and Valley Drive (within Merced County); commercial areas east of Valley and north of SR 99; and residential areas west of the current SR 99/Buhach Road interchange. The SR 99/Buhach Road interchange also provides access via Broadway Avenue to residential areas of the City of Atwater further west and north of SR 99. Emergency Service providers currently use these and other roadways to respond to emergency service calls but would no longer be able to use these roadways and would have to find alternate routes. None of the areas discussed would be left without access, and many would connect to the AME via the nearby intersections of the AME with the Belcher Avenue Extension or the widened portion of Elliot Avenue. However, as a result of the changes in access, response times may be adversely affected.

> **Mitigation Measure PS-2:** The project applicant shall be responsible for installation of specialized traffic signal lights at all signalized intersections along the project alignment. These traffic signals shall be controllable by the Fire Department to ensure that fire apparatus may safely cross signalized intersections on a green light and that other traffic at the intersection is stopped by red lights.

Findings for Impact PS-2:

Mitigation Measure PS-2, which requires the project applicant to be responsible for the installation of specialized traffic signal lights at all signalized intersections along the project alignment, will substantially lessen the potential impacts from the project on emergency service

providers. These mitigation measures are feasible and effective measures that will reduce the project's impacts on emergency service providers by allowing faster access and controllable traffic signals along the project route. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure PS-2 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact PS-3: Project construction may require detours and lane closures on existing roadways in the project area which may adversely affect EMS, as well as Sheriff, Police, and Fire Department response times.

Facts: In order to construct the project where it intersects or reconstructs existing roadways, lane closures and detours may be temporarily needed. This would temporarily alter the route that public service providers would take to respond to an emergency call. This could increase emergency response times.

> **Mitigation Measure PS-3:** The applicant shall prepare a Traffic Management Plan that ensures coordination between construction contractor(s) and public safety providers to minimize or eliminate interference with provision of police, fire and emergency medical services. Prior to construction, the plan shall be provided to all emergency service providers within the area. Additionally, emergency service providers shall receive advance notice of all necessary lane closures and detours as a result of project construction. This plan shall be approved by the Merced County and City of Atwater Department of Public Works prior to the issuance of permits to construct the project.

Findings for Impact PS-3:

Mitigation Measure PS-3, which requires the project sponsor to prepare a Traffic Management Plan and to inform all emergency service providers in the City of Atwater, the City of Merced, and Merced County of any road closures and/or detours that would impede emergency access, will substantially lessen the project's impact on emergency service provider response times. These mitigation measures are feasible and effective measures that will reduce the project's impacts on emergency service providers by allowing faster access along the project route. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure PS-3 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

Impact PS-4: Alternative 1A would be built within three tenths of a mile from the southeast corner of a future school site which could result in unsafe conditions for students traveling by foot or bicycle who would have to cross the project.

Facts: If Alternative 1A is selected, it would be in close proximity to the proposed Atwater Elementary School site. Pedestrian and bicycle traffic traveling to and from the school would have to cross the expressway. This would create a safety hazard and conflict with the FHWA's Safe Routes to School guidelines, which are designed to enable and encourage children,

including those with disabilities, to walk and bicycle to school and to make bicycling and walking to school a safer and more appealing transportation alternative. Design consistency with the Safe Route to School guidelines would reduce this impact to a less-than-significant level.

Mitigation Measure PS-4a: If Alternative 1A is selected, the section of the AME between SR 99 and Santa Fe Drive, including the proposed intersection of Avenue 2 with the AME, will be constructed in accordance with the FHWA's Safe Route to School guidelines. Under either alternative, the section of the AME project between SR99 and Santa Fe drive, including the proposed intersection of Avenue Two with the AME, shall be constructed in accordance with the FHWA's Safe Route to School guidelines.

It is anticipated that these guidelines may include requirements for:

- Designated crosswalks crossing the AME
- Traffic-signals equipped with walk/don't walk signals
- Bicycle lanes on Avenue 1 and Avenue 2
- School Crossing signage

Modified Alternative 1B would cross under Avenue One which would allow vehicles, pedestrians, and bicyclists on Avenue One to safely travel over the AME to access the Avenue One School site.

Under Alternative 1A, Avenue One would terminate on either side of the AME, ending in cul de sac on the east and west sides of the AME. Individuals traveling to and from the Avenue One school site would be required to travel south to Green Sands Avenue or north to Avenue Two to cross the AME. This would restrict the ability for some students or other individuals to travel to school using alternative transportation, such as walking or bicycling. This would create a conflict with the FHWA's *Safe Routes to School* guidelines, which are designed to enable and encourage children, including those with disabilities to walk and bicycle to school and to make bicycling and walking to school a safer and more appealing transportation alternative. The following mitigation measure would reduce this impact of Alternative 1A to a less-than-significant level.

Mitigation Measure PS-4b: To provide safe pedestrian and bicycle crossing of Alternative 1A, a pedestrian overpass shall be constructed between the two cul de sacs on Avenue One on the east and west sides of Alternative 1A. Built in accordance with the Safe Route to Schools guidelines, the pedestrian overpass would allow for students to safely cross above the expressway and access the Avenue One school site.

Findings for Impact PS-4:

Mitigation Measure PS-4, which requires the project sponsor to construct the section of the AME between SR 99 and Santa Fe Drive in accordance with FHWA's Safe Route to School guidelines, and to construct a safe pedestrian and bicycle crossing, if Alternative 1A is selected, will substantially lessen the project's impact from potential unsafe conditions for students traveling by foot or bicycle. These mitigation measures are feasible and effective measures that

will reduce the project's impacts on the safety of school children traveling to and from school by ensuring safe bicycle and pedestrian routes. Pursuant to CEQA Guidelines Section 15091(a)(1), MCAG finds that Mitigation Measure PS-4 will be incorporated into the project via conditions of approval or via the Mitigation Monitoring and Reporting Program and the resolution approving the project, and will reduce the identified impacts, to a less-than-significant level.

SECTION 4: SIGNIFICANT EFFECTS THAT MAY NOT BE MITIGATED TO A LESS-THAN-SIGNIFICANT LEVEL

The Recirculated Draft EIR and Response to Comments document identify one impact that cannot be mitigated to a less-than-significant level even though MCAG finds that all feasible mitigation measures have been identified and adopted as part of the project. The significant unavoidable impacts are discussed below.

4.1 Noise

Impact N-2: Implementation of AME project would cause a substantial permanent increase in ambient noise levels in the project vicinity and expose persons to noise levels in excess of standards established in the City of Atwater or Merced County General Plans.

Facts: The AME project would construct a new roadway and therefore create a new source of noise within the AME project area. Noise levels generated by traffic on Alternatives 1A and 1B were compared to both noise levels under existing conditions and under 2030 No Build conditions to determine the potential for a substantial permanent noise level increase at noise receivers in the AME project area. Utilizing noise impact criteria established in the Merced County General Plan, significance thresholds would be exceeded at 25 of the 80 noise receiver locations modeled for Alternative 1A and 23 of the 80 noise receiver locations modeled for Alternative 1B. There would be no exceedance of City of Atwater significance thresholds for the 15 modeled receivers located within the jurisdiction of the City of Atwater. Analysis of noise impacts and mitigation measures are addressed in four major sections:

- Section 1 extends from the beginning of the project alignment at Bellevue Road and SR 59 and extends to the intersection of Bellevue Road and Franklin Road. Within this section, the alignment is the same for both Alternatives 1A and 1B.

- Section 2 begins at the intersection of Bellevue Road and Franklin Road and extends to Santa Fe Drive. Within this section Alternatives 1A and 1B diverge.

- Section 3 begins at Santa Fe Drive and extends to State Route 99. Both Alternatives 1A and 1B occupy separate alignments within this section.

- Section 4 extends from State Route 99 to the end of the project at the intersection of Gurr Road and McSwain Road. Within this section both Alternatives 1A and 1B follow the same alignment.

Mitigation Measure N-2: The project sponsor shall use all available techniques, including the construction of sound walls or earthen berms, and/or the use of quiet paving materials, to reduce exterior noise levels at impacted noise receivers to meet Merced County noise standards.

Because of the rural nature of the project study area, it was recommended by Caltrans that a feasibility and reasonable cost allowance study be conducted to evaluate the costs associated with construction of soundwalls compared to the benefit they would provide. This analysis is provided in the noise study (Appendix D). The reasonableness allowance considers the absolute future noise level, the noise level increase caused by the project, the achievable reduction provided by a sound wall, and the age of the dwelling unit. A base reasonable cost allowance of $52,000 per benefited residence (or residential equivalent) was applied. The majority of the sound walls are considered feasible to construct, however, none of the sound walls evaluated would be considered reasonable under FHWA/Caltrans guidelines.

CEQA requires that significant impacts be mitigated to the extent possible and in most locations the use of a final coat of open graded asphalt concrete (OGAC) over the Portland Cement Concrete (PCC) roadway surface would reduce impacts to a less-than-significant level. The FHWA noise model indicates that there is a difference in noise generation of about 3-dBA between OGAC and PCC pavement types. Given a substantial traffic volume, recent research indicates differences of up to 10 dBA immediately adjacent to roadways. The use of OGAC is far more economical than the construction of sound walls. Therefore, where feasible and where its use would reduce noise levels below county standards, OGAC shall be used as the top layer of paving surface on the AME.

Some jurisdictions, including the FHWA, do not recognize the placement of OGAC alone as sufficient mitigation to reduce noise levels. Therefore, under existing guidelines, the paving on state (Caltrans) facilities with OGAC would not be considered adequate mitigation. In these cases, soundwalls shall be constructed to reduce noise levels at receiver locations below County standards.

Findings for Impact N-2:

The proposed project would cause a substantial permanent increase in ambient noise levels in the project vicinity. It would also expose persons to noise levels in excess of standards established in the City of Atwater and Merced County General Plans. However, Mitigation Measure N-2, which requires the use of all available techniques, including the construction of sound walls or earthen berms and/or the use of quiet paving materials to reduce exterior noise levels, will be implemented in the effort to meet Merced County noise standards. Such measures will be implemented to the extent they are affordable using the base reasonable allowance of $52,000 per benefited residence (or residential equivalent). These measures will decrease the noise levels below County standards in some areas and will fail to reduce the noise levels below County standards in other areas. However, when paving on state (Caltrans) facilities, the project sponsor shall use soundwalls as needed to reduce noise levels at receiver locations below County standards, even if such measures above the base reasonable allowance. These mitigation measures are feasible and effective measures that will reduce the project's noise impacts.

However, pursuant to Section 21091(a)(3) of the Public Resources Code, as described in the Statement of Overriding Considerations, MCAG has determined that this impact, wherein it is not mitigated to a less-than-significant level, is acceptable based on specific overriding considerations found herein in the section outlining MCAG's Statement of Overriding Considerations.

SECTION 5: EFFECTS DETERMINED TO BE LESS-THAN-SIGNIFICANT OR NOT SIGNIFICANT

MCAG finds that, based upon substantial evidence in the record, as discussed below, the following impacts associated with the project are not significant or less-than-significant.

5.1 Land Use and Agriculture

Facts:

The EIR discusses the effect of the Atwater-Merced Expressway ("AME") on land use and agriculture land at pages 4.2-12 through 4.2-16 of the draft EIR.

The project would result in farmland within the project right-of-way ("ROW") being permanently converted to non-agricultural uses. As shown in Table 4.2-3 of the EIR, Alternative 1A would convert 139 acres of Prime Farmland and 169 of Important Farmland to non-agricultural uses and Modified Alternative 1B would result in the direct conversion of 133 acres of Prime Farmland and 171 acres of Important Farmland to non-agricultural uses. This would not be considered a significant conversion of farmland, as the approximately 300 acres of lost acreage represents roughly 0.05% of the 589,324 Prime and Important Farmland acres in Merced County.

Mitigation Measures: Although the conversion of farmland is considered a less-than-significant impact, MCAG shall mitigate for the loss of agricultural lands in conformance with any countywide program adopted by Merced County. Since approximately 2001, the County has approved several community plans for development areas where farmland impacts were mitigated with the requirement for conservation easements at a 1:1 ratio. The requirements have generally applied to impacts to Important or Prime Farmlands affected by the adoption of the plans, within the boundaries of the planned development areas. In the event that a countywide program is not adopted prior to the grading for the AME project, equivalent protection of farmlands at comparable value will be considered at a ratio of 1:1 for productive farmland converted for project implementation. Equivalent protection is defined as acquisition of conservation easements by the County that would protect 1 acre of productive farmland for each acre converted through fee title, easement, or other measure.

Findings:

As noted in the EIR, Important Farmland and Prime Farmland will be converted to non-agricultural uses. Although the conversion of such farmland is considered by MCAG as a less-

than-significant impact, MCAG agrees to mitigate for the loss of agricultural lands in conformance with the countywide program adopted by Merced County.

5.2 Biological Resources and Wetlands

Impact BIO-1: Impacts to Habitat of Sensitive Species Including Listed and Candidate Species.

Impact BIO-1A: Giant Garter Snake.

Facts: While impacts to giant garter snakes are regarded as less-than-significant, avoidance measures shall be implemented by the project sponsor to ensure that this snake would not be impacted by the proposed project. The giant garter snake is a federal and state listed threatened species. There are no contemporary records of giant garter snakes reported in the region of the project area. The closest known record for giant garter snakes was collected in 1908 almost 100 years ago. Accordingly, it is thought that giant garter snakes do not exist within the project area.

> **Mitigation Measure BIO-1A:** Although there are no modern records for giant garter snakes in Black Rascal Creek or Canal Creek, these creeks provide suitable habitat conditions for this snake. Thus, to ensure that there would be no impacts to this snake during any dewatering activities related to creek realignment and/or construction of road crossings, avoidance measures shall be implemented when construction would be within 200 feet of Black Rascal Creek or Canal Creek. The avoidance and minimization measures are detailed in the Guidelines for Procedures and Timing of Activities Related to the Modification or Relocation of Giant Garter Snake Canal or Stream Habitat and the USFWS Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat (USFWS 1999). In addition, if a giant garter snake is found in the work area, the USFWS shall be notified and the snake will be relocated within the same waterbody, outside of the area of effect.

Finding for Impact BIO-1A:

As noted in the EIR, wildlife surveys were conducted in March, April, may, July, September and October of 2006 and in April and May of 2007 to document existing conditions, observe wildlife, and map wildlife habitats. Although the existence of the giant garter snake was not found, MCAG agrees to utilize the avoidance and minimization measures that are detailed in the Guidelines for Procedures and Timing of Activities Related to the Modification or Relocation of Giant Garter Snake Canal or Stream habitat and the USFWS Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat (USFWS 1999) in an effort to ensure the safety of the giant garter snake in the unlikely event such a snake is discovered in the project area.

SECTION 6: SIGNIFICANT CUMULATIVE EFFECTS

The cumulative analysis in the Recirculated Draft EIR utilizes development that is likely to occur under the buildout of the MCAG member-agency General Plan in addition to specific development projects listed in Table 5-1 of the Recirculated Draft EIR.

6.1 Land Use and Agriculture

The area between the Cities of Atwater and Merced, in which the project is located, is gradually undergoing a conversion from agricultural to more urban uses. The project, in conjunction with other projects in the area, will continue this regional trend, which would be considered a cumulative impact to which the project would make a considerable contribution.

6.2 Population, Housing and Employment

The County area is expected to continue to grow and MCAG estimates that during the 20-year period between 2010 and 2030, the population of Merced County is anticipated to grow by 58 percent, adding an additional 175,700 people. The AME project and other roadway projects considered as part of this cumulative analysis are intended to provide for this growth, but do not themselves propose development of housing. Therefore, for the purposes of this analysis, the AME project would not directly result in cumulative population or housing impacts. Because the AME project and these other roadway projects are being planned as part of a regional response to this anticipated growth, particularly residential growth, there is an indirect cumulative impact to population and housing growth in the project areas to which the AME project would contribute.

6.3 Visual Resources

The AME project is part of a county-wide planning effort that will improve regional access, but is also designed to serve growth anticipated in the area, particularly residential growth. This residential growth, particularly around the agricultural areas that surround the AME, would change the visual character of the area form largely rural to suburban. While this impact would not be a direct result of the AME project, it would be an indirect cumulative impact to which the AME project would contribute.

6.4 Noise

Under 2030 with Project conditions, excluding one noise sensitive receiver, cumulative noise levels are anticipated to be less-than-significant with implementation of mitigation measures including the construction of sound walls and/or the use of open grade asphalt concrete (OGAC) as pavement material on the AME roadway surface. Noise receiver R-44 would continue to experience cumulative noise levels in excess of Merced County noise standards. Therefore the AME project would considerably contribute to an identified cumulative noise impact.

6.5 Hydrology, Drainage and Floodplains

The project would convert approximately 90 acres of pervious surface area to impervious surface area which would prevent stormwater from percolating into the groundwater basin. While most of this stormwater would run off the road into drainage areas and percolate into groundwater, a portion of this run off water would enter the channelized drainage channels in the area and would not recharge local aquifers but would instead drain to the San Francisco Bay. However, the percentage of this run off is considered minor when taken as a portion of the entire Merced Basin

drainage area. The other cumulative projects identified in Section 5.9 of the Recirculated Draft EIR are generally roadway capacity and operations improvements project and would not result in large scale changes to land that would result in a decrease in groundwater recharge in the area. It is not anticipated that there will be a direct cumulative impact from the AME and with relation to groundwater recharge. However, as with the discussion of cumulative visual impacts (Section 6.3), the AME project and these other roadway projects are being planned to accommodate future residential growth. This growth could result in an indirect cumulative impact to groundwater recharge as open land is converted to impervious buildings and paving surfaces.

6.6 Biological Resources and Wetlands

Implementation of the proposed project would contribute to a cumulative regional loss of ruderal and grassland habitats, wetland habitats, and sections of irrigation canals and creeks that bisect portions of the project area. Other cumulative impacts would include some loss of orchard areas, eucalyptus groves, irrigated pastures, horse pastures, rotational crops, and permanent crops, as well as common plant and animal species. Since portions of the project area are known to support vernal pool fairy shrimp, and provide potential California tiger salamander aestivation/over-summering habitat and potential San Joaquin kit fox habitat, every effort will be made to prevent impacts to these species to minimize the cumulative loss of this special-status species in the region.

6.7 GHG Emissions Impact

For the purpose of this impact analysis, the AME project was evaluated in the context of current and future local roadway congestion and anticipated vehicle miles traveled in the region. With construction of the AME project, regional VMT and CO_2 emissions would decrease slightly when compared to the 2030 No-Build scenario. Emissions would be reduced by 16,060 – 25,185 tons per year, or approximately 0.5 to 0.8 percent. This reduction and improvements in traffic congestion would make only minor contribution to the region meeting goals mandated under AB 32. Therefore, while the project would not contribute to a cumulative GHG impact, it would not noticeably reduce GHG emissions.

SECTION 7: FEASIBILITY OF PROJECT ALTERNATIVES

7.1 Project Alternatives

The Recirculated Draft EIR included three alternatives: the No Project/No Build Alternative, the Alternative Alignment 1A, and the Modified Alternative Alignment 1B. Each of these alternatives discusses the development of the AME project.

MCAG hereby concludes that the Recirculated Draft EIR sets forth the three alternatives so as to foster informed public participation and informed decision making. MCAG finds that the Alternative Alignment 1A and the Modified Alternative Alignment 1B are feasible; however, the No Project/No Build Alternative is infeasible for the specific economic, social and other considerations set forth below pursuant to CEQA section 21081(c).

7.1.1 No Project/No Build Alternative. The No Project/No Build Alternative assumes that the project area would generally remain in its existing condition and would not be subject to development. Under this alternative, the cumulative impacts to agriculture, noise impacts, and visual resources would not occur, and all existing homes in the project area would remain.

Finding:

The No Project/No Build alternative would not achieve any of the objectives for the AME project. Although this alternative would not result in the significant unavoidable environmental impact related to the implementation of the project, it would also allow 13 of the 29 study area intersections to operate at a Level of Service ("LOS") E or worse. Four two-lane highway segments would operate at LOS E or worse. Freeway mainline operations for practically the entire length of SR 99 within the study area would exceed peak hour capacity, resulting in heavily congested traffic conditions in both directions during both the AM and PM peak hours, though the LOS for all multi-lane highway segments would still be anticipated to operate at an acceptable LOS. MCAG finds that under this alternative, there would be significant traffic impacts to 13 intersections and 4 two-lane highway segments. Therefore, MCAG rejects the No Project/No Build Alternative.

7.2 Environmentally Superior Alternative

CEQA requires the identification of the environmentally superior alternative in an EIR. Of the three alternatives analyzed in the Recirculated Draft EIR, the No Project/No Build Alternative is the alternative with the fewest overall impacts, but the most potentially-significant unavoidable impacts.

Of the remaining two alternatives, MCAG finds that Alternative 1A would require the relocation of more homes, but would not result in some of the impacts identified for Modified Alternative 1B, namely the realignment of a second section of Canal Creek and potential flooding and drainage impacts associated with the depressed section of Modified Alternative 1B. Thus, when taken as a whole, Alternative 1A is identified as the Environmentally Superior Alternative, as Modified Alternative 1B would require two realignments of Canal Creek and the flooding, groundwater, and drainage impacts associated with the depressed section between Green Sands Avenue and Canal Creek.

MCAG finds, based upon the Final EIR and the evidence in the Record as a whole, that both Alternative 1A and Modified Alternative 1B are feasible alternatives, either which may be adopted as the preferred project.

Findings:

MCAG finds that the No Project/No Build Alternative would have the most potentially-significant unavoidable impacts and thus, it is not the Environmentally Superior Alternative.

MCAG further finds that Modified Alternative 1B is not the Environmentally Superior Alternative because of the potential flooding and drainage impacts associated with the depressed section of Modified Alternative 1B. As a whole, Alternative 1A is the Environmentally Superior Alternative. However, both Alternative 1A and Modified Alternative 1B are feasible alternatives if adopted and implemented pursuant to the mitigation measures in the Final EIR. Therefore, MCAG rejects the No Project/No Build Alternative and further adopts the specific overriding considerations found below.

SECTION 8: STATEMENT OF OVERRIDING CONSIDERATIONS

CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a project against its unavoidable risks when determining whether to approve a project. If the specific economic, legal, social, technological or other benefits of the project outweigh the unavoidable adverse environmental effects, those effects may be considered acceptable.[4] CEQA requires the agency to support, in writing, the specific reasons for considering a project acceptable when significant impacts are not avoided or substantially lessened. Those reasons must be based on substantial evidence in the EIR or elsewhere in the administrative record.[5]

In accordance with the requirements of CEQA and the *CEQA Guidelines*, MCAG finds that the mitigation measures identified in the Final EIR and the Mitigation Monitoring and Reporting Program, when implemented, avoid or substantially lessen many of the significant effects identified in the Recirculated Draft and Final EIR. To the extent any mitigation measures recommended in the EIR and/or proposed project could not be incorporated, such mitigation measures are infeasible because they would impose restrictions on the project and would prohibit realization of specific economic, social, and other benefits that MCAG finds outweigh the unmitigated impacts. MCAG further finds that except for the proposed project, all other alternatives set forth in the EIR are infeasible because they would prohibit the realization of project objectives and/or of specific economic, social and other benefits MCAG finds outweigh any environmental benefits of the alternatives.

Nonetheless, some significant impacts of the project are unavoidable even after incorporation of all feasible mitigation measures. The significant unavoidable impacts are identified and discussed in Section 4 of these Findings. MCAG further specifically finds that notwithstanding the disclosure of the significant unavoidable impacts, there are specific overriding economic, legal, social, and other reasons for approving this project. Those reasons are as follows:

a. The project will provide additional north/south roadway capacity to accommodate existing, approved, and planned development within the Cities of Atwater and Merced Spheres of Influence, unincorporated portions of Merced County, and to the New University of California – Merced Campus.

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[4] *CEQA Guidelines*, Section 15093(a)
[5] *CEQA Guidelines*, Section 15093(b)

b. The project will improve access to the Castle Airport Development Center and the United States Penitentiary – Atwater located in unincorporated portions of Merced County.

c. The project will create an alternative route for existing SR 59 to accommodate regional travel demand from north of Bellevue Road to SR 99 and along SR 140 from west of Gurr Road to SR 99.

d. The project will reduce deficiencies and improve operation characteristics of SR 99 by closing the Buhach Road interchange.

e. The project would provide better regional access for public service providers which would be beneficial.

f. The project would provide alternative emergency response routes, which would relieve congestion on existing roadways and potentially create better response times for emergency service providers.

On balance, MCAG finds that there are specific considerations associated with the project that serve to override and outweigh the project's significant unavoidable effects. Evidence in support of this finding exists within the EIR, these findings, and the Record of Proceedings as a whole. Therefore, pursuant to *CEQA Guidelines* Section 15093(b), the identified adverse effects of the project are considered acceptable.

Dates Posted
From: 3/20/09
To: 4/18/09
Merced County

STATE OF CALIFORNIA - THE RESOURCES AGENCY
DEPARTMENT OF FISH AND GAME

ENVIRONMENTAL FILING FEE CASH RECEIPT

Receipt # 020090017

Lead Agency: Merced County Association of Governments (MCAG) *Date:* 03/20/2009

County Agency of Filing: Merced *Document No:* 020090017

Project Title: Atwater- Merced Expressway Project

Project Applicant Name: Jesse Brown *Phone Number:* 209-723-3153

Project Applicant Address: 369 W. 18th St. Merced, Ca 95340 -

Project Applicant: Local Public Agency

CHECK APPLICABLE FEES:

☒ *Environmental Impact Report*	2768.25
☐ *Negative Declaration*	
☐ *Application Fee Water Diversion (State Water Resources Control Board Only)*	
☐ *Project Subject to Certified Regulatory Programs*	
☒ *County Administration Fee*	$50.00
☐ *Project that is exempt from fees (DeMinimis Exemption)*	
☐ *Project that is exempt from fees (Notice of Exemption)*	
Total Received	2818.25

Signature and title of person receiving payment: Leezy

COUNTY OF MERCED
STATE OF CALIFORNIA

BILLING OR CASH/REVENUE EXPENDITURE TRANSFER

1. AUDITOR-CONTROLLER
2. ADVICE-COPY
3. ADVICE-COPY
4. REQUESTORS COPY

EXPLANATION OF BILLING OR TRANSFER:

NOTICE OF DETERMINATION -CALIF. DEPT. OF FISH & GAME FILING FEE
FOR ATWATER-MERCED EXPRESSWAY PROJECT & CO. ADMIN. FEE

CREDIT TO DEPT: **Merced County Clerk**

12 16 INDEX	17 21 ACCOUNT	22 24 T/C	25 26 CL	27 31 JOB CODE	32 33 EL	34 37 WORK TYPE	38 48 AMOUNT	49 68 OPEN MESSAGE	97 101 LINE NO
D3524	D8010	056					< 2768.25 >	#9435 Notice of Determination	03307
34460	91151	099					< 50.00 >	#9435 Co. Admin Fee	
							< >		
							< >		

DATE: 3/20/09 AUTHORIZED OFFICIAL: [signature]

CHARGE TO DEPT: **MCAG**

WL Error OK

91100	22305	083					2768.25	#9435 Not. Of Det. AME	
91100	22305	1					50.00	#9435 Co. Admin Fee	

DATE: 03/19/09 AUTHORIZED OFFICIAL: Marjorie Kirn, Deputy Executive Director

AUDITOR'S APPROVAL TRANSFERRED ON J.E. # 22202 DATE 3-24-9 LISA CARDELLA-PRESTO, AUDITOR-CONTROLLER BY: _____ DEPUTY

AC404

Revised 1/09

Notice of Determination FILED *Appendix D*

TO:
☒ Office of Planning and Research
For U.S. Mail:
P.O. Box Box 3044
Sacramento, CA 95812-3044

Street Address:
1400 Tenth Street
Sacramento, CA 95814

2009 MAR 20 AM 8:11
KAREN D ADAMS
MERCED COUNTY CLERK
BY _____ DEPUTY

☒ County Clerk
County of: Merced County
Address: 2222 M Street
Merced, CA 95340

FROM:
Public Agency: Merced County Association of Governments (MCAG)
Address: 369 West 18th Street
Merced, CA 93540
Contact: Jesse Brown
Phone: (209) 723-3153
Lead Agency (if different from above):
(Same as above)
Address: _____
Contact: _____
Phone: _____

SUBJECT: ***Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.***
State Clearinghouse Number (if submitted to State Clearinghouse): 2006081138

Project Title: Atwater-Merced Expressway Project

Project Location (include county): Merced County

Project Description: Construction and operation of an approximately 7-mile long, 4-lane expressway between the cities of Atwater and Merced in Merced County, California with new interchanges at Santa Fe Road and SR 99.

This is to advise that the MCAG (☒ Lead Agency or ☐ Responsible Agency) has approved the above described project on 03/19/2009 (Date) and has made the following determinations regarding the above described project:

1. The project [☒ will ☒ will not] have a significant effect on the environment.
2. ☒ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☐ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☒ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☒ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☒ was ☐ was not] adopted for this project.
6. Findings [☒ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the Negative Declaration, is available to the General Public at:
MCAG Offices at 369 West 18th Street, Merced, CA 93540

Signature (Public Agency) _____ Title: Executive Director
Date: 3-19-2009 Date Received for filing at OPR: _____

Authority cited: Section 21083, Public Resources Code.
Reference: Sections 21000-21174, Public Resources Code.

Revised 2005

Notice of Determination

Appendix D

FILED

TO:
☒ Office of Planning and Research
For U.S. Mail: P.O. Box Box 3044, Sacramento, CA 95812-3044
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☒ County Clerk
County of: Merced County
Address: 2222 M Street
Merced, CA 95340

FROM:
Public Agency: Merced County Association of Governments (MCAG)
Address: 369 West 18th Street
Merced, CA 93540
Contact: Jesse Brown
Phone: (209)723-3153
Lead Agency (if different from above):
(Same as above)
Address:

Contact:
Phone:

2009 MAR 20 AM 8:12
MERCED COUNTY CLERK
BY
DEPUTY

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MCAG Offices at 369 West 18th Street, Merced, CA 93540

Signature (Public Agency) _____ Title: Executive Director
Date: 3-19-2009 Date Received for filing at OPR: _____

Authority cited: Section 21083, Public Resources Code.
Reference: Sections 21000-21174, Public Resources Code.

Revised 2005

BEFORE THE
MERCED COUNTY ASSOCIATION OF GOVERNMENTS (MCAG)
RESOLUTION NO. 2009/03-19-02

In the matter of:
The Atwater-Merced Expressway

RESOLUTION ADOPTING CEQA FINDINGS AND STATEMENT OF OVERRIDING CONSIDERATIONS, APPROVING THE ATWATER-MERCED EXPRESSWAY PROJECT, AND FINDING CONSISTENCY OF THE ATWATER-MERCED EXPRESSWAY PROJECT WITH THE REGIONAL TRANSPORTATION PLAN

WHEREAS, the Merced County Association of Governments (MCAG) is an Association of Governments, pursuant to Government Code sections 6500 et seq.; and

WHEREAS, MCAG is a Regional Transportation Planning Agency and a Metropolitan Planning Organization, pursuant to state and federal designation; and

WHEREAS, Section 65080 of the California Government Code requires each regional transportation planning agency to prepare a regional transportation plan and update it for submission to the governing Policy Board for adoption; and

WHEREAS, 2007 Regional Transportation Plan ("RTP") was prepared in full compliance with federal guidance and also the state guidelines adopted by the California Transportation Commission; and

WHEREAS, MCAG is the Lead Agency for the Atwater-Merced Expressway ("AME"), which is a proposed 7-mile long transportation corridor located in the northeast portion of Merced County; and

WHEREAS, the AME would connect with State Route (SR) 59 at Bellevue Road north of the City of Merced, and connect with SR 140 at Gurr Road south of the City of Atwater. The AME would cross SR 99 and include a new interchange with SR 99 west of the City of Merced; and

WHEREAS, in 1997, MCAG completed the Route 99 Major Investment Study for the Merced/Atwater urbanized area. The Study evaluated population, housing, and employment growth in the urbanized area through the year 2020. The existing transportation system was modeled and impacts created by future traffic were identified. In 1998, the RTP for Merced County was completed, which designated the AME as high priority in the "Recommended Regional Improvement Project Priorities" list. The RTP was subsequently updated in 2004 and 2007. The AME is thus consistent with the RTP; and

WHEREAS, MCAG prepared the Recirculated Draft EIR to assess the potential significant environmental impacts of development of the AME in November of 2008 and issued the Responses to Comments Documents on February 9, 2009; and

WHEREAS, the Final EIR was certified by MCAG on February 19, 2009, in accordance with Section 15090 of the Guidelines for the California Environmental Quality Act (*See* MCAG Resolution #2009 / 02-19-03).

NOW, THEREFORE, BE IT RESOLVED, that MCAG hereby adopts those certain CEQA Findings and Statement of Overriding Considerations, attached hereto as Exhibit "A"; and be it

FURTHER RESOLVED, that MCAG hereby finds that the AME Project is consistent with the RTP, and directs MCAG staff to take appropriate and necessary actions to include the AME Project as approved in subsequent planning documents; and be it

FURTHER RESOLVED, that the MCAG approves the AME to be planned, constructed and maintained in accordance with the mitigation measures set forth in the Final Environmental Impact Report certified previous hereto; and be it

FURTHER RESOLVED, that MCAG advises and recommends that the County of Merced, City of Merced and City of Atwater to incorporate the AME project into their General and land use plans and new development projects.

THE FOREGOING RESOLUTION was passed and adopted by MCAG this 19th day of March 2009.

AYES: Directors Nelson, Walsh, Kelsey, O'Banion, Varela, Jones, Faul, Spriggs, Mays

NOES: None

ABSTAIN:

ABSENT: Directors Pedrozo, Oliveira

ATTEST:

Signed:

Jesse Brown, Executive Director
Merced County Association of Governments

Signed:

for

Joe Oliveira, Chair
Merced County Association of
Governments Governing Board

BEFORE THE
MERCED COUNTY ASSOCIATION OF GOVERNMENTS (MCAG)
RESOLUTION NO. 2009/02-19-03

In the matter of:
The Atwater-Merced Expressway

RESOLUTION CERTIFYING THE EIR FOR THE ATWATER-MERCED EXPRESSWAY

WHEREAS, the Merced County Association of Governments (MCAG) is an Association of Governments, pursuant to Government Code sections 6500 et seq.; and

WHEREAS, Section 15090 of the Guidelines for the California Environmental Quality Act requires that a final Environmental Impact Report ("EIR") be certified by the "Lead Agency" before approving the underlying project; and

WHEREAS, MCAG is the Lead Agency for the Atwater-Merced Expressway ("AME"), which is a proposed 7-mile long transportation corridor located in the northeast portion of Merced County; and

WHEREAS, the AME would connect with State Route (SR) 59 at Bellevue Road north of the City of Merced, and connect with SR 140 at Gurr Road south of the City of Atwater. The AME would cross SR 99 and include a new interchange with SR 99 west of the City of Merced; and

WHEREAS, in September 2001, the California Department of Transportation ("Caltrans") completed a Project Study Report - Project Development Study (PSR-PDS) that evaluated several possible alignments for the AME. In January 2005, MCAG was authorized by the California Transportation Commission (CTC) to take over the Project Approval/Environmental Document phase of the AME project and MCAG took over the role of lead agency for the environmental document; and

WHEREAS, the MCAG Executive Director approved the Preliminary Design Report for the AME in November of 2007, which finalized the alternative alignments that would be studied in this EIR; and

WHEREAS, MCAG issued a Notice of Preparation of an Environmental Document (NOP) on August 25, 2006 (State Clearinghouse Number 2006081138). A public scoping meeting was held on September 20, 2006 and public comment was taken on that day and continued to be received until September 25, 2006; and

WHEREAS, during the 30-day comment period ending September 25, 2006, written comments regarding the scope and content of the Draft EIR were received from regulatory agencies and interested parties. MCAG and the project team performed extensive technical review of potential environment impacts, including protocol surveys for sensitive biological species, and used these technical reports as the basis of the Draft EIR. The Draft EIR was published on March 3, 2008 and circulated for public review during a 60-day review and comment period. A Public Hearing on the Draft EIR was held on April 1, 2008. Responses to the written comments received on the Draft EIR and comments from the Public Hearing were addressed and incorporated in the AME Final EIR, which was published August 8, 2008; and

WHEREAS, after publication of the AME Final EIR, but prior to certification, several project changes were made to one of the proposed AME project alternatives. The modifications were made due to concern raised by the Atwater Elementary School District (AESD) during the public comment period of the Draft EIR regarding the impacts of Alternative 1B. As a result, MCAG decided that the Draft EIR should be revised and recirculated for a new round of public review and comment; and

WHEREAS, MCAG prepared the Recirculated Draft EIR to assess the potential significant environmental impacts of development of the AME in November of 2008, received public comments during a second public comment period and prepared the Responses to Comments Document on February 9, 2009; and

WHEREAS, the AME Final EIR incorporates the above information, as required by law, to assess the potential significant environmental impacts of development of the project.

NOW, THEREFORE, BE IT RESOLVED, that MCAG hereby certifies the AME Final EIR and finds that it was completed in compliance with the California Environmental Quality Act ("CEQA"); and be it

FURTHER RESOLVED, that the AME Final EIR was presented to the decision-making body of the lead agency (MCAG Governing Board), and that the MCAG Governing Board reviewed and considered the information contained in the AME Final EIR; and be it

FURTHER RESOLVED, that the AME Final EIR reflects the MCAG Governing Board's independent judgment and analysis.

THE FOREGOING RESOLUTION was passed and adopted by MCAG this 19th day of this February, 2009.

AYES: Directors Nelson, Pedrozo, Kelsey, Oliveira, Jones, Faul, Spriggs, Mays

NOES: None

ABSTAIN: None

ABSENT: Directors Walsh, O'Banion, Varela

ATTEST:

Signed:

Jesse Brown, Executive Director
Merced County Association of Governments

Signed:

Joe Oliveira, Chair, Merced County Association of Governments Governing Board