Mountain View Avenue/Avenue 416/El Monte Way Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County, California

Draft Environmental Impact Report/Environmental Assessment and Section 4(f) Evaluation

Prepared by the State of California Department of Transportation,Tulare County Resource Management Agency, Fresno County Public Works Department and the City of Dinuba

The environmental review, consultation, and any other action required in accordance with applicable federal laws for the project is being, or has been, carried out by the Department under its assumption of responsibility pursuant to 23 U.S. Code 327.

May 2008

General Information About This Document

What's in this document?

Tulare County, in cooperation with Fresno County, the California Department of Transportation (Caltrans), and the City of Dinuba has prepared this Environmental Impact Report/Environmental Assessment, which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Fresno County and Tulare County, California. The document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, the potential impacts from each of the alternatives, and the proposed avoidance, minimization and/or mitigation measures.

What should you do?

- Please read this Environmental Impact Report/Environmental Assessment. Additional copies of this document, as well as the technical studies, are available for review at the Tulare County Resource Management Agency at 5961 South Mooney Boulevard, Visalia, CA 93277; the City of Dinuba City Hall, 405 East El Monte Way, Dinuba, CA 93618; the Dinuba Branch Library, 150 S I St, Dinuba, CA 93618; the Windsor Christian Academy, 5018 Avenue 416, Reedley, CA 93654; or the Fresno Central Library, 2420 Mariposa St, Fresno, CA 93721.
- Attend the public information meeting or public hearing on June 17th, 2008.
- We welcome your comments. If you have any concerns regarding the proposed project, please attend the public information meeting or public hearing, or send your written comments to the address below by the deadline. Submit comments via U.S. mail to the following address:

  Tulare County Resource Management Agency
  Attention: Kuna Muthusamy
  5961 South Mooney Boulevard
  Visalia, CA 93277

  Submit comments via email to: kmuthusamy@co.tulare.ca.us
- Submit comments by the deadline: June 27th, 2008.

What happens next?

After comments are received from the public and reviewing agencies, Tulare County, Caltrans and FHWA may: (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, Tulare County could design and construct all or part of the project that is located within Tulare County and the City of Dinuba.

Espanol: 1-800-855-3000

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Tulare County Management Agency, Attn: Kuna Muthusamy, 5961 South Mooney Boulevard; (559) 733-6653 EXT. 4810 Voice, or use the California Relay Service TTY number, [800-735-2929].

SCH# **200411084**
Fresno County – Mountain View
Tulare County – Avenue 416
City of Dinuba – El Monte Way
RPSTPL 5946 (029)

Widen and Improve Mountain View Avenue/ Avenue 416/ El Monte Way from Bethel Avenue in Fresno County to Road 92 in Tulare County, California

Draft ENVIRONMENTAL IMPACT REPORT /ENVIRONMENTAL ASSESSMENT Section 4(f) Evaluation

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 U.S. Code 4332(2) (C) and 23 U.S. Code 327 and 49 U.S. Code 303

THE STATE OF CALIFORNIA
Department of Transportation
and
Tulare County
Resource Management Agency

4/22/08
Date of Approval

Jennifer Taylor, Office Chief
Central Region Environmental Division
California Department of Transportation

4/16/08
Date of Approval

Cynthia Echevarria
Tulare County Resource Management Agency

Summary

Overview of Project Area

The County of Tulare, County of Fresno, and City of Dinuba in cooperation with California Department of Transportation and the Federal Highway Administration propose to widen Mountain View Ave/Avenue 416/ El Monte Way between Bethel Avenue in Fresno County and Road 92 Tulare County, CA.

Purpose and Need

The purpose of this project is to improve traffic operations and reduce congestion along the Mountain View Avenue/Avenue 416/El Monte Way corridor; improve the regional transportation and circulation system in the northern portion of Tulare County and southern Fresno County; rehabilitate and widen the existing Kings River Bridge and/or construct a new bridge or bridges to convey four lanes of traffic over the Kings River; improve circulation in downtown Dinuba; reduce congestion and improve safety in downtown Dinuba; provide pedestrian-friendly streetscape improvements in downtown Dinuba; and install Americans with Disabilities Act compliant sidewalks, curb ramps, and traffic signals (where accessible pedestrian signals are warranted).

Proposed Action

Tulare County, along with Fresno County and the City of Dinuba, proposes to widen and improve Mountain View Avenue/Avenue 416/El Monte Way by designing and constructing approximately 12 miles of four-lane roadway with median and/or median lane from Bethel Avenue in Fresno County east to Road 92 in the City of Dinuba, in Tulare County (refer to Figure 1-2). Within the City of Dinuba, between Road 72 and Road 92, El Monte Way would be improved to four lanes with a combination of raised median and two-way left-turn lane. The project would link the existing four lane roadways (located west of Bethel Avenue in Fresno County and east of Road 92 in Tulare County), resulting in a continuous four-lane facility starting at State Route 99 and continuing into Orosi east of the City of Dinuba.

Two build alternatives are being considered, each with slightly different alignments that would minimize impacts to adjacent natural resources and existing land uses. The most substantial difference between the two alternatives occurs in the City of Dinuba where the alignment for Alternative 1 would widen to the north and the alignment for Alternative 2 would widen to the south. There are important community resources (Rose Ann Vuich Park and Maya Theater) within Dinuba on both sides of the road; each alternative would provide for avoidance of some resources while adversely affecting others.

Joint California Environmental Quality Act/National Environmental Policy Act Document

The project is subject to federal, as well as county, city and state environmental review requirements because Tulare County proposes the use of federal funds from the Federal Highway Administration (FHWA) and/or the project requires an approval action from the FHWA. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act and the National Environmental Policy Act. Tulare County is the project proponent and the lead agency under the California Environmental Quality Act. FHWA's responsibility for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S. Code 327. Some impacts determined to be significant under the California Environmental Quality Act may not lead to a determination of significance under the National Environmental Policy Act. Because the National Environmental Policy Act is concerned with the significance of the project as a whole, it is quite often the case that a "lower level" document is prepared for the National Environmental Policy Act. One of the most commonly seen joint document types is an Environmental Impact Report/Environmental Assessment.

Following receipt of public comments on the Draft Environmental Impact Report/ Environmental Assessment and circulation of the Final Environmental Impact Report/ Environmental Assessment, the lead agencies will be required to take actions regarding the environmental document. Tulare County will determine whether to certify the Environmental Impact Report and issue Findings and a Statement of Overriding Considerations and Caltrans will decide whether to issue a Finding of No Significant Impact or require an Environmental Impact Statement.

The table on page IX summarizes the project's effects: describes avoidance, and identifies level of significance of impacts under the California Environmental Quality Act. Refer to Chapter 2 for detailed background and discussion of project effects for each environmental resource area.

Coordination with Other Agencies

Permits and Approvals Required

Agency	Permit/Approval	Status
United States Army Corps of Engineers	Clean Water Act Section 404	Application to be made during final design
United States Fish and Wildlife Service	Compliance with Section 7 of the Federal Endangered Species Act	Formal consultation with United States Fish and Wildlife Service by Caltrans/FHWA begins when the Biological Assessment is submitted (by FHWA) to Unite States Fish and Wildlife Service. A detailed Riparian and Wetland Mitigation Plan, based on the selected bridge design, must be developed prior to construction.
California Department of Fish and Game	Streambed Alteration Agreement for the Kings River	Application to be submitted during final design; permit required prior to construction
California State Lands Commission	Lease or Lease Amendment for Kings River Bridge	Application to be submitted during final design; permit required prior to construction
Central Valley Regional Water Quality Control Board	National Pollutant Discharge Elimination System Permit and Water Quality Certification Stormwater Pollution Prevention Plan	Application to be prepared by construction contractor with review and approval by lead agency (Tulare County)
Alta Irrigation District	Encroachment permits	Application to be submitted during final design; permit required prior to construction
Consolidated Irrigation District	Encroachment permits	Application to be submitted during final design; permit required prior to construction
Kings River Conservation District	Encroachment permits	Application to be submitted during final design; permit required prior to construction

Summary of Major Potential Impacts from Alternatives

Potential Impact		Alternative 1	Alternative 2	No-Build Alternative
Land Use	**Consistency with the City of Dinuba General Plan**	YES	YES	No Impacts
	Consistency with the Tulare County General Plan	YES	YES	No Impacts
Parks and Recreation		• Would take 34,900 square feet equal to 9.5% from Rose Ann Vuich Park	• Would take 3,799 square feet equal to 1.8% from Rose Ann Vuich Park	No Impacts
Growth		No Impacts		No Impacts
Farmlands/Timberlands		• Would require 55.2 acres of prime and unique Farmland • 39 acres under the Williamson Act	• Would require 54 acres of prime and unique Farmland • 35 acres under the Williamson Act	No Impacts
Community Character and Cohesion		No Impacts	No Impacts	No Impacts
Relocation	**Business displacements**	• 10 business relocations	• 7 business relocations • 2 churches	No Impacts
	Housing displacements	• 62 home relocations	• 57 home relocations	No Impacts
	Utility service relocation	**Temporary disruption to service may occur during construction**		No Impacts
Environmental Justice		Would require relocation of nine (9) residences located in Census Tract Block Groups 5.01-1, 5.01-3.	Would require relocation of seventeen (17) residences located in Census Tract Block Groups 5.01-1, 5.01-3.	No Impacts

Potential Impact	Alternative 1	Alternative 2	No-Build Alternative
Utilities/Emergency Services	Temporary interruption to utility customers during construction may occur during relocation of power lines Both Alternatives would improve emergency response by improving traffic flow		No Impact
Traffic and Transportation/ Pedestrian and Bicycle Facilities	• All roadway segments would be improved to acceptable Level of Service C or better Eight-foot shoulders would be provided to accommodate bicycle traffic within the City of Dinuba. Raised medians and crosswalks would improve safety for pedestrians. Sidewalks, curb ramps, and traffic signals would be installed and would comply with the Americans with Disabilities Act		No Impact
Visual/Aesthetics	• Both Alternatives would have minor visual impacts to residences and businesses due to removal of vegetation. • A riparian/wetland restoration plan will be implemented thus minimizing visual impacts at the Kings River Bridge.		No Impacts
	60 feet of frontage and a row of trees would be taken from Rose Ann Vuich Park	Minor impacts to Rose Ann Vuich Park A landscaped island in front of the former Mayan Theater at the intersection of El Monte Way and Tulare Avenue would be removed	
Cultural Resources	• Partial take of four National Register of Historic Places eligible properties • Complete take of one National Register of Historic Places eligible property (Levis House) • Complete take of the McNab Residence in Fresno County • Complete take of Whittington House in the City of Dinuba. • Removal of a portion of decorative fence in the front of the Bollinger House in the City of Dinuba		No Impacts
	Would require 92 square feet of frontage from the Maya Theater	The Maya Theater would be acquired and removed	
Hydrology and Floodplain	No Impact	No Impact	No Impact

Potential Impact	Alternative 1	Alternative 2	No-Build Alternative
Water Quality and Storm Water Runoff	Minimization measures will be implemented to lessen impacts by construction in or near the Kings River and canals		No Impacts
Hazardous Waste/Materials	Sites were identified that are within the potential construction area or required by right-of-way acquisition • Six known hazardous materials sites, where remediation is complete or on-going, • Seven potential hazardous materials sites, no record of contamination.		No Impacts
Air Quality	• Long-term levels of Carbon monoxide pollutant will be lower with the project than without • Minimization measures will be implemented to lessen temporary impacts related to Construction activities		Long-term levels of Carbon monoxide pollutant will be higher compared to calculated levels with both build alternatives
Noise and Vibration	• Future (2030) traffic noise levels would approach or exceed the FHWA/Caltrans Noise Abatement Criteria at all receptors in the project corridor • Traffic noise levels will also exceed Fresno County's, Tulare County's and City of Dinuba noise compatibility criterion • Reasonable and Feasible Analysis determined Noise barriers would be constructed at three locations reducing noise levels by a minimum 5dBA for 9 residences		Future (Year 2030) noise levels will approach or exceed all federal, state and local noise level criteria at most locations within the proposed project area.
Wetlands and other Waters	Mitigation and Monitoring Plan has been developed and will be implemented to avoid, minimize, or off-set impacts to: **<u>KINGS RIVER:</u>** • Waters of the U.S. – temporary impacts 2.18 acres - permanent impacts 0.01 acres to waters of the United States within the Kings River drainage • **Willow Riparian Woodland** – no temporary - no permanent impact to willow riparian woodland • **Wetlands** – temporary impacts 0.01 acres - permanent impacts 1.61 acres to jurisdictional wetlands in the Kings River basin JURISDICTIONA CANALS • **Waters of the U.S.–** permanent impacts 3.41 acres to waters of the U.S from canal relocations		No Impacts

Potential Impact	Alternative 1	Alternative 2	No-Build Alternative
Plant Species	1. **Sanford's Arrowhead** - the California Native Plant Society lists it as rare and endangered; Sanford's Arrowhead was found during surveys in the Dinuba Town Ditch, which will be impacted by widening Del Monte Way in the City of Dinuba, at Dinuba Town Ditch 1. Pre-construction surveys in the spring prior to construction to determine presence or absence of Sanford's Arrowhead 2. Relocate any plants found during pre-construction surveys 3. Develop a Mitigation Planting and Monitoring Plan in coordination with CDFG and USFWS if plants have to be relocated		No Impacts

Potential Impact	Alternative 1	Alternative 2	No-Build Alternative
Animal Species	• **Bats** – Impacts to bats occupying the Kings River bridge would be minimized to less than significant, by implementing the following avoidance, minimization and mitigation measures: 1. Develop Mitigation and Monitoring Plan in cooperation with a bat expert, the CDFG and USFWS 2. Incorporate a bat-friendly bridge design 3. Pre-construction surveys for bats 4. Bat exclusion measures prior to April 15 of the construction year 5. Bat eviction measures if bats are found to be present during pre-construction surveys • **WESTERN POND TURTLE**-Impacts to western pond turtles utilizing the Kings River or canal would be minimized to less than significant by implementing the following avoidance, minimization and mitigation measures: 1. Pre-construction surveys of the Kings River and canals no more than 24 hours prior to onset of construction 2. Relocation of any turtles observed during pre-construction surveys prior to onset of construction 3. Wetland mitigation and riparian vegetation replanting will recreate any western pond turtle habitat lost • **BURROWING OWLS**-Impacts to burrowing owls utilizing any area of the project to nest or forage will be minimized to less than significant by the implementation of the following avoidance, minimization and mitigation measures: 1. Pre-construction surveys no more than 14 days prior to onset of construction according the California Burrowing Owl Consortium Guidelines, 1993 2. If owls are detected during surveys the CDFG will be contacted to develop a mitigation plan to include establishment of a 250-foot buffer zone • **MIGRATORY BIRDS, INCLUDING WHITE TAILED KITE, COOPER'S HAWK AND SWALLOWS**-Impacts to migratory birds including White tailed kite, Cooper's hawk and swallows would be minimized to less than significant by implementing the following avoidance, minimization and mitigations measures 1. Implementation of Migratory and Swallow Contract Special Provisions 2. Migratory Birds/Special-Status Bird Species 1. Raptors – nest along the Kings River 2. Cliff Swallows – nest on the Kings River Bridge **3.** Burrowing Owls – burrows used for nesting may be crushed		No Impacts

Threatened and Endangered Species	The proposed project would potentially have adverse effects on species listed under the Federal Endangered Species Act and the California Endangered Species Act as threatened or endangered, including the Valley elderberry longhorn beetle. The implementation of San Joaquin kit fox Contract Special Provisions will prevent impacts to the fox.	No Impacts
Invasive Species	The implementation of Noxious Weed Contract Special Provisions will prevent the dispersal of invasive plant species that is of special concern along the Kings River.	No Impacts
Construction	• Utility Services may temporarily be impacted during construction since utilities located in the existing and proposed right-of-way areas must be relocated. • Emergency service providers would be coordinated with for each construction phase, coordination with emergency service providers would be required in order to ensure that access to adjacent homes and businesses is maintained at all times. • Traffic and Transportation/ Pedestrian and Bicycle Facilities Travel lane and/or sidewalk closures may occur during various phases of construction, resulting in detours and temporary traffic delays associated with the construction period. • Water Quality and Storm Water Run Off and Construction work in or near the waters of the Kings River could result in increased sediment loads, turbidity, and siltation if soils entered the water, or if heavy equipment operates in the stream channel. Increased sedimentation could adversely affect aquatic life, as could the accidental introduction of construction-related pollutants. • Water quality in Kings River could also be adversely affected if additional untreated roadway runoff flows directly to the river. Adverse water quality impacts could also occur in the course of construction within the irrigation canals, as many of these canals flow to the Kings River. • Air Quality The primary pollutant associated with construction activity is particulate matter 10 microns in diameter or smaller, with the primary source being entrainment of fugitive dust from demolition, land clearing, earth moving, and wind erosion of exposed soil. • Noise and Vibration during the construction phases of the project, noise from construction activities would dominate the noise environment in the immediate area. Activities involved in construction would generate noise levels ranging from 85 to 88 dBA at a distance of 50 feet. Construction noise impacts could be significant, if nighttime operations or use of unusually noisy equipment resulted in annoyance or sleep disruption for nearby residences.	No Impacts

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CHAPTER 1 – PROPOSED PROJECT

1.1 Introduction

The County of Tulare along with Fresno County and the City of Dinuba, in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to improve a 12 mile stretch of Mountain View Avenue/Avenue 416/El Monte Way from Bethel Avenue to Road 92, providing a direct connection for this area's residents and industry to State Route 99, the region's main north-south transportation link. The project roadway carries a substantial amount of truck traffic that serves the area's agricultural activities, food processing plants, produce packing houses, container manufacturing plants, warehousing and distribution centers. According to the Transportation Technical Report prepared for the project by Y&C Transportation Consultants, Inc. (June 2002), increased traffic volumes are projected over the study period (2001-2030), resulting in unacceptable Levels of Service on roadway segments and at intersections.

This project is currently included in the 2007 Federal Transportation Improvement Program. The project is also proposed for funding from a combination of sources including local, Measure R, State Transportation Improvement Plan and Federal Sources. At the present time, final design is scheduled to begin in 2009, right-of-way acquisition is scheduled for 2010 and construction is scheduled to begin in 2011. The Mountain View Avenue/Avenue 416/El Monte Way widening project is consistent with the priorities of the Tulare County Association of Governments for roadway improvements within Tulare County and is included in the 2007 Regional Transportation Plan. In addition, this project is programmed into the Regional Transportation Improvement Program for Fresno County and will also receive funding through Fresno County of Governments Measure C, Tier 1 Projects. This project would be built in multiple phases.

Within the project limits, the existing roadway cross section[1] has various lane configurations and widths; in the rural segments in Fresno and Tulare County, the road consists of two travel lanes, one in each direction. In the City of Dinuba, the cross section varies from a three-lane road with a center left-turn lane to a five-lane road with a center left-turn lane. Curb, gutter and sidewalk exist in some sections within Dinuba, but are not continuous throughout Dinuba.

Tulare County, along with Fresno County and the City of Dinuba, proposes to widen and improve Mountain View Avenue/Avenue 416/El Monte Way by designing and constructing approximately 12 miles of four-lane roadway with median and/or median lane from Bethel Avenue in Fresno County east to Road 92 in the City of Dinuba in Tulare County (refer to Figure 1-2). Within the City of Dinuba, between Road 72 and Road 92, El Monte Way would be improved to four lanes with a combination of raised median and two-way left-turn lane. The project would create a continuous four-lane roadway starting at State Route 99 and ending in Orosi by linking the four-lane sections that currently exist west of Bethel Avenue in Fresno County and east of Road 92 in Tulare County. The replacement of the Kings River Bridge in Tulare County to provide a four-lane structure is also proposed.

[1] The roadway **cross section** is the term used to describe the number and width of travel lanes in both directions, the shoulder area on either side of the road, and in urbanized areas it can also include curb, gutter and sidewalk and raised median. Refer to Appendix E for a glossary of terms.

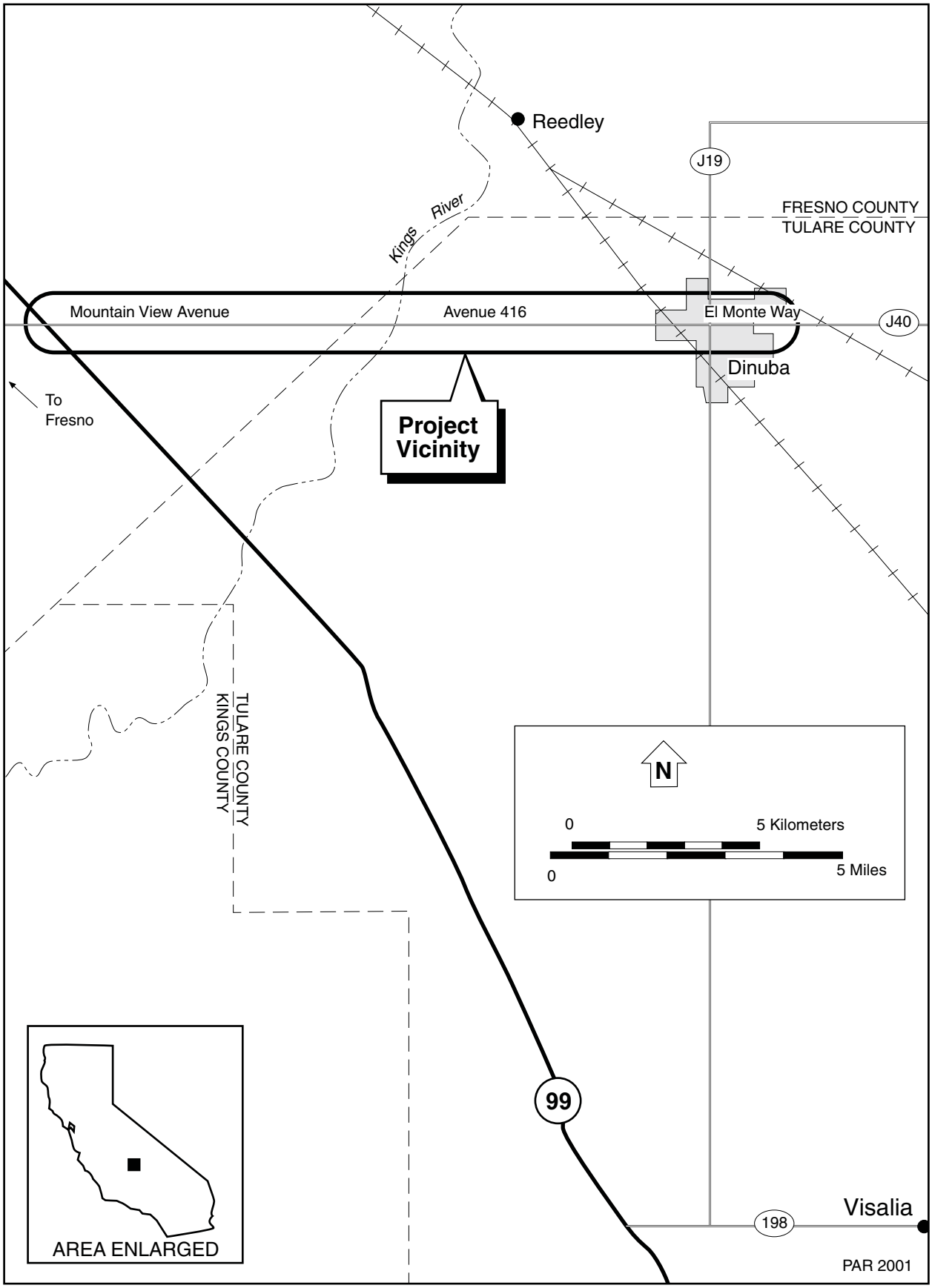


Figure 1-1. Project Vicinity Map

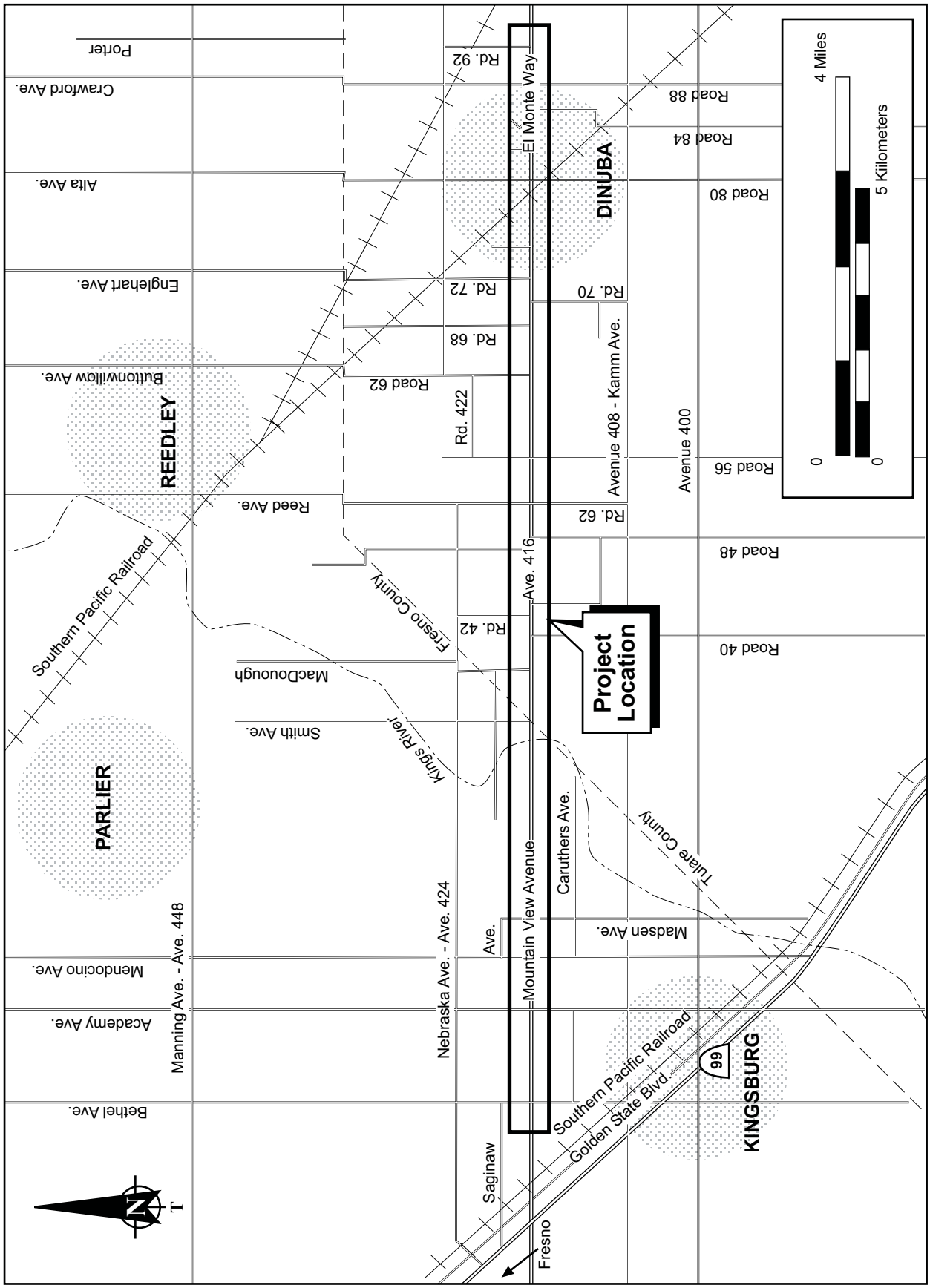


Figure 1-2. Project Location Map

1.2 Purpose and Need

1.2.1 Project Purpose

The purpose of this project is:

- To provide congestion relief to improve traffic flow on the regional transportation and circulation system in the northern portion of Tulare County and southern Fresno County.
- To provide pedestrian-friendly improvements in downtown Dinuba and comply with the Americans with Disabilities Act.
- To be consistent with existing and planned local development.
- To improve the safety and operation of Mountain View Avenue/Avenue 416/El Monte Way.

1.2.2 Project Need

According to the Transportation Technical Report prepared for the project by Y&C Transportation Consultants, Inc. (June 2002), increased traffic volumes are projected over the study period (2001-2030), resulting in unacceptable Levels of Service on roadway segments and at intersections.

The City of Dinuba has established Level of Service[2] C as the minimum desirable Level of Service for arterials and collectors. Figure 1-3 is a graphical representation of all Level of Service grades. Traffic volumes are predicted to increase on the project roadway over the study period (2001 to 2030), and the Level of Service will reach unacceptable levels (Level of Service E and F) at most intersections and in most roadway segments by 2030. The project roadway carries a substantial amount of truck traffic that serves the area's agricultural activities, food processing plants, produce packing houses, container manufacturing plants, warehousing and distribution centers. Truck traffic is estimated at 15 percent of the average daily traffic[3] in Fresno and Tulare counties and 11 percent of the average daily traffic in the City of Dinuba.

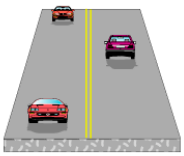
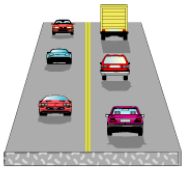
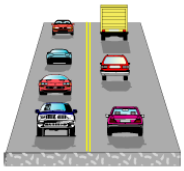
[2] Level of Service is the qualitative term used to describe whether a roadway segment or intersection has sufficient capacity to serve expected traffic volumes. Level of Service is expressed qualitatively with letters "A" through "F" from best to worst. Level of Service A to E generally represents traffic volumes at less than roadway capacity, while Level of Service F represents over-capacity to forced flow conditions.

[3] Average Daily Traffic is the volume of traffic traveling in both directions on a road segment averaged over 24 hours.

Figure 1-3. Level of Service Graphic

LEVELS OF SERVICE

for Two-Lane Highways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		55+	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. **No delays**
B		50	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. **No delays**
C		45	Stable traffic flow, but less freedom to select speed, change lanes or pass. **Minimal delays**
D		40	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. **Minimal delays**
E		35	Unstable traffic flow. Speeds change quickly and maneuverability is low. **Significant delays**
F			Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. **Considerable delays**

Source: 2000 HCM, Exhibit 20-2, LOS Criteria for Two-Lane Highways in Class 1

Table 1-1 summarizes Level of Service changes for major intersections and the roadway segments that are projected to occur in the study area. A detailed description of traffic conditions, existing and projected, is provided in the *Transportation Technical Report, Mountain View Avenue/Avenue 416 (El Monte Way) Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County, California* prepared by Y&C Transportation Consultants, Inc., June 2002.

Table 1-1. Summary of Traffic Conditions for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project

Time Period	LOS[1]- Intersections	LOS Roadway Segments
Existing Conditions (2001)	LOS C or better at 33 studied intersections including six signalized intersections*	LOS C and D in all project segments
2010	LOS F in PM Peak period at Road 72 and Alta Avenue; delays at unsignalized intersections would be between 51 seconds and 16 minutes	LOS D and E for full length of project
2030	LOS F in AM and/or PM Peak periods at four out of six signalized intersections; delays at unsignalized intersections would be between 50 seconds and 16 minutes	Fresno County segments LOS D and E; Tulare County segments LOS E and F.

[1] LOS = Level of Service
*Signalized intersections are Mountain View Avenue/Mendocino Avenue; Avenue 416/Road 72; El Monte Way/Monte Vista Avenue; El Monte Way/Road 80 (Alta Avenue); El Monte Way/Tulare St.-Perry St.; El Monte Way/Crawford Avenue.
Source: *Y&C 2002 addendum 2007*

The traffic report (Y&C Transportation Consultants, Inc. [Y&C] 2002 addendum 2007) indicates that under existing conditions, all study intersections operate at acceptable Level of Service. It should be noted that one individual movement at intersection of E. El Monte Way/Nichols Avenue (K Street) and one movement at E. El Monte Way/ Easton Avenue would experience Level of Service E during one peak period, but overall, those intersections are operating at an acceptable Level of Service.

Accident rates on Mountain View Avenue/Avenue 416/El Monte Way were obtained from Fresno County Public Works Department, Tulare County Resource Management Agency and the City of Dinuba, and are shown in Table 1-2. The data indicate that, in Fresno County and the City of Dinuba, there is a slightly higher accident rate along Mountain View Avenue and on El Monte Way when compared to similar state roads in the same counties. Also, the total accident rate in the City of Dinuba is four times higher than the accident rate of similar state facilities in the same county. In Tulare County, the accident rate is slightly lower compared to similar state roads in the same county. Additionally, within the City of Dinuba, there are safety issues related to intersecting streets that are not at right angles to El Monte Way.

The proposed project would improve safety in the rural portions of the roadway (in Fresno County and Tulare County) by providing four travel lanes with median and dedicated left-turn pockets at major intersections and at other critical points where left-turn volumes warrant them.

Table 1-2. Accident Rates On Mountain View Avenue/Avenue 416/El Monte Way from 1998 to 2000

Segment	Accident Description	Average Accident Rate (Number of accidents/million vehicle-mile)	Accident Rate of Similar State Facilities in the Same County (Number of accidents/million vehicle-mile)
Fresno County	Total Accidents	0.75	0.69
	Fatal+Injury	0.44	0.35
Tulare County	Total Accidents	0.48	0.51
	Fatal+Injury	0.17	0.21
City of Dinuba	Total Accidents	8.69	2.17
	Fatal+Injury	1.23	1.29

Source: *Y&C 2002 addendum 2007*.

The proposed project would improve safety in downtown Dinuba by configuring intersections to meet Avenue 416 at 90-degree angles where feasible, by providing additional turn lanes, and by signalizing critical intersections.

Major industrial and commercial concerns in Dinuba, at the present time, include food processing plants, a warehousing distribution center, produce packing houses, car dealerships, and retail stores. These businesses provide approximately 2,300 full-time jobs (Meinert 2002). Development planned in the City of Dinuba includes residential and commercial development. Since 2002, Dinuba has averaged 48 residential construction permits per year (Magyar 2005). From December 2005 through October 2007, the City of Dinuba has issued 326 single-family unit construction permits (Meinert 2007).

Areas annexed in 2002 will provide approximately 346 acres for residential development over the next 10 years. Between 2002 and 2006, 312.5 acres have been annexed for residential development with another 161 acres awaiting annexation that will provide additional residential development (Meinert 2006). Existing development combined with planned development in the City of Dinuba will increase trips on the road. Currently, in 2007, there are 935 lots in approved final subdivision maps, 1,451 lots in approved tentative maps and 698 lots in pending tentative maps (Meinert 2007).

The area south of El Monte Way, between Road 72 and Alta Avenue, is planned for commercial and light industrial uses. This 280-acre area extends from El Monte Way to Sierra Way and is approximately 38 percent built out with auto dealerships, warehousing and food processing facilities. Development by new businesses and expansion of existing businesses affect another 100 acres of the commercial/industrial area. These include a Wal-Mart store on 28 acres fronting on El Monte Way that began construction in the fall of 2004 and opened in the summer of 2005 (Meinert 2005). Other new and planned development (as of April 2005) includes an urgent care clinic that has opened on the southeast corner of West El Monte Way and Arkona Avenue. The adjacent property at the southwest corner of Alta Avenue and West El Monte Way has been purchased by Walgreen's (Meinert 2005). In addition, 35 acres are pending annexation that would provide commercial and light industrial development (Meinert 2006).

The City of Dinuba also applied to the Tulare County, Local Agency Formation Commission for annexation of approximately 358 acres to the west of the existing city limits, between Avenue 416 and Dinuba's wastewater treatment plant. The City's intent is to amend its general plan to permit development of this area with a golf course and residential sites for approximately 100 residential units (Meinert 2004).

Population projections for the counties and Dinuba are shown for the year 2020 in Table 1-3. In the unincorporated portion of the project area (Fresno and Tulare counties) the General Plans provide for agricultural land uses. No major land use changes are planned in the unincorporated areas, other than the previously mentioned City of Dinuba annexation proposal.

Table 1-3. Population Projections for the Project Area

Area	Year 2000	Year 2020	Percent Change
Fresno Co.	815,602	1,185,150	45.3%
Tulare Co.	368,021	465,675	26.5%
City of Dinuba	16,800	27,000*	64%

Source: *Fresno County Projections are from Council of Fresno County Governments; Tulare County and Dinuba Projections are from Tulare County Council of Governments; *1997 Dinuba General Plan projection.*

1.3 Alternatives

This section describes the proposed action and the design alternatives that were developed by a multi-disciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts. The alternatives are Alternative 1, Alternative 2 and the No-Build Alternative.

A selection process was used to arrive at the alternatives that would be examined in this environmental document. For each segment (A through F), several design options were evaluated in the preliminary design and in the technical studies for the project. The selection process is discussed in greater detail under "Alternatives Considered and Eliminated from Further Consideration." Evaluation criteria were used to select segment design options that were combined to comprise a Preferred Build Alternative and one additional alternative that are addressed in this Environmental Impact Report/Environmental Assessment as follows:

- Alternative 1 is composed of Segment Design Options A-1/B-1/C-3/D-5/E-3/F-3.
- Alternative 2 is composed of Segment Design Options A-1/B-1/C-2/D-2/E-3/F-2.

The proposed alignments for each alternative are shown on the figures in Appendix I. Figures 2 through 8 and Figure 16 show the proposed alignment for Alternative 1, and Figures 9 through 16 shows the alignment for Alternative 2.

1.3.1. Build Alternative

1.3.1.1 Common Design Features of the Build Alternatives

Roadway Cross Section

The roadway cross section would be the same for both build alternatives. The proposed typical cross sections for the project are shown in Appendix J. Table 1-4 summarizes the typical cross section features for each jurisdictional area within the project corridor.

Table 1-4 Typical Cross Section Features for each Agency

Fresno County	Tulare County	City of Dinuba
• Four 12-foot travel lanes • 22-foot median • Paved outside shoulders • Unpaved recovery area • Cut/fill slope • Drainage ditch and facilities as needed • Location of utilities within roadway right-of-way	• Four 12-foot travel lanes • 22-foot median • Paved outside shoulders • Unpaved recovery area • Cut/fill slope • Drainage area / Utility area as needed	• Four 12-foot travel lanes • Either a 16-foot wide raised median (12-foot wide east of Tulare Avenue) or a single 12-foot wide shared center lane for left turns • Paved shoulder width varying between 3-foot wide with 2-foot gutters to provide the minimum space for bicyclists or 8-foot paved shoulders that would permit parking • 5-foot wide sidewalks • Curb and gutter • Utilities placed under or behind sidewalks as needed

In Fresno County, the proposed right-of-way would conform to the existing Precise Plan Line[4] for most of the Fresno County portion of the project, with the following exceptions that would be needed to improve an existing substandard vertical curve.

Between Bethel Avenue and Academy Avenue, the right-of-way must be offset from the Precise Plan Line by an additional seven to 12 feet in three separate locations as shown in Figure 2 in Appendix I.

In Tulare County, the maximum proposed right-of-way would be 155 feet. In the rural segments of the project, emergency cross over points in the median would be spaced at 0.25-mile to 0.5-mile intervals.

Within the City of Dinuba, the right-of-way width would vary from 96 feet to 100 feet to minimize impact to structures and other resources. Between Perry Avenue and Crawford Avenue, the right-of-way width would remain at 82 feet.

Within the City of Dinuba, intersection modifications are also proposed to reduce the number of offset and acute angle intersections. Mariposa Street would be terminated at J Street and J Street,

[4] Precise Plan Line = Fresno County Board of Supervisors established the Precise Plan Line in 1966 to ensure that development along Mountain View Avenue would be set back from the future roadway alignment.

would be realigned to match North Villa Avenue; Merced Avenue would terminate in a cul-de-sac. Key intersections would be signalized.

Roadway Alignment

The proposed alignments for the two build alternatives have some segments that are the same. The Fresno County segments (Segments A and B) are the same for both alternatives. This part of the alignment conforms to the adopted Fresno County Plan Line. All widening is to the south side of the existing roadway from Bethel Avenue to Madsen Avenue, and then the widening transitions to the north side of Mountain View Avenue so that the existing lanes become the eastbound lanes. In the Tulare County portion of the project, the alignment between Road 64 and Road 72 is the same for both alternatives. This portion of the alignment (Segment E) meanders to minimize impacts to developed properties. In the Dinuba section of the project (Segment F) between Road 72 and I Street, and between California/Hayes Avenues and Road 92, the alignments are the same for both alternatives.

Bridge Design

The proposed project includes replacement of the existing Kings River Bridge (Bridge No. 46C-0027), which spans over the Kings River in Tulare County, within Segment C. The existing bridge is 30.8 feet wide with 26 feet of width for two 12-foot travel lanes and one-foot shoulders. A preliminary seismic analysis has determined that the existing bridge would need to be retrofitted if it is widened and left in place.

Five design options, in addition to a no-build scenario, were examined for the Kings River Bridge. Kings River Bridge design options 1, 2, and 5 have been dropped from further consideration and are described later in this section.

Two out of the five bridge design options, design options 3 and 4, continue to be carried forward for further consideration. These two design options are described as follows:

- **Bridge Design Option 3: Construct Two Bridges.** Remove the existing bridge and construct two new bridges, each approximately 39 feet wide with two 12-foot lanes, 8-foot outside shoulders, and four-foot inside shoulders. These bridges would be designed to use the most efficient span lengths because they would not have to match any existing hydraulic condition.
- **Bridge Design Option 4: Construct One Bridge.** Remove the existing bridge and construct one new bridge, approximately 89 feet wide with four 12-foot lanes, eight-foot outside shoulders, and eight-foot inside shoulders. The inside shoulders would be wider than standard due to maintaining the proposed alignment with a 22-foot wide median. As with Option 3, this bridge would be designed to use the most efficient span lengths because no existing hydraulic condition would have to be matched.

The general plan for each bridge design option is shown in Appendix K, with two types of bridge structures for each design option:

- a pre-cast concrete bulb "T" girder (B) or
- a cast-in-place pre-stressed concrete box girder (C).

Drainage

The City of Dinuba is currently proposing to improve drainage basins and trunk lines in the El Monte-Euclid, midtown and Crawford-Olive drainage basins due to development and the need for improved drainage facilities within the City. These improvements are not part of this project.

1.3.1.2 Unique Design Features of the Build Alternatives

Alternative 1

Beginning at the Fresno County/Tulare County line (Smith Road/Road 32) and extending to Road 52 (Segment C), Alternative 1 widens to the north of the existing Avenue 416 roadway, then transitions to the south to avoid a residence and a private school, formerly the Windsor School (Figure 4, Appendix I). Between Road 52 and Road 64 (Segment D) widening is to the north (existing lanes become the eastbound lanes), then transitions south from 1,800 feet east of Road 56 up to Road 64. In this section of the alignment, the Traver Canal would be realigned to the south to avoid one residence and an existing packing facility on the north side of the road (Figure 5, Appendix I). This alternative would require realignment of 3,805 linear feet of the Traver Canal.

Alternative 1 in the City of Dinuba (Segment F) would transition north beginning near I Street/Eaton Street to minimize impacts to the Christ Believers Church and the former Maya Theater (now a Church [Figure 7, Appendix I]).

Alternative 2

Beginning at the Fresno County/Tulare County line (Smith Road/Road 32) and extending to Road 52 (Segment C), Alternative 2 widens to the north, and existing lanes would become the eastbound lanes (Figure 11, Appendix I). The alignment would transition to the south to avoid the former Windsor School. Between Road 52 and Road 64 (Segment D) widening is to the north and existing lanes would become the eastbound lanes (Figure 12, Appendix I). The transition to the south would begin between Road 62 and Road 64 to avoid the packing facility. Realignment of 2,500 linear feet of the Traver Canal would be required.

Alternative 2 in the City of Dinuba (Segment F) would remain to the south and would minimize impacts to Rose Ann Vuich Park (Figure 14, Appendix I).

1.3.2 No-Build Alternative

The No-Build Alternative would maintain the existing roadway cross sections, lane and intersection configurations in the project boundaries. No replacement or modification of the Kings River Bridge would take place. Current maintenance activities of the bridge and roadway would continue.

The No-Build Alternative would not meet the project purpose of improving safety and maintaining Level of Service. With the expected increase in the volume of traffic along Mountain View Avenue/Avenue 416/El Monte Way, Level of Service will reach unacceptable levels (Level of Service E and F) at most intersections and in most roadway segments by 2030.

1.3.3 Comparison of Alternatives

Several design options were evaluated for each segment (A through F) in the technical studies for the project. At the technical study stage, Alternatives had not been selected. Evaluation criteria were used to select segment design options that were combined to comprise the build alternatives that are addressed in this environmental document.

Criteria used to select the alternatives presented within this document are described below.

- Number of community institutions (churches, schools, parks) affected
- Number of residences affected
- Number of commercial properties/buildings affected
- Cultural resources (historic structures or features) affected
- Irrigation/drainage facilities affected
- Amount of right-of-way required
- Biological resources affected

Table 1-5 provides a summary comparison of the two build alternatives. In the rural sections of the project (Segments A through E), for the most part there are only minor differences between the two alternatives. In Segment D, both alternatives would realign the Traver Canal to avoid affecting a large produce packing facility on the north side of Avenue 416; however, Alternative 1 would avoid a residence by realigning 3,805 linear feet of the Traver Canal. Alternative 2 would realign 2,500 linear feet of canal, but would require removal of one residence on the north side of Avenue 416.

The major differences between the two build alternatives occur in the City of Dinuba (Segment F). Most impacts to residences and businesses and other community institutions occur in this segment. While Alternative 2 would affect eight fewer residences and three fewer businesses than Alternative 1, it would require relocation of two church congregations. Alternative 2 would also require demolition of the former Maya Theater, a property that is eligible for the National Register of Historic Places. The former theater has been acquired by one of the church congregations and is being refurbished for their use. Alternative 1 would have a greater affect on Rose Ann Vuich Park than would Alternative 2. The Dinuba City Council, however, has expressed a preference for Alternative 1 to avoid impacts to the churches and the National Register of Historic Places-eligible property.

Final identification of a preferred alternative will occur subsequent to the public review and comment period for this environmental document.

After the public circulation period, when all comments have been considered, Caltrans and Tulare County will select a preferred alternative and make the final determination of the project's effect on the environment. In accordance with the California Environmental Quality Act, Tulare County as the California Environmental Quality Act lead agency will certify that the project complies with the California Environmental Quality Act, prepare findings for all significant

impacts identified, prepare a Statement of Overriding Considerations for impacts that will not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have been considered prior to project approval. Tulare County will then file a Notice of Determination with the State Clearinghouse that will identify whether the project will have significant impacts, mitigation measures were included as conditions of project approval, findings were made, and a Statement of Overriding Considerations was adopted. Similarly, if Caltrans, as assigned by FHWA, determines the action does not significantly affected the environment, Caltrans will issue a Finding of No Significant Impact in accordance with the National Environmental Policy Act.

Table 1-5. Comparison of Alternative 1 and Alternative 2

	Alternative 1 Preferred Project (A-1/B-1/C-3/D-5/ E-3/F-3)	Alternative 2 (A-1/B-1/C-2/D-2/ E-3/F-2)	Difference
Biology[1]			
Waters of the U.S	3.4 acres	3.4 acres	No difference between Alternatives 1 and 2
Right-of-way Take	106.0 acres	104.2 acres	Alternative 1: 1.8 more acres
Displacements –Number of Properties			
Residential	62	57	Alternative 1: 5 more residences
Business	10	7	Alternative 1: three more business
Church	0	2	Alternative 2: two more churches
Park Impacts acres feet	 0.8 acres 60 feet	 0.08 acres 10 feet	Alternative 1: 0.72 more acre/50 feet more frontage
Cultural Resources: Full Take of Eligible Historic Properties			
National Register[2]	1	2	Alternative 2: one more eligible
California Register[3]	2	2	Alternatives equal
Agriculture Permanent Impacts			
Prime and Unique Farmland	55 acres	54 acres	Alternative 1: one more acre
Land Under Williamson Act Contract	38.8 acres	34.8 acres	Alternative 1: four more acre
Impacts on Crops			
Row Crops	13.84 acres	13.24 acres	Alternative 1: 0.6 more acre
Vineyards/Orchards	51.33 acres	49.37 acres	Alternative 2: 1.96 more acre

[1] The bridge type has not been selected. Therefore, impacts to wetlands and riparian vegetation as well as endangered species habitats are for the maximum footprint.
[2] National Register of Historic Places
[3] California Register of Historic Places

1.4 Environmentally Superior Alternative

The California Environmental Quality Act Guidelines Section 15126(e)(2) requires that an Environmental Impact Report identify an environmentally superior alternative. In this instance,

Alternative 1 is considered the environmentally superior alternative because it avoids a significant unavoidable impact (under the California Environmental Quality Act) to one of the two National Register of Historic Places-eligible properties that would be affected by the project and avoids displacing two church congregations.

1.5 Alternatives Considered but Eliminated from Further Discussion

1.5.1 Alternative Selection Process

A selection process was used to arrive at the segment design options that would be carried through for full consideration in the environmental technical studies. Once the technical studies were completed for the project, the Project Design Team combined segment design options for Segments A through F to comprise Build Alternatives to be addressed in this Environmental Impact Report/Environmental Assessment.

Evaluation criteria were chosen, and each segment design option was examined to determine if any should be dropped from further consideration.

In the Fresno County segments (Segments A and B), the following set of criteria was used as the basis for evaluating the horizontal alignment design options:

- Consistency with the 1966-adopted Precise Plan Line
- Number of residential displacements
- Length of overhead electric and utility lines to be relocated

Other criteria such as irrigation/drainage facility impacts and re-use of existing pavement provided neutral results in a comparison between design options.

It was also determined during preliminary design that a meandering alignment would increase the number of residential impacts as a result of the exact location and spacing of existing structures. A meandering alignment was therefore not developed for consideration based on inconsistency with the Precise Plan Line, the greatest number of residential impacts, and not providing any substantive advantage over the developed design options, which are straight alignments.

The Precise Plan Line for Mountain View Avenue within the project limits, adopted by Fresno County in 1966, established the exact location of rights-of-way for future highway widening projects as shown in the Fresno County General Plan Circulation Element. Fresno County has provided consistent public notice regarding the history and usage of the Precise Plan Line and has approved development on and near Mountain View Avenue based on the Precise Plan Line. For the above reasons, the Precise Plan Line for Mountain View Avenue would be the design options carried forward for consideration in the Environmental Impact Report alternatives in Fresno County.

The criteria that were used as the basis for evaluating the Tulare County design options are as follows:

- Number of residences affected
- Number of commercial properties/buildings affected
- Cultural resources (pre-historic/historic structures or features) affected
- irrigation/drainage facilities affected
- Other utility relocation affects
- Length of existing roadway that cannot be re-used
- Number of properties covered by the California Land Conservation Act (Williamson Act)

In the City of Dinuba, segment design options were examined using the following priorities that were selected by the City Council at hearings where public input was solicited:

- Pedestrian and vehicle safety
- Aesthetics (opportunities for landscaping, emphasis on landscaped and/or raised medians)
- Efficient movement of vehicles
- Maximum access to and from El Monte Way

The results of the segment design options selection process are summarized in Table 1-6. Those segment design options that make up the Environmental Impact Report alternatives are unshaded. The shaded design options were eliminated either in the preliminary design evaluation phase or after the technical study phase was complete.

1.5.1.1 Section 4(f) Avoidance Alternatives

No-Build Alternative

Although the No-Build Alternative, previously discussed in Section 1.3.2, would avoid all Section 4(f) properties, this alternative would not be acceptable in meeting the purpose and need of the project.

Alternative Location for Improvements

Using an alternative location would require complete realignment and reconstruction of the existing facility. Again, while this alternative could avoid Section 4(f) properties, it is not a feasible alternative due to high economic and environmental cost.

The full discussion of the Section 4(f) evaluation can be found in Appendix B of this document.

1.5.2 Bridge Design Options Considered but Eliminated from Further Discussion

Kings River Bridge design options 1, 2, and 5 have been dropped from further consideration by Tulare County's preference to replace the existing bridge. Each bridge design option that has been dropped from further consideration is described below:

Bridge Design Option 1: Construct New Span Adjacent to Existing Bridge. Rehabilitate the existing bridge and construct a new bridge parallel and north of the existing structure. The

existing bridge would remain 30 feet and 10 inches wide and require a design exception. Rehabilitation of the existing bridge would include correcting seismic deficiencies. A separate new bridge would be approximately 39 feet wide with two 12-foot lanes, eight-foot outside shoulders, and four-foot inside shoulders. The new bridge would be designed with 120-foot or 160-foot spans to align with the 40-foot spans of the existing bridge.

Bridge Design Option 2: Widen Existing Bridge and Construct New Span Adjacent to Existing Bridge. Rehabilitate and widen the existing bridge and construct a new bridge parallel and north of the existing structure. The existing bridge would be widened to provide standard shoulder widths. Rehabilitation of the existing bridge would include correcting seismic deficiencies. Both the rehabilitated bridge and the new bridge would be approximately 39 feet wide with two 12-foot lanes, eight-foot outside shoulders, and four-foot inside shoulders. The new bridge would be designed with 120-foot or 160-foot spans to align with the 40-foot spans of the existing bridge.

Bridge Design Option 5: Widen Existing Bridge. Rehabilitate and retrofit the existing bridge, then widen "in-kind" to accommodate standard shoulder widths for the existing bridge and then approximately an additional 47-foot width with two 12-foot lanes, eight-foot outside shoulders, and 10-foot inside shoulders. This structure would have deeper and stronger pier walls than the existing bridge.

Table 1-6. Comparison of Design Options Selected and Design Options Rejected by Segment: Mountain View Avenue/Avenue 416/ El Monte Way Road Widening Project (*rejected design options are shaded*)

Segment	Design Option	Cross Section	Description	Keep/Eliminate	Reason for Retaining or Eliminating
"A"- Bethel Avenue to Madsen Avenue	A-1	Fresno County	PPL[1]- All widening to the south with a transition to the north at Madsen Avenue	Retained for evaluation in technical studies. **EIR Alternatives 1 and 2.**	Conforms to the existing adopted PPL and is consistent with the General Plan. No residential displacements, one business/other displacement.
	A-2	Fresno County	All widening to the south, existing lanes become westbound lanes	Eliminated during preliminary design stage	Does not conform to adopted PPL and is inconsistent with the General Plan. One displacement.
	A-3	Fresno County	All widening to the north, existing lanes become eastbound lanes	Eliminated during preliminary design stage	Does not conform to adopted PPL and is inconsistent with the General Plan. Five displacements.
"B"- Madsen Avenue to Smith Avenue (Road 32)	B-1	Fresno County	PPL - All widening to the north, existing lanes become eastbound lanes	Retained for evaluation in technical studies. **EIR Alternatives 1 and 2.**	Conforms to the existing adopted PPL and is consistent with the General Plan. Displaces eight residences.
	B-2	Fresno County	All widening to the south. Existing lanes become westbound lanes	Eliminated during preliminary design stage	Does not conform to adopted PPL. Six displacements, greater utility impact than PPL.
	B-3	Fresno County	All widening to the north, existing lanes become eastbound lanes	Eliminated during preliminary design stage	Does not conform to adopted PPL. Seven displacements, utility impacts similar to PPL.

[1] PPL=Precise Plan Line

Table 1-6. Comparison of Design Options Selected and Design Options Rejected by Segment: Mountain View Avenue/Avenue 416/ El Monte Way Road Widening Project (rejected design options are shaded) ***continued***

Segment	Design Option	Cross Section	Description	Keep/Eliminate	Reason for Retaining or Eliminating
"C"- Smith Avenue (Road 32) to Road 52	C-1	Tulare County	All widening to the south, existing lanes become westbound lanes	Eliminated during preliminary design stage	Affects greatest number of residences, affects two commercial facilities, affects more minor irrigation structures, pipes and overhead utilities than other C Design Options.
	C-2	Tulare County	All widening to the north, existing lanes become eastbound lanes. Transition alignment to south to avoid Windsor School	Retained for evaluation in technical studies. **EIR Alternative 2**.	Uses more existing pavement, minimizes impacts to residences. Displaces five residences.
	C-3	Tulare County	Uniform widening to just west of Road 38, transition alignment to north prior to Kings River, transition alignment to south at Road 48 to avoid house on northeast corner and Windsor School	Retained for evaluation in technical studies. **EIR Alternative 1**	Meanders to minimize impacts to residential structures. Displaces three residences.
"D"- Road 52 to Road 64	D-1	Tulare County	All widening to north, existing lanes become eastbound lanes	Retained for evaluation in technical studies	Avoids Traver Canal (major irrigation facility), but affects packing house. Displaces one residence.
	D-2	Tulare County	All widening to north, existing lanes become eastbound lanes, transition alignment to the south between Road 62 and Road 64 (at the packing facility), realign Traver Canal to south as required by alignment shift	Retained for evaluation in technical studies. **EIR Alternative 2.**	Avoids packing facility by realigning 2,500 linear feet of Traver Canal. Displaces 1 residence.
	D-3	Tulare County	All widening to north, existing lanes become eastbound lanes, transition alignment to the south between Road 62 and Road 64 (at the produce packing facility), place Traver Canal in box culvert below eastbound lanes in south alignment section only	Retained for evaluation in technical studies	Avoids packing facility by 1,700 linear feet of Traver Canal in a box culvert. Box culvert option is not favored by Alta Irrigation District and is more costly. Displaces one residence.

Table 1-6. Comparison of Design Options Selected and Design Options Rejected by Segment: Mountain View Avenue/Avenue 416/ El Monte Way Road Widening Project (rejected design options are shaded) ***continued***

Segment	Design Option	Cross Section	Description	Keep/Eliminate	Reason for Retaining or Eliminating
"D"- Road 52 to Road 64	D-4	Tulare County	All widening to north, existing lanes become eastbound lanes, transition alignment to the south between Road 62 and Road 64 (at the produce packing facility), and match south widening for Design Option E-1	Retained for evaluation in technical studies	Avoids packing facility by placing 2,300 linear feet of Traver Canal in a box culvert; aligns with E-1. Box culvert option is not favored by Alta Irrigation District and is more costly. Displaces one residence.
	D-5	Tulare County	All widening to the north, existing lanes become eastbound lanes, transition alignment to the south from 1800 feet east of Road 56 through Road 64 (at the produce packing facility), realign Traver Canal to the south of the new roadway.	Retained for evaluation in technical studies. **EIR Alternative 1.**	Avoids packing facility and a residence by realigning 3,805 linear feet of the Traver Canal
"E"- Road 64 to Road 72	E-1	Tulare County, Dinuba at Road 72	All widening to the south, existing lanes become westbound lanes	Retained for evaluation in technical studies	Affects fewer residences than E-2 and makes good use of existing pavement but only matches with D-4. Displaces nine residences.
	E-2	Tulare County, Dinuba at Road 72	All widening to the north, existing lanes become eastbound lanes	Eliminated during preliminary design stage	Affects more residences than E-1 and E-3.
	E-3	Tulare County, Dinuba at Road 72	Meander centerline to minimize impacts to developed property	Retained for evaluation in technical studies. **EIR Alternative 1 and 2.**	Meanders to minimize impacts to residences. Impacts to irrigation facilities and utilities similar to E-1. Displaces seven residences and two business/other.

Table 1-6. Comparison of Design Options Selected and Design Options Rejected by Segment: Mountain View Avenue/Avenue 416/ El Monte Way Road Widening Project (*rejected design options are shaded*) *(Concluded)*

Segment	Design Option	Cross Section	Description	Keep/Eliminate	Reason for Retaining or Eliminating
"F"- Road 72 to Road 92	F-1	Dinuba	Hold north curb setback Alta to Perry	Eliminated during preliminary design stage	Has greater impacts to Rose Ann Vuich Park than other F Design Options
	F-2	Dinuba	Hold north curb setback Alta to Lincoln, transition to hold park curb and gutter, no change to park	Retained for evaluation in technical studies. **EIR Alternative 2.**	Minimizes impacts to Rose Ann Vuich Park. Displaces 36 residences and two churches, one National Register of Historic Places property (former Maya Theater).
	F-3	Dinuba	Hold north curb setback Alta to Vermont, transition to all widening to north	Retained for evaluation in technical studies. **EIR Alternative 1**	Avoids affects to National Register of Historic Places eligible property, the former Maya Theater, which has been converted to a church use, and avoids impacts to Christ Believers Church. Displaces 44 residences and seven business/other.
	F-4	Dinuba	Widening all to south, transition to meet Alta intersection and Perry intersection	Eliminated during preliminary design stage	Affects two additional houses.

1.6 Permits and Approvals Needed

The following permits and approvals will be required for project construction.

Table 1-7. Permits and Approvals Required

Agency	Permit/Approval	Status
United States Army Corps of Engineers	Clean Water Act Section 404	Application to be made during final design
United States Fish and Wildlife Service	Compliance with Section 7 of the Federal Endangered Species Act	Formal consultation with United States Fish and Wildlife Service by Caltrans/FHWA begins when the Biological Assessment is submitted (by FHWA) to United States Fish and Wildlife Service. A detailed Riparian and Wetland Mitigation Plan, based on the selected bridge design, must be developed prior to construction.
California Department of Fish and Game	Streambed Alteration Agreement for the Kings River	Application to be submitted during final design; permit required prior to construction
California State Lands Commission	Lease or Lease Amendment for Kings River Bridge	Application to be submitted during final design; permit required prior to construction
Central Valley Regional Water Quality Control Board	National Pollutant Discharge Elimination System Permit and Water Quality Certification Stormwater Pollution Prevention Plan	Application to be prepared by construction contractor with review and approval by lead agency (Tulare County)
Alta Irrigation District	Encroachment permits	Application to be submitted during final design; permit required prior to construction
Consolidated Irrigation District	Encroachment permits	Application to be submitted during final design; permit required prior to construction
Kings River Conservation District	Encroachment permits	Application to be submitted during final design; permit required prior to construction

CHAPTER 2-AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

As part of the scoping and environmental analysis conducted for the project, the following environmental resources were considered but no potential for adverse impacts to these resources was identified. Consequently, there is no further discussion regarding these resources in this document:

- Geology/Soils/Seismicity/Topography – The project area is in an area of minimal topography and low seismic activity. There is no evidence of expansion/contraction soils within the area.
- Energy – The proposed project would not increase energy uses. Level of Service would be improved, thus reducing energy associated with vehicle traffic.

2.1 Human Environment

2.1.1 Land Use

2.1.1.1 Existing and Future Land Uses

Technical Study Reference: The *Community Impact Assessment for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project* (2005).

Land uses on properties adjacent to the existing Mountain View Avenue/Avenue 416 between Bethel Road and Road 72 (Project Segments A-E) are predominantly agricultural and are devoted to irrigated agriculture (orchards, vineyards and row crops); farm-related industry (cold storage, packing houses, and green houses); agricultural infrastructure (irrigation canals, pumps and wells); and farm residences, barns, and equipment sheds.

Land uses adjacent to El Monte Way within the City of Dinuba from Road 72 to Road 92 (Segment F) are a mix of urban uses, including residential (single-family and apartments), commercial uses (auto dealership, convenience markets, service stations, grocery stores, drug stores), institutional uses (government and school district offices, churches), and a park.

Future Land Uses

Within the project study limits, local land use planning for Fresno and Tulare counties provides for agricultural uses in the unincorporated areas. Urban development is primarily restricted to infill areas within the city boundaries of Dinuba and unincorporated lands within the Urban Reserve Boundaries. Development within the incorporated city limits of Dinuba is governed by the 1997 City General Plan and the Municipal Zoning Ordinance. From 2002 to 2006, 317.5 acres have been annexed to the City of Dinuba and another 1,067 acres are currently in review for annexation (Figure 2-1). Of this annexed area, 473.2 acres are planned for residential development, the majority being medium-density and another 358 acres are planned for 100 residential units and a golf course (Meinert 2005 and 2006).

The area south of El Monte Way, between Road 72 and Alta Avenue, within the existing city limits, is planned for commercial and light industrial uses and is approximately 38 percent built out with a Wal-Mart store, auto dealerships, warehousing and food processing facilities. New businesses and expansion of existing businesses are planned to complete the development (Meinert 2005). Table 2-1 lists current projects that are planned in the City of Dinuba.

Table 2-1. Planned and Future Development

Name of Development	Jurisdiction	Size	Status
Viscaya I- Phase I-IV Viscaya II- Phase I-III	City of Dinuba	208 lots 84 lots	Construction complete
Citrus Heights	City of Dinuba	16 lots	Construction almost complete
Sugar Plum	City of Dinuba	65 lots	Construction complete
Parkside I Parkside II	City of Dinuba	129 lots 87 lots	Final map has been developed and approved Final map is currently being developed
Sierra View Estates	City of Dinuba	25 lots	Construction compete
Marquis Homes	City of Dinuba	41 lots	Final map has been developed and approved
Dinuba Heritage Estates	City of Dinuba	26 lots	Under construction
Pheasant Run	City of Dinuba	86 lot	Final map is currently being developed

Source: Meinert 2007

2.1.1.2 Consistency with State, Regional And Local Plans

Regional Transportation Plans

The Avenue 416 widening project is consistent with the priorities of the Tulare County Association of Governments for roadway improvements within Tulare County and is included in the 2004 Regional Transportation Plan. These improvements are shown on the long-range map (2004-2025) (Smalley 2004b).

Local Plans

Figures 2-2a through 2-2c illustrate current General Plan Land Use Designations, and Figures 2-3a through 2-3c illustrate zoning within 0.5 mile of Mountain View Avenue/Avenue 416/El Monte Way for Fresno County, Tulare County and the City of Dinuba respectively.

Fresno County

In Fresno County, the General Plan Land Use designation for properties within the project study area is agriculture (refer to Figure 2-2a). Table 2-2 lists Fresno County General Plan goals and policies relevant to the proposed project and provides a discussion of consistency with each policy. The ultimate determination of consistency with local general plan goals and policies lies with the Fresno County Board of Supervisors. The consistency determinations provided in this study are the consultant's preliminary determination. Consistency discussions apply to all build alternatives in Segments A and B.

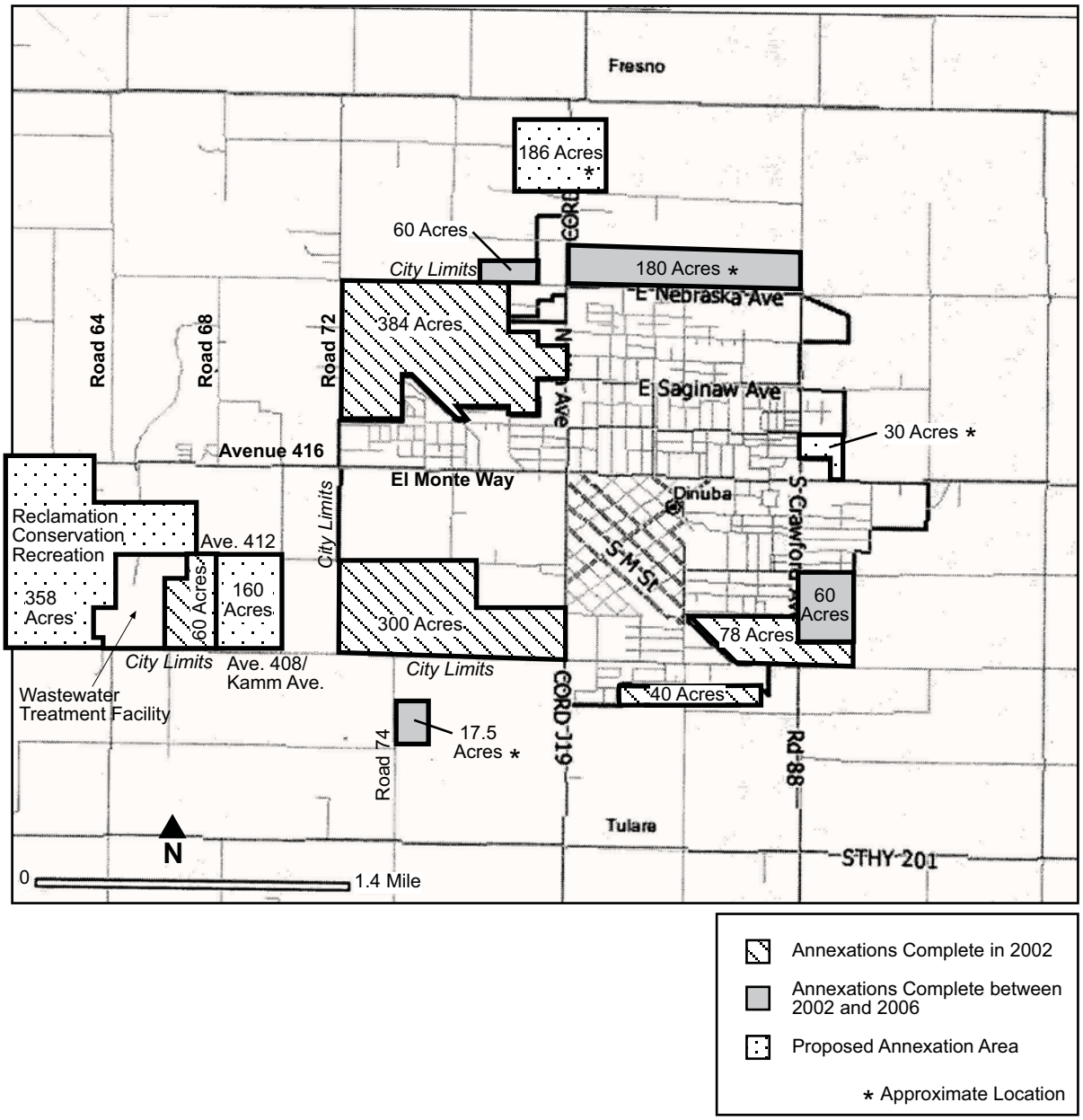


Figure 2-1. Annexations to the City of Dinuba
(Source: Neighborhood Knowledge California, City of Dinuba)

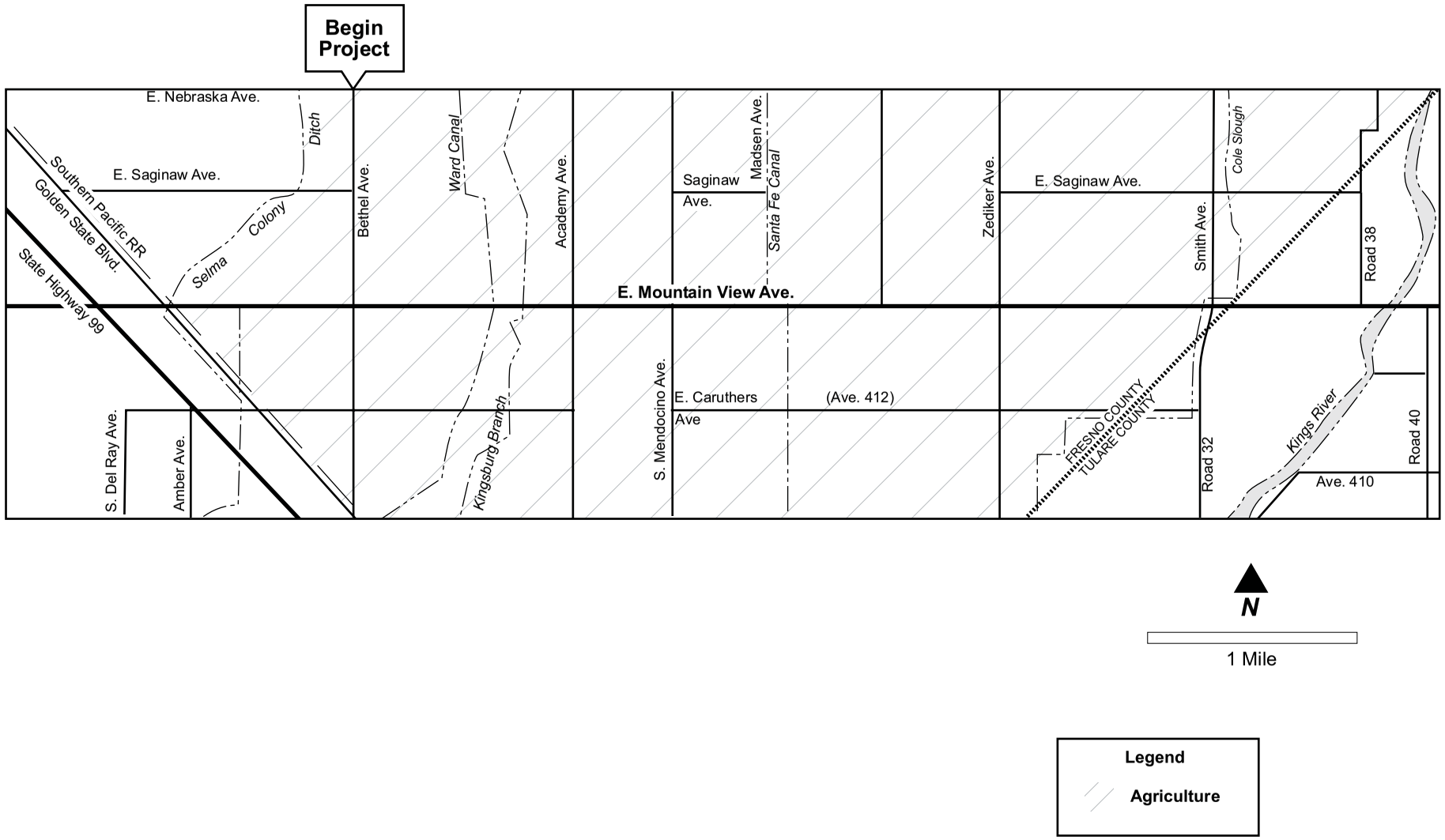


Figure 2-2a. General Plan Land Use Designations - Fresno County General Plan
(Sources: City of Dinuba and 7.5 Minute Reedley and Orange Cove USGS Quadrangles)

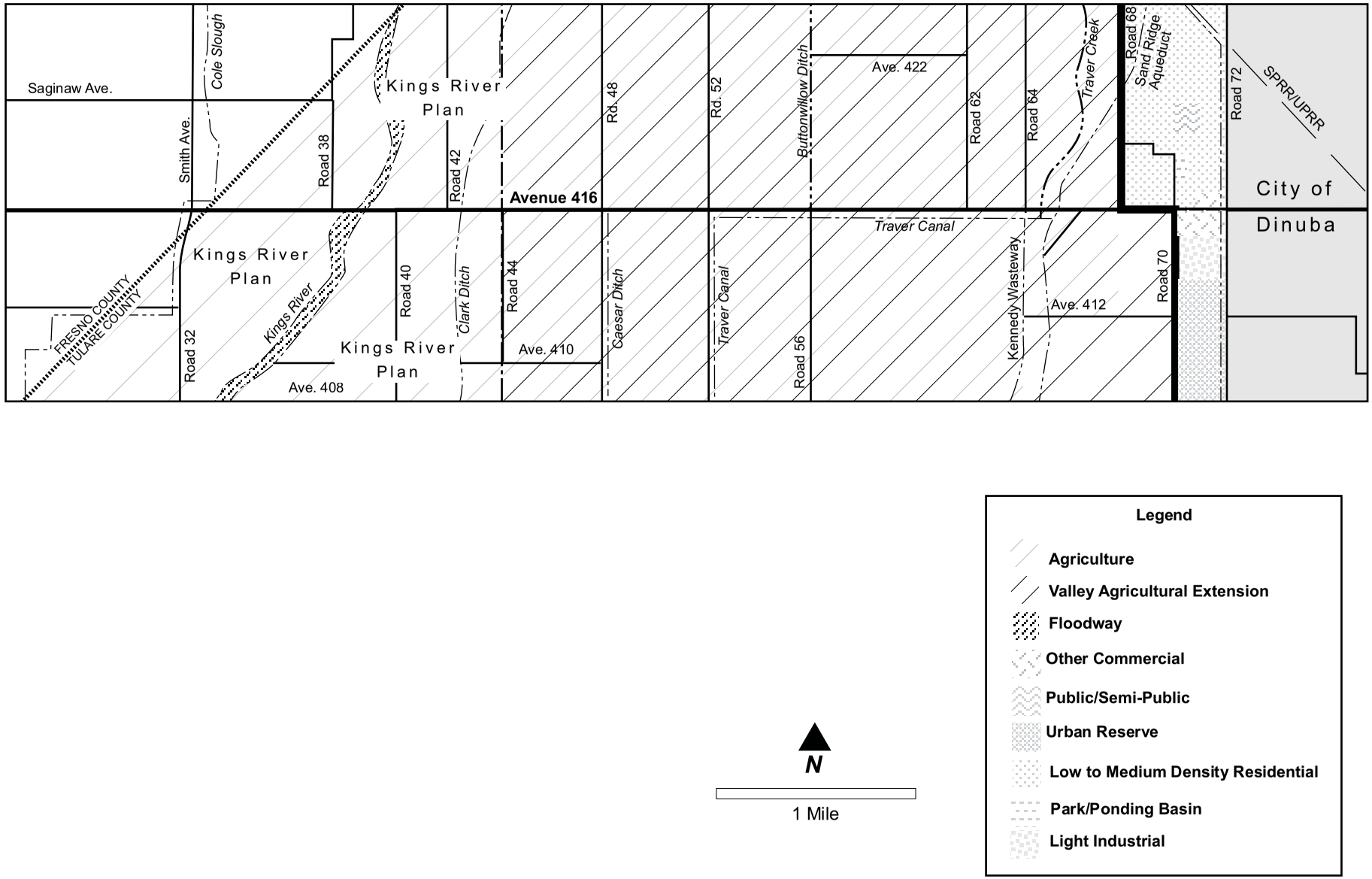


Figure 2-2b. General Plan Land Use Designations - Tulare County General Plan (Including: Kings River Plan)
(Sources: City of Dinuba and 7.5 Minute Reedley and Orange Cove USGS Quadrangles)

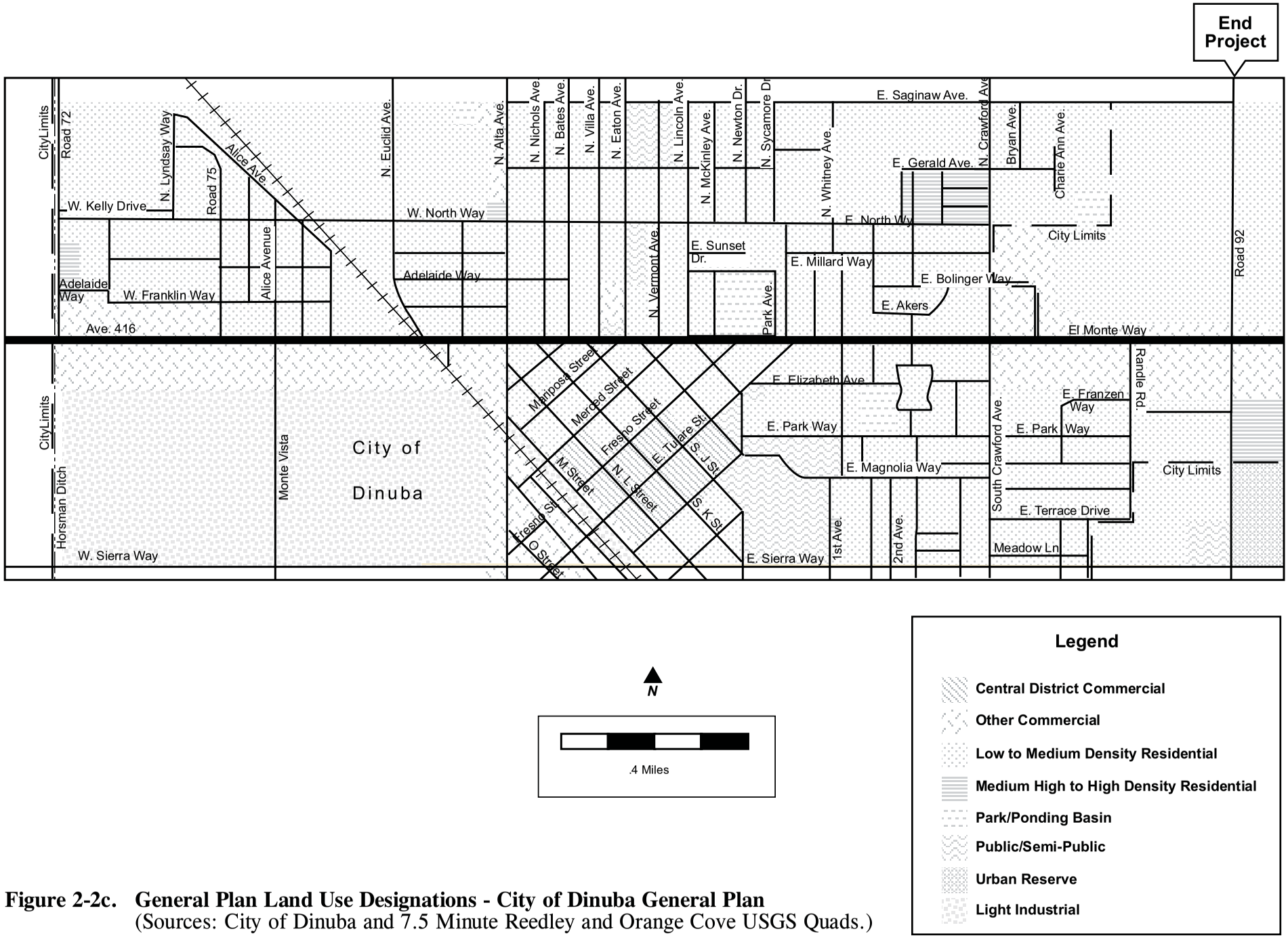


Figure 2-2c. General Plan Land Use Designations - City of Dinuba General Plan
(Sources: City of Dinuba and 7.5 Minute Reedley and Orange Cove USGS Quads.)

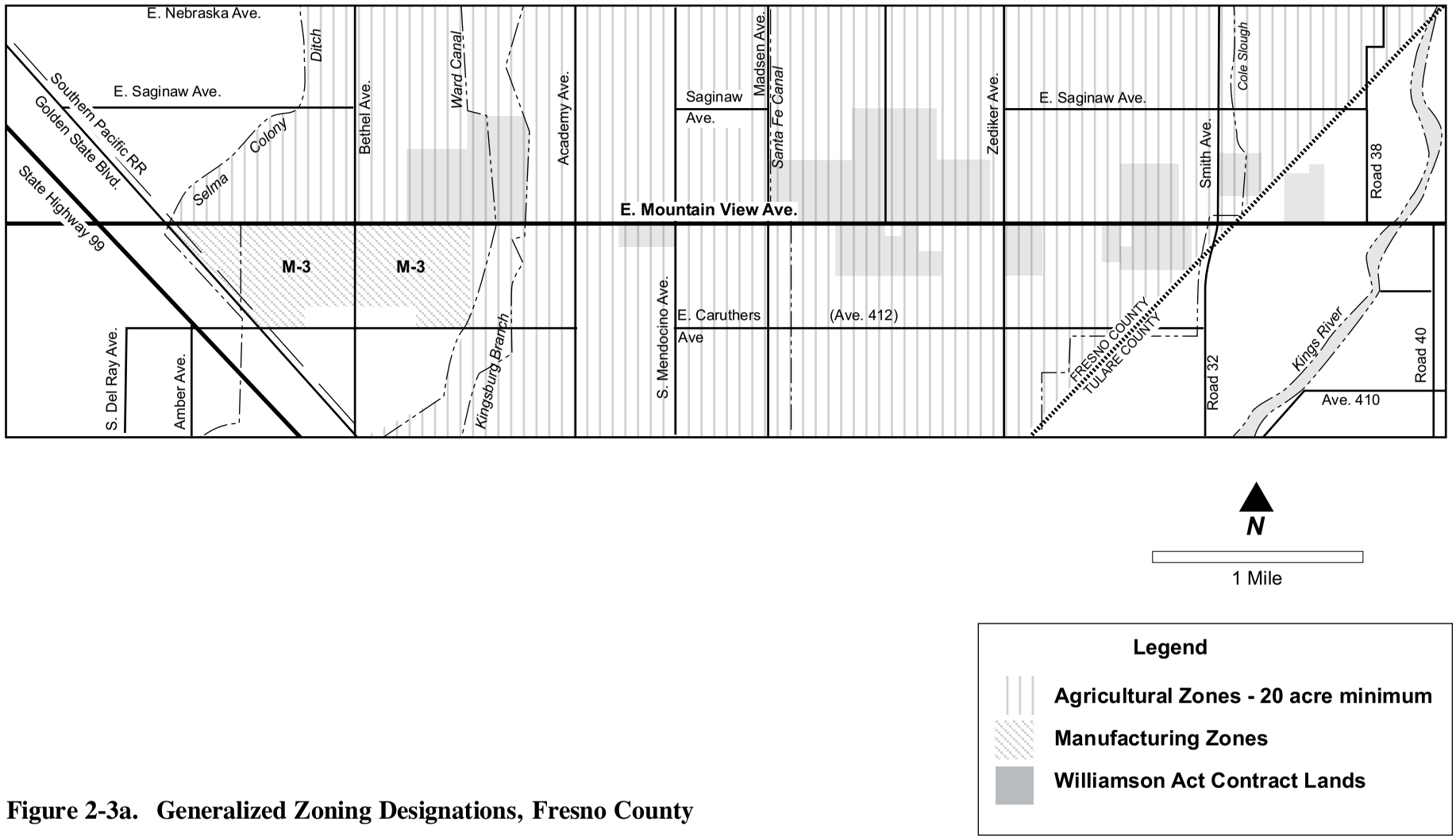


Figure 2-3a. Generalized Zoning Designations, Fresno County

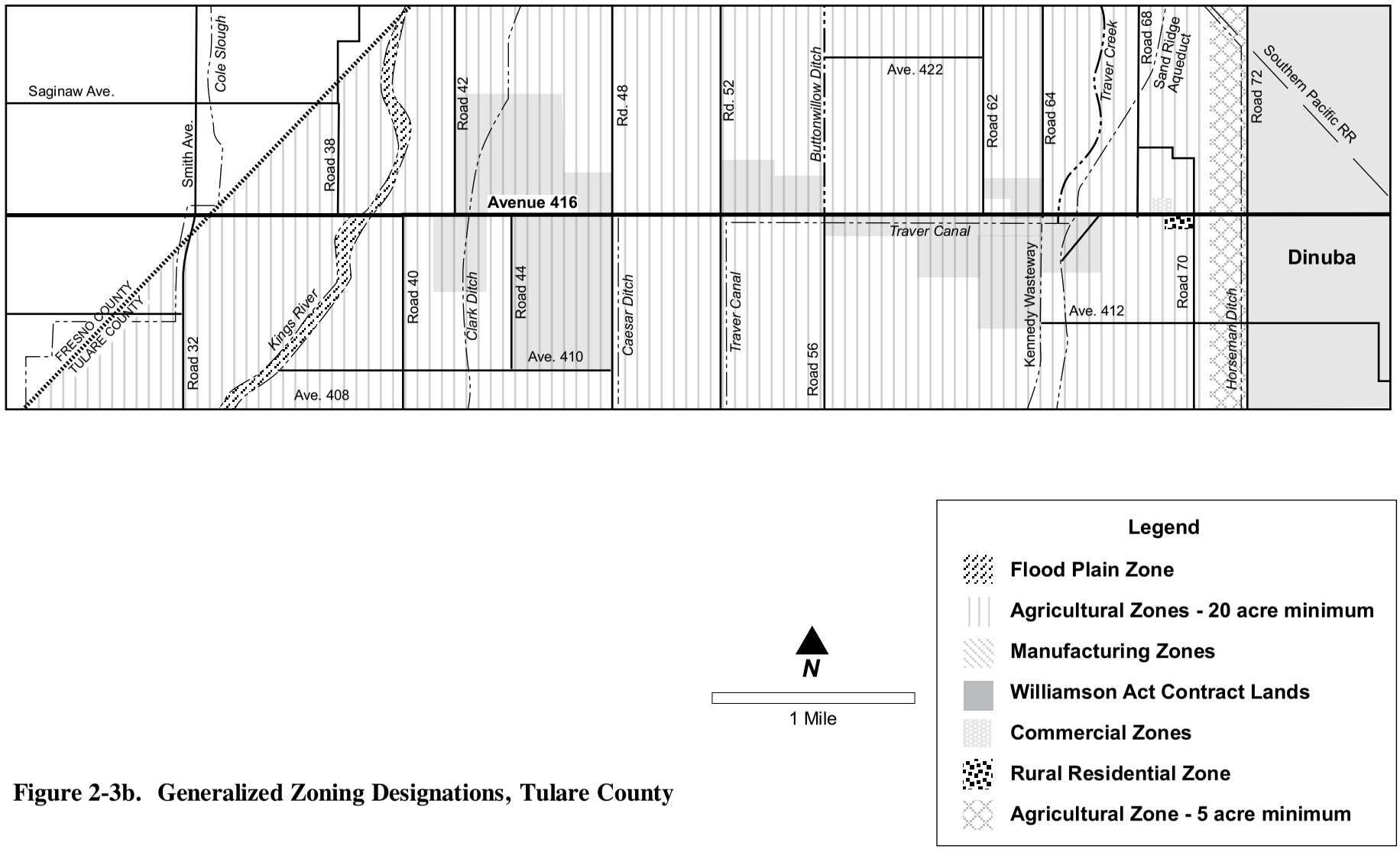


Figure 2-3b. Generalized Zoning Designations, Tulare County

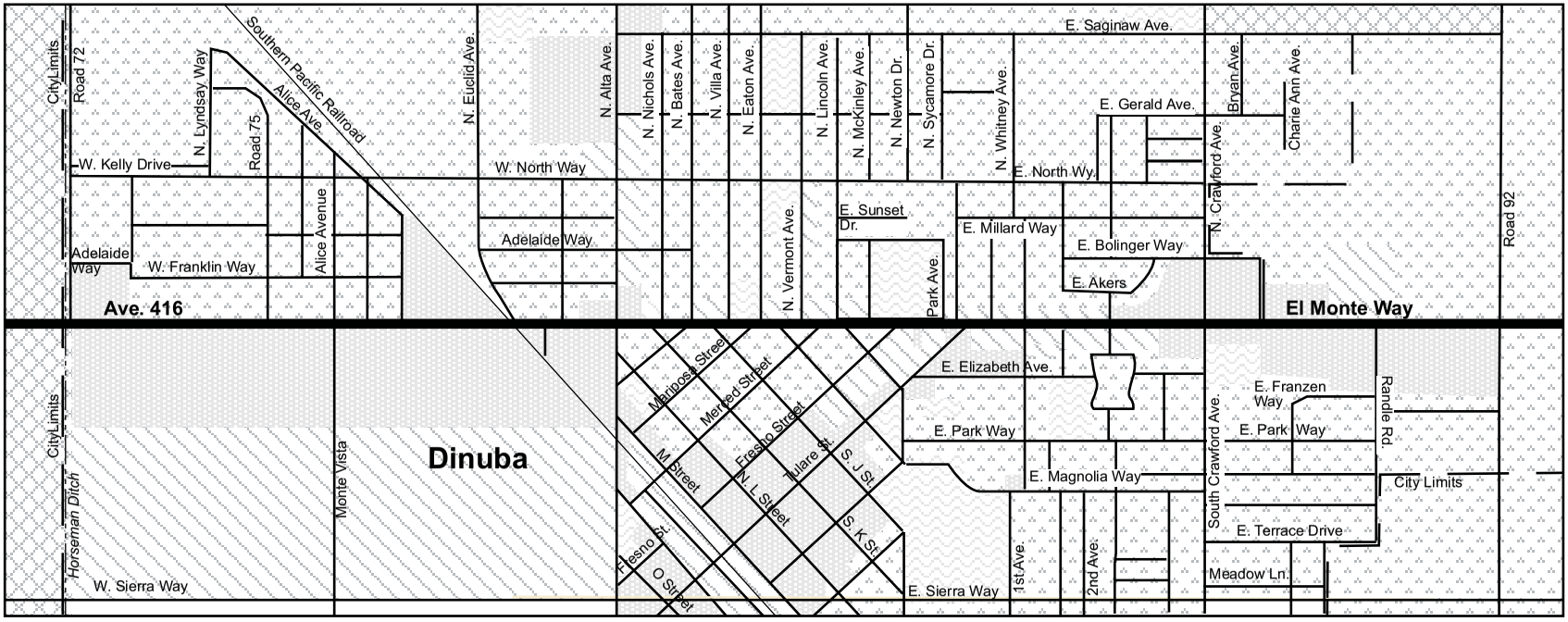


Figure 2-3c. Generalized Zoning Designations, City of Dinuba

Table 2-2. Fresno County General Plan Consistency

Fresno County General Plan Element Goals and Policies	Relevance to the Proposed Project	Consistency Discussion
Economic Development Element		
Policy ED-A.25: The County shall work to improve regional transportation systems to support increased hauling of raw product into the county and export of finished goods nationally and globally.	The existing Mountain View Avenue traverses an agricultural region, where agricultural activities include growing and processing of various agricultural products.	Consistent. The proposed project will improve the transportation network within the region.
Agriculture and Land Use Element		
Goal LU-A: To promote the long-term conservation of productive and potentially-productive agricultural lands and to accommodate agricultural support services and agriculturally related activities that support the viability of agriculture and further the County's economic development goals.	The existing Mountain View Avenue traverses an agricultural region. The proposed widening of the road will require acquisition of agricultural land fronting the road.	Partially Consistent. The proposed project substantially conforms to the PPL[1] established by the County in 1966. However, some right-of-way would be required outside of the PPL between Bethel Avenue and Academy. The road improvements will improve transportation of agricultural goods in the region.
Policy LU-A.1: The County shall maintain agriculturally designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available.		Consistent. The proposed project substantially conforms to the PPL established by the County in 1966. Lands within the PPL[1] were designated for future right-of-way.
Policy LU-A.12: In adopting land use policies, regulations and programs, the County shall seek to protect agricultural activities from encroachment of incompatible land uses.		

[1]PPL= Precise Plan Line

Tulare County

In the unincorporated portions of Tulare County, the *Rural Valley Lands Plan*, the *Tulare County Policy Plan Urban Boundaries Policies*, and the *Urban Boundaries Element* govern land uses. The *Rural Valley Lands Plan* sets minimum acreage standards for agricultural parcels and guides development in rural areas. The *Urban Boundaries Policies* define the ultimate Urban Area Boundary around incorporated cities. The Dinuba Urban Area Boundary defines the area under County jurisdiction within which Dinuba's concerns are to be given serious consideration as part of the County's land use review process. The *Urban Boundaries Element* defines a 20-year planning area around incorporated cities in order to guide urban growth and preserve productive agricultural lands. The portion of the project immediately east of the Kings River also falls within the planning areas for the *Kings River Plan*, a part of the Tulare County General Plan.

Generalized land use designations from the Tulare County General Plan are shown in Figure 2-2b. Land use designations provide for agricultural uses throughout the portion of the study area contained in Tulare County.

Table 2-3 lists goals and policies contained in the Tulare County General Plan Land Use and Conservation Element and the *Rural Valley Lands Plan* that are relevant to the proposed project, and provides a discussion of consistency with each policy. The ultimate determination of consistency with local general plan goals and policies lies with the Tulare County Board of Supervisors. The consistency determinations provided in this study are the consultant's preliminary determination. Consistency discussions apply to all build alternatives in Segments C through E.

Table 2-3. Tulare County Planning Consistency

Tulare County Land Use Plans: Goals and Policies	Relevance to Project	Consistency Discussion
Land Use and Conservation Element and Rural Valley Lands Plan		
113.027 Highways should be planned to eliminate or at least minimize the breakdown of agricultural and urban land patterns. (Land Use and Circulation Element [LUCI]:1-8)	Project would require acquisition of right-of-way from agricultural lands.	Consistent. The project consists of widening of an existing road, and would not split any parcels. Design alternatives are being considered to minimize impacts to important resources such as farmland.
113.047 To sustain the viability of Tulare County agriculture by restraining division and use of land, this is harmful to continued agricultural use of non-replaceable land resources. (*Rural Valley Lands Plan*)		
113.048 Discourage the conversion or division of agricultural lands to nonagricultural uses and parcel sizes. (*Rural Valley Lands Plan*)		
113.028 Freeway alignments should reflect study of any possible agricultural and urban economic impact as well as other economic factors and benefits. This study approach should assure that important considerations beyond these dealing strictly with traffic data, construction cost and highway user benefits will not be ignored. Highways located within urban and rural areas should be accommodated in a manner that seeks a balanced relationship between the function of the highway and its locational effects on established patterns of urban and rural activity. (LUCI: I-8)	The project would have impacts on both urban and agricultural areas.	Consistent. The preparation of this technical study provides for consistency with this policy. It identifies impacts to urban and agricultural land uses and examines alternatives to provide options that would minimize impacts where possible. Other technical studies are being prepared as part of the project design process, in order to address a variety of resource impacts associated with the project.

Table 2-3. Tulare County Planning Consistency (*concluded*)

Tulare County Land Use Plans: Goals and Policies	Relevance to Project	Consistency Discussion
Land Use and Conservation Element and Rural Valley Lands Plan		
213.204 In addition to providing sewer, water and drainage facilities, other physical improvements warrant the attention of city and county in establishing uniform standards. Paving, curb and gutter, lighting, fire hydrant and sidewalk standards are extremely important as well as standards of right-of-way and road width. One approach offering promise is to have the county apply standards to fringe areas in keeping with the standards of each city. It is essential that standards be kept within reason, consistent with the function of the facility or improvement involved. (LUCI: II-10)	The proposed project is located in rural and urban areas, and passes through fringe areas.	Consistent. The County of Tulare and the City of Dinuba are cooperating in the design of the project.

City of Dinuba

The City of Dinuba General Plan was updated in 1997. The General Plan has a plan horizon of 2020 and projects the population at that time will be approximately 27,000. The General Plan provides for a mix of residential and commercial uses within the project study area. Generalized land use designations from the City of Dinuba General Plan are shown in Figure 2-2c.

Table 2-4, lists objectives contained in the City of Dinuba General Plan that are relevant to the proposed project, and provides a discussion of consistency with each objective. The ultimate determination of consistency with local general plan objectives lies with the City Council. The consistency determinations provided in this study are the consultant's preliminary determination. Consistency discussions apply to all build alternatives in Segment F.

In addition to adopted goals and objectives, the City of Dinuba used a number of planning principles to guide its General Plan Update. Included in these principles were community design principles, which spoke to creating gateways to the city, improving circulation through the town, and improving access to some residential neighborhoods (existing street pattern limits access in some areas). The proposed project would be partially consistent with these planning principles since it would improve circulation and address some of the neighborhood access issues by improving intersections along El Monte Way. The project would not, however, provide landscaping within medians or for those undevelopable remainder parcels adjacent to the road that will be left vacant by relocations of structures. Without landscaping in these areas, the visual environment and community aesthetics will be degraded. Visual resource impacts are addressed in later sections of this document. A detailed evaluation of project effects on aesthetics is provided in the *Visual Resource Analysis for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project* (PAR Environmental Services, Inc. 2004).

Table 2-4. City of Dinuba General Plan Consistency

City of Dinuba General Plan Objectives	Relevance to Project	Consistency Discussion
Circulation Element		
4.1 Roadway Classification Standards Objective A. Develop a circulation network of local roads, collectors, arterials and major arterials that will meet projected traffic needs.	The proposed project is a road improvement project.	Consistent. The traffic study prepared for the project shows that future LOS[1] will not meet General Plan standards (LOS C) under future conditions. The proposed project will provide for improved Level of Service.
Standard No. 7. Major arterials (Alta and El Monte) shall be developed with a minimum right-of-way of 96 feet, to include four travel lanes, parking, and a two-way left center turn lane or raised median.	El Monte Way is designated a major arterial.	Partially Consistent. Within the City, the width of right-of-way would vary between 96 feet and 100 feet and would allow for center median or a shared center turn lane. The project does not include landscape improvements, therefore mitigation measures requiring a landscape plan for the Dinuba portions of the project should be implemented in order to maintain consistency.
Standard No. 28. In order to promote safe and efficient traffic flow throughout the City, traffic signals shall be spaced no closer than 0.25 mile on arterials except in unusual circumstances.	The proposed project will construct additional signalized intersections along El Monte Way.	Consistent. Even though the spacing of signals on El Monte Way will be closer than the 0.25-mile standard, the closer spacing will meet the need to create a pedestrian-friendly street that allows ease of access between areas on the north and south sides of El Monte Way.
4.6 Bicycle Facilities Standards Objective A. Encourage the use of bicycles as a viable means of transportation.	The current width and configuration of El Monte Way does not provide for continuous sidewalk or width for bike lanes.	Consistent. The proposed project will include continuous sidewalks with adequate width to meet Americans with Disabilities Act standards. The project will also provide for adequate shoulder area to accommodate bike lanes in some sections of El Monte Way.
4.7 Pedestrian Facilities Objective. A. Provide a safe walking environment for pedestrians.		
Standard No. 2. Sidewalks shall be required in all areas of the community to accommodate pedestrian traffic, especially along routes with high pedestrian traffic such as schools, parks, and the downtown area.		
7.1 Gateways/Streetscape Design Standards Objective A. Improve the appearance of city streets and reduce visual clutter along the City's main thoroughfares/corridors.	The proposed project provides improvement to El Monte Way, a main thorough fare.	Partially Consistent. The proposed project would provide for medians on El Monte Way and possible under grounding of utilities. Opportunities for future streetscape improvements would result from project, however, landscaping is not a part of the project.

[1]LOS=Level of Service

2.1.1.3 Parks and Recreational Facilities

Affected Environment

Rose Ann Vuich Park lies on the northeast corner of El Monte Way and McKinley Avenue within the project boundaries. This park is approximately 9.2 acres in size and contains group picnic areas, restrooms, horseshoe pits, a covered stage area, City Parks division offices, a utility area, tot lot play area, a playground, and a parking lot on the north side of the park. A rock monument, dedicated to Rose Ann Vuich, sits at the southwest corner of the park, and landscaping in the park includes numerous mature trees. The park is a focal point for community celebrations and is host to community events such as the Raisin Day Festival, Cinco de Mayo, and other seasonal celebrations.

Effects on Parks and Recreation Facilities

Both Build Alternatives. Both build alternatives affect park land in the City of Dinuba. Right-of-way acquisition will be required from the 9.2-acre Rose Ann Vuich Park. The impacts of each alternative on Rose Ann Vuich Park are described separately below and shown in Figures 2-4 and 2-6. Both alternatives would benefit park users by providing pedestrian facilities and improving pedestrian access to the park. Acquisition of public park land for transportation purposes requires evaluation of the project under Section 4(f) of the Federal Transportation Act, provided in Appendix B.

Both build alternatives would affect a triangular-shaped parcel (Assessor's parcel number 17083004) on the south side of El Monte Way at Merced Avenue (shown as Parcel Remnant Merced West in Figures 2-5 and 2-7), which is not an official city park. This 3,920-square-foot area is City property that is landscaped with lawn and trees and maintained by the City Parks and Recreation Department.

Alternative 1. Alternative 1 will require approximately 34,990 square feet from Rose Ann Vuich Park, a loss of 8.7 percent of the park area, and would remove a number of mature trees and other landscaping. The depth of park frontage needed would be a strip of land approximately 60 feet deep (Figure 2-4). This right-of-way acquisition would have an adverse effect on Rose Ann Vuich Park. Compensation for loss of parkland and landscape improvements is required to minimize the environmental effects of the project.

The impact of Alternative 1 on the triangular-shaped parcel (Assessor's parcel number 17083004) would amount to approximately 1,380 square feet. The approximately 2,540 square feet remaining of the parcel could continue to function as a smaller open space area with the replacement of landscaping. This alternative would eliminate three to four mature street trees growing along the Merced Street frontage of the parcel.

Alternative 2. This alternative will require approximately 3,799 square feet from Rose Ann Vuich Park, a loss of 0.9 percent of the park area. The depth of park frontage needed would be a strip of land approximately 10 feet deep (Figure 2-6). Loss of public parkland and landscape improvements is considered an adverse effect.

Alternative 2 widens to the south side of El Monte Way and would therefore take the majority of the triangular-shaped parcel (Assessor's parcel number 17083004). The city would lose the use of this open space area.

Avoidance, Minimization and/or Mitigation Measures

To compensate for loss of parkland at Rose Ann Vuich Park and loss of open space area at Merced Avenue/El Monte Way, the following measures are necessary to substantially reduce the environmental effects of the project on parks and recreation facilities:

Alternative 1: Project proponents will be responsible for replacing approximately 34,990 square feet of parkland acquired from Rose Ann Vuich Park and 1,380 square feet acquired from the landscaped open space area[5] at Mariposa and J Street. The actual replacement requirement should be determined upon final project design since the amount of right-of-way needed may change.

1. Proponents shall incorporate into Rose Ann Vuich Park the remainder of two adjacent parcels along El Monte Way to the east of the park, which would be acquired for road-widening purposes;

2. Proponents shall prepare a landscape plan, subject to the review and approval of the Director, of the City of Dinuba Parks and Recreation Department that, at a minimum, provides new landscaping in the new park addition area and replaces the landscape along the entire El Monte Way park frontage with similar plantings as those that have been removed. Size of replacement trees shall be twenty-four-inch-box size for trees six inches or larger in diameter at breast height (diameter measured 4.5 feet above ground), and 15-gallon size container for trees smaller than six inches diameter at breast height.

   A remainder parcel and abandoned portion of Mariposa Avenue, at Mariposa Avenue and El Monte Way, shall be used to construct a park with appropriate landscaping and amenities (e.g., picnic areas and/or limited play equipment) subject to the approval of the City of Dinuba Parks and Recreation Director. The open space parcel at Merced and El Monte Way shall be re-landscaped to restore shade trees, sidewalk and lawn.

3. The balance of the parkland shall be compensated for by purchase of additional parkland at other park locations within the City of Dinuba or improvement of park facilities, either at Rose Ann Vuich Park or other parks within the city. The amount of compensation shall be determined during the appraisal process.

[5] This parcel is landscaped and maintained by the City of Dinuba and thus is considered parkland.

Figure 2-4. Alternative 1 : Impacts to Rose Ann Vuich Park and Remnant Parcels Created Adjacent to the Park

Figure 2-5. Alternative 1 : Remnant Parcels Potentially Available for Park and Open Space Use

Figure 2-6. Alternative 2 : Impacts to Rose Ann Vuich Park

Figure 2-7. Alternative 2 : Remnant Parcels Potentially Available for Park and Open Space Use

Alternative 2: Project proponents will be responsible for replacing approximately 3,799 square feet of parkland acquired from Rose Ann Vuich Park and 3,920 square feet acquired from the landscaped open space area at Mariposa and J Street. The actual replacement requirement should be determined upon final project design since the amount of right-of-way needed may change.

1. Proponents shall prepare a landscape plan, subject to the review and approval of the City of Dinuba Parks and Recreation Director that, at a minimum, replaces the landscape along the entire El Monte Way park frontage with similar plantings as those that have been removed. Size of replacement trees shall be twenty-four-inch-box size for trees six inches or larger in diameter, measured 4.5 feet above ground, and 15-gallon-size container for trees smaller than six inches diameter.

2. The remainder parcel and abandoned portion of Mariposa Avenue, at its intersection with El Monte Way, shall be used to construct open space area with landscaping and amenities (e.g., picnic areas and/or limited play equipment) subject to review and approval by the City of Dinuba Parks and Recreation Director.

2.1.2 Growth

Technical Study Reference: The *Community Impact Assessment for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project* (PAR Environmental Services, Inc. 2005).

2.1.2.1 Regulatory Setting

The Council on Environmental Quality regulations, which implement the National Environmental Policy Act of 1969, requires evaluation of the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The Council of Environmental Quality regulations, 40 Code of Federal Regulations 1508.8, refer to these consequences as secondary impacts. Secondary impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act also requires the analysis of a project's potential to induce growth. The California Environmental Quality Act guidelines, Section 15126.2(d), require that environmental documents "…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"

2.1.2.2 Affected Environment

The relationship between transportation, economic growth, and land development is a product of multiple social, economic, and geographic factors. These factors are presented in greater detail in the Community Impact Assessment prepared for this project, and the previous discussion in the section entitled "Existing and Future Land Use." It should be noted that a project's potential to induce growth does not automatically result in growth. Growth can only occur through capital investment in new economic opportunities by the public or private sectors. Development is a result of economic investment in an area. The potential for the project to encourage economic investment is addressed below.

2.1.2.3 Impacts on Growth

No-Build Alternative. Under the No-Build Alternative, economic investment and growth planned under the Dinuba General Plan could potentially be slowed or deferred due to decreasing transportation capacity.

Both Build Alternatives. Mountain View Avenue/Avenue 416/El Monte Way provides the major east-west connection between Dinuba and other northern Tulare County communities with State Route 99. The proposed project would neither introduce a new transportation facility nor increase nor provide access to new parts of the study area. The project will improve east-west circulation in the region. Since the proposed project would increase capacity and improve levels of service, it would have the potential to help support future economic or population growth. Planned growth within the project area is primarily restricted to the incorporated limits of the City of Dinuba. Fresno County and Tulare County have general plan policies that strongly discourage conversion of agricultural land to non-agricultural uses and encourage the maintenance of agricultural activities on agricultural lands (see Existing and Future Land Use above). The project would be considered economically beneficial; by improving transportation in the region it would support capital investment in new economic opportunities by the public or private sectors. Growth pressure would be greatest in the City of Dinuba; however, it currently exists within its incorporated limits to accommodate planned growth to 2020. The project is needed in order to accommodate the development and growth targeted in the City's General Plan. The population growth projected in the City's General Plan at the end of the Year 2020 plan horizon is a 64 percent increase from the Year 2000 population of 16,800 to a population of 27,000.

There are several areas planned for development within the existing Dinuba city limits. These include a 280-acre area located south of El Monte Way, between Road 72 and Alta Avenue that is planned for commercial and light industrial uses and several recently annexed areas that are planned for residential development.

The commercial and industrial area extends from El Monte Way to Sierra Way and is approximately 38 percent built out with auto dealerships, warehousing and food processing facilities. Plans for development by new businesses and expansion of existing businesses would

affect another 100 acres of the commercial/industrial area. Since 2005 development has included a shopping center development on 28 acres.

Lands annexed to the City between 2002 and 2006 total 317.5 acres. With the exception of five acres, portions of these areas are already or planned for residential development. New residential development planned for the annexation areas would occur over the next 10 years and would eventually accommodate approximately 3,500 residential units with approximately 25 percent multi-family units (Meinert 2002). The City also has recently initiated the annexation process for a 358-acre area for water reclamation, recreation (golf course) and approximately 100 residential units in the area between the waste water treatment plant and Avenue 416/Traver Canal (see Figure 2-1). In 2007, there are 935 lots in approved final subdivision maps, 1,451 lots in approved tentative maps and 698 lots in preliminary review. In addition, from December 2005 to August 2006, 110-single-family residential building permits were issued by the city (Meinert 2007).

Improvement of El Monte Way is cited in the City of Dinuba General Plan Circulation Element (1997) as a needed project in order to maintain the target Level of Service C through the planning Year 2020. The City's 1997 Circulation Element identifies Level of Service C as the desired Level of Service for all streets, to be maintained for 20 years after their construction. According to the Transportation Technical Report prepared for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project (Y&C Transportation 2002, Table 30), without the project in place, the Level of Service at five signalized intersections in Dinuba will drop from C to D between 2015 and 2020.

2.1.2.4 Avoidance, Minimization, and/or Mitigation Measures

No further requirements are needed.

2.1.3 Farmlands

Technical Study Reference: The *Community Impact Assessment for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project* (PAR Environmental Services, Inc. 2004).

2.1.3.1 Regulatory Setting

The National Environmental Policy Act and the Farmland Protection Policy Act (U.S.C. 4201-4209; and its regulations, 7 Code of Federal Regulations Ch. VI Part 658) require federal agencies, such as FHWA, to coordinate with the Natural Resources Conservation Service if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the Farmland Protection Policy Act, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

The California Environmental Quality Act requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property

taxes to deter the early conversion of agricultural and open space lands to other uses. Eligible lands for Williamson Act contract are lands defined by the state as Prime Farmland, other than Prime Farmland, and open space land. Lands in an area, which is designated by the county or city as an agricultural preserve, can be placed under contract as well (Caltrans 1997). Farmland security zone contracts are extended versions of Williamson Act contracts. The contract period for farmland security zones is 20 years. Farmland security zone contracts can be placed on Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance (California Department of Conservation 2002).

2.1.3.2 Affected Environment

Agriculture is the main industry in Fresno and Tulare counties as exhibited by their respective rankings of first and second in the state in total value of agricultural products as reported in the 1999 County Agricultural Commissioner's Data (Great Valley Center 2001). According to the 1997 Census of Agriculture conducted by the California Department of Food and Agriculture, 49 percent of the land area in Fresno County is in farms and 42 percent of the land area in Tulare County is in farms (Table 2-5). The unincorporated portions of the project study area are largely devoted to intensive agricultural use including orchards and vineyards with some seasonal irrigated row crops. Agricultural infrastructure consisting of irrigation pumps and canals are located within the study area.

Table 2-5. Permanent Impacts to Farmlands by Alternative

Build Alternative	Acres of Important Farmland to be Converted by Project[1]			Percentage of Important Farmland in Fresno & Tulare Counties	Farmland Conversion Impact Rating	Land Under Williamson Act Contract
	Prime & Unique	Statewide & Local	Total Important Farmland			
Alternative 1	55.2 acres	27.1 acres	82.3 acres	0.00012%	159	39 acres
Alternative 2	54 acres	26.5 acres	80.5 acres	0.00011%	158	35 acres

Source: Form NRCS-CPA-106 (Farmland Conversion Impact Rating for Corridor-Type Projects)

[1]Numbers in acres were obtained from the Farmland Impact Rating Form, completed by Natural Resources Conservation Service in May 2005, see Appendix M for this form.

Properties that are under Williamson Act and Farmland Security Zone contract are located in the study area. Figures 2-3a through 2-3c show the Williamson Act and/Farmland Security Zone contract farms in the proposed project area. Section 2.1.1, Tables 2-2 and 2-3, describe planning policies related to farmlands.

2.1.3.3 Impacts to Farmlands

Important Farmlands

The United States Department of Agriculture's Farmland Conversion Impact Rating Form National Resources Conservation Service-CPA-106 was used to determine the impact to farmlands (Appendix M). The form assigns the affected farmland a combined score of up to 260 points, composed of up to 100 points for relative value of the affected farmland and up to 160 points for the site (or alternative) assessment. With this score, the effects of each alternative on farmland are quantified. Sites receiving a total score of less than 160 points are given minimal consideration for protection, and no additional sites need be evaluated. The Farmland Conversion Impact Rating Form need not be resubmitted to the Natural Resources Conservation Service for further review when the total score is less than 160 points.

A Farmland Conversion Impact Rating Form was submitted to the Tulare County Natural Resources Conservation Service on November 15, 2004. A summary of the completed form is provided in Table 2-5, and the form and explanations for Site Assessment Criteria are provided in Appendix M.

Williamson Act Contract Lands

Under either alternative, the project's effect on lands under Williamson Act contract would not exceed 100 acres of contracted lands but would require amendment of contracts on affected parcels (see Table 2-5). The Department of Conservation, Land Conservation Program has been notified of the impacts to Williamson Act contracted parcels. The Williamson Act parcels affected are listed in Appendix M.

Impacts to Farmlands and Farming Operations

Both build alternatives would result in effects on farmlands; however, no adverse effects would occur and some effects would be beneficial. Table 2-5 summarizes the permanent impacts to agricultural lands that would result from the project.

Project effects on farmlands consist of acquisition of property on one or both sides of the roadway with either alternative. There is little variation between alternatives since farmlands are located on both sides of the road. No agricultural parcels would be bisected by the project, creating remnant parcels that would be difficult or infeasible to farm.

Both build alternatives include realignment of irrigation infrastructure including drainage and irrigation canals, pumps and pipes, access roads, bridges, fences and gates located in the new right-of-way and would be moved and relocated in most instances. The primary difference between the two alternatives occurs in Segments C and D where major irrigation facilities would be affected. Minor irrigation facilities are located in Segment C and a major irrigation canal, The Traver Canal, is located in Segment D.

The Traver Canal, which is owned and operated by the Alta Irrigation District, parallels the south side of Avenue 416 for a distance of 1.5 miles, from Road 52 to the point where it crosses under

the road, 350 feet east of Road 64. An agricultural produce processing facility lies on the north side of Avenue 416 just west of Road 64; to avoid this facility, the widening must be placed to the south side of Avenue 416. The proposed road widening would require relocation of a portion of the canal. The two build alternatives would have the following impacts on agricultural infrastructure:

Alternative 1

In Segment C, Alternative 1 would require extension of approximately 360 linear feet of box culvert, construction of a new gate structure and 120 linear feet of new piping realignment of 600 linear feet of slough.

In Segment D, this alternative would avoid the processing facility and a residence that is located to the west of the packing facility, but would require acquisition of approximately 8.4 acres of adjacent farmland by Alta Irrigation District for the canal relocation and would displace four rows of trees in the orchard on the south side of the canal. Alternative 1 would require realignment of 3,805 linear feet of the canal and require placement of two new access bridges to the property to the south.

Alternative 2

In Segment C, Alternative 2 would require extension of approximately 280 linear feet of box culvert, construction of a new major gate structure, and realignment of approximately 600 linear feet of slough.

In Segment D, this alternative avoids the processing facility, but not the residence to the west of the packing facility. Approximately 6.7 acres of farmland would need to be acquired by Alta Irrigation District for the canal relocation, and four rows of trees in the orchard to the south would be displaced. Alternative 2 would require realignment of 2,500 linear feet of the Traver Canal and require construction of two new access bridges for the property to the south.

2.1.3.4 Avoidance, Minimization and/or Mitigation Measures

Minimization of Impacts to Farm Operations

1. Remnant properties along the new right of way not used for construction would be sold back to adjacent farm owners.

2. Access to adjacent farm fields shall be provided for farm equipment.

3. The project shall be designed and constructed to minimize impacts to farm operations.

2.1.4 Community Impacts

Technical Study Reference: The following section summarizes the finding of the *Community Impact Assessment for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project* (2006a); refer to that report for detailed data regarding demographics and community impacts.

2.1.4.1 Regulatory Setting

The National Environmental Policy Act established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 U.S.C. 4331(b)(2)]. The Federal Highway Administration in its implementation of the National Environmental Policy Act [23 U.S.C. 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion and the availability of public facilities and services.

Under the California Environmental Quality Act, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

2.1.4.2 Community Character and Cohesion

The existing properties adjacent to Mountain View Avenue/Avenue 416 between Bethel Road and Road 72 (Project Segments A-E) are predominately agricultural. Properties adjacent to El Monte Way in City Dinuba from Road 72 to Road 92 (Project Segment F) have mixed urban uses, including residential, commercial, institutional and recreational.

Contributing factors that make up community character and cohesiveness include:

- size of household;
- ethnic homogeneity;
- population density;
- home ownership;
- access to community services and institutions,
- ease of movement within the community.

Information on community character and cohesion was obtained from field observations, interviews with local agency personnel and the 2000 United States Census. To describe the demographic characteristics of the study area and the area within the project corridor, demographic information from the 2000 United States Census was examined at the County,

Census Tract, and Census Tract Block Group[6] levels. Census geography areas for the project are shown in Figures 2-8 and 2-9. Figure 2-8 depicts the area of each census tract, while Figure 2-9 shows the Census Tracts Block Groups adjacent to the project area. Data from the adjacent Census Tract Block Groups were used to describe household composition, age, ethnicity and economic conditions of the population in the project corridor and the surrounding area.

2.1.4.3 Affected Environment

The character of the entire project corridor is not homogenous since the project traverses through both rural and urban areas. In the rural section of the project, in Fresno and Tulare counties, residences are widely spaced and are interspersed among the agricultural growing areas. The few businesses located within the rural portions of the corridor are associated with agricultural activities (produce packing and processing and agricultural equipment services primarily). The residences, businesses and governmental and private institutions are concentrated in the City of Dinuba.

Community Character and Cohesion in the Fresno and Tulare County–Rural Segments of the Project

Cohesion refers to the degree of interaction among individuals, groups and institutions that make up a community. Factors that contribute to high levels of community cohesion include long average length of residency, frequent personal contact, ethnic group clusters, and high levels of community activity, elderly residents, and single-family home ownership (Caltrans 1997).

Within the project study area in Fresno County, immediately adjacent to Mountain View Avenue, the household size averages 3.14 persons per household, slightly higher than in the county as a whole. Household composition is 87 percent married-couple families, which is

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[6] **Census tract**
A small, relatively permanent statistical subdivision of a county delineated by a local committee of census data users for purpose of presenting data. Census tract boundaries normally follow visible features, but may follow governmental unit boundaries and other non-visible features in some instances; they always nest within counties. Designed to be relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time of establishment, census tracts average about 4,000 inhabitants. They may be split by any sub-county geographic entity.

Block group
A subdivision of a census tract (or, prior to 2000, a block numbering area), a block group is the smallest geographic unit for which the Census Bureau tabulates sample data. A block group consists of all the blocks within a census tract with the same beginning number.

Example: block group 3 consists of all blocks within a 2000, a block numbering from 3000 to 3999. In 1990, block group 3 consisted of all blocks numbered from 301 to 399Z.

Block
A subdivision of census tract (or, prior to 2000, a block numbering area), a block is the smallest geographic unit for which the Census Bureau tabulates 100-percent data. Many blocks correspond to individual city blocks bounded by streets, but blocks –especially in rural areas- may include many square miles and may have some boundaries that are not streets. The Census Bureau established blocks covering the entire nation for the first time in 1990. Previous censuses back to 1940 had blocks established only for part of the nation. Over 8 million blocks are identified for Census 2000.

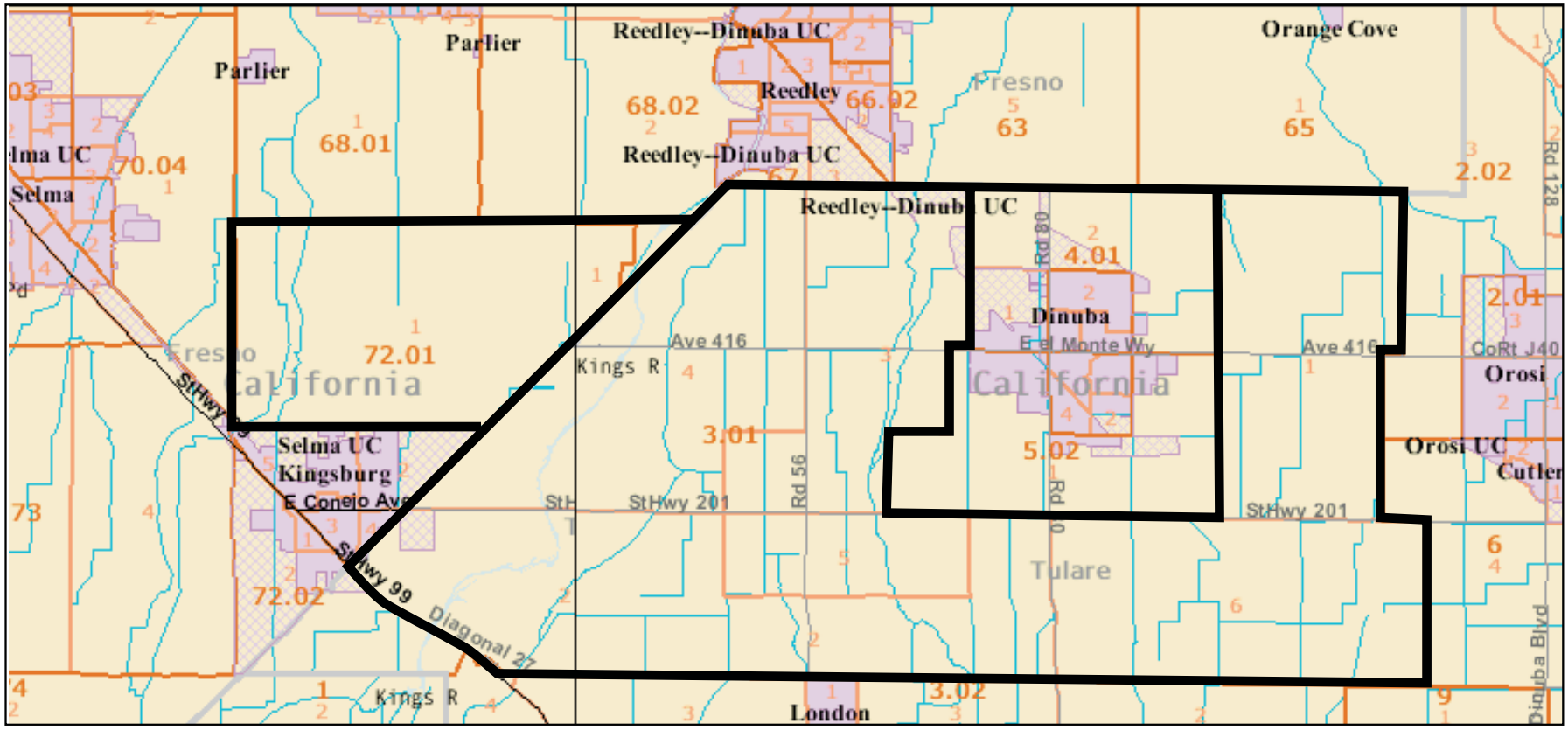


Figure 2-8a. Project Area Census Tracts Year 2000 Census and Census Tract Block Groups
(Source: US Census Bureau, American Factfinder)

N

0 Approx. 5 Miles

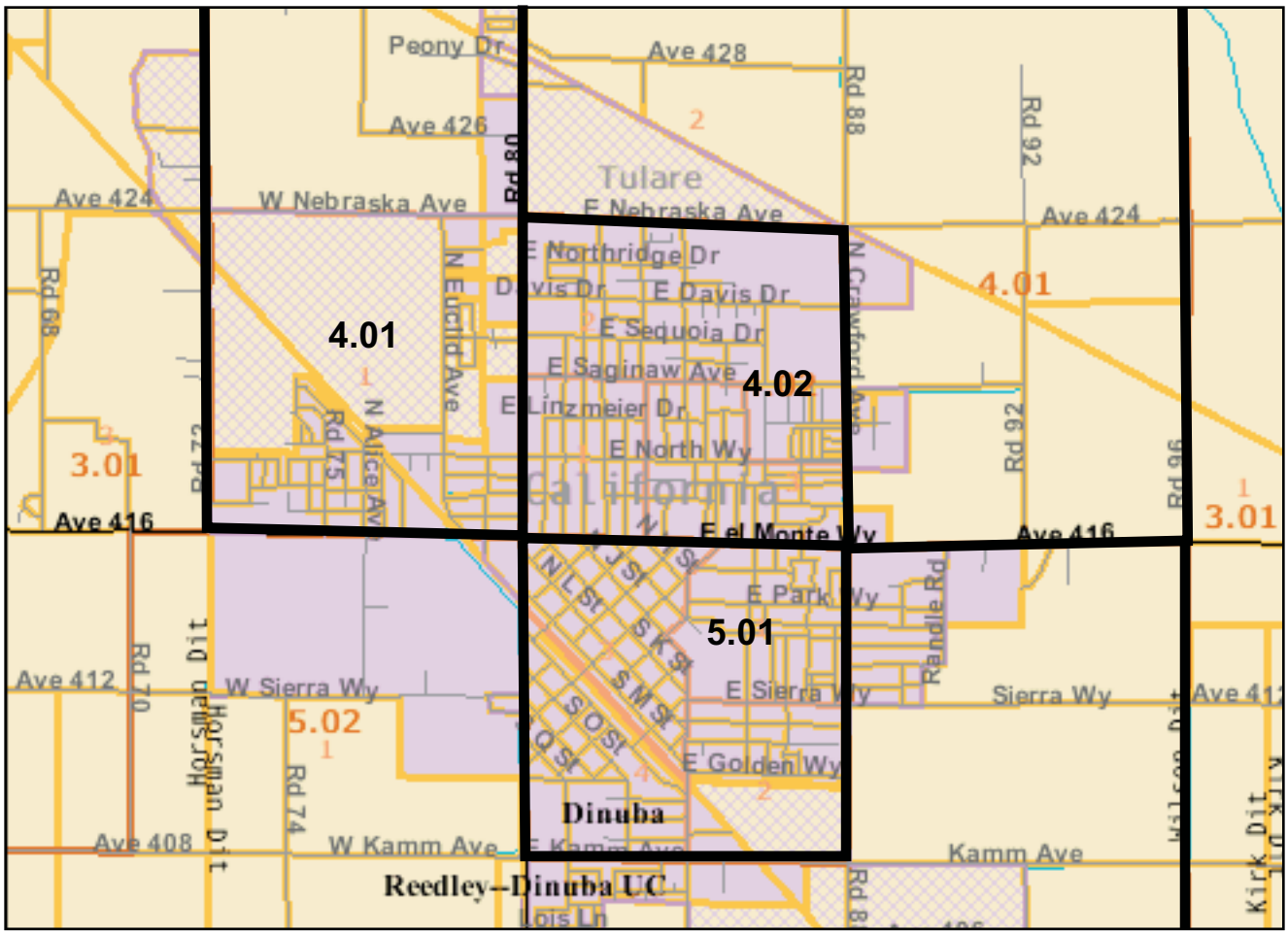
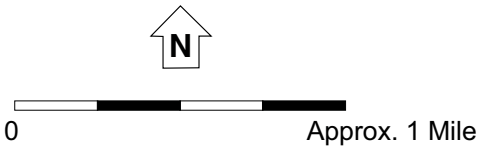


Figure 2-8b. Project Area Census Tracts Year 2000 Census and Census Tract Block Groups
(Source: US Census Bureau, American Factfinder)



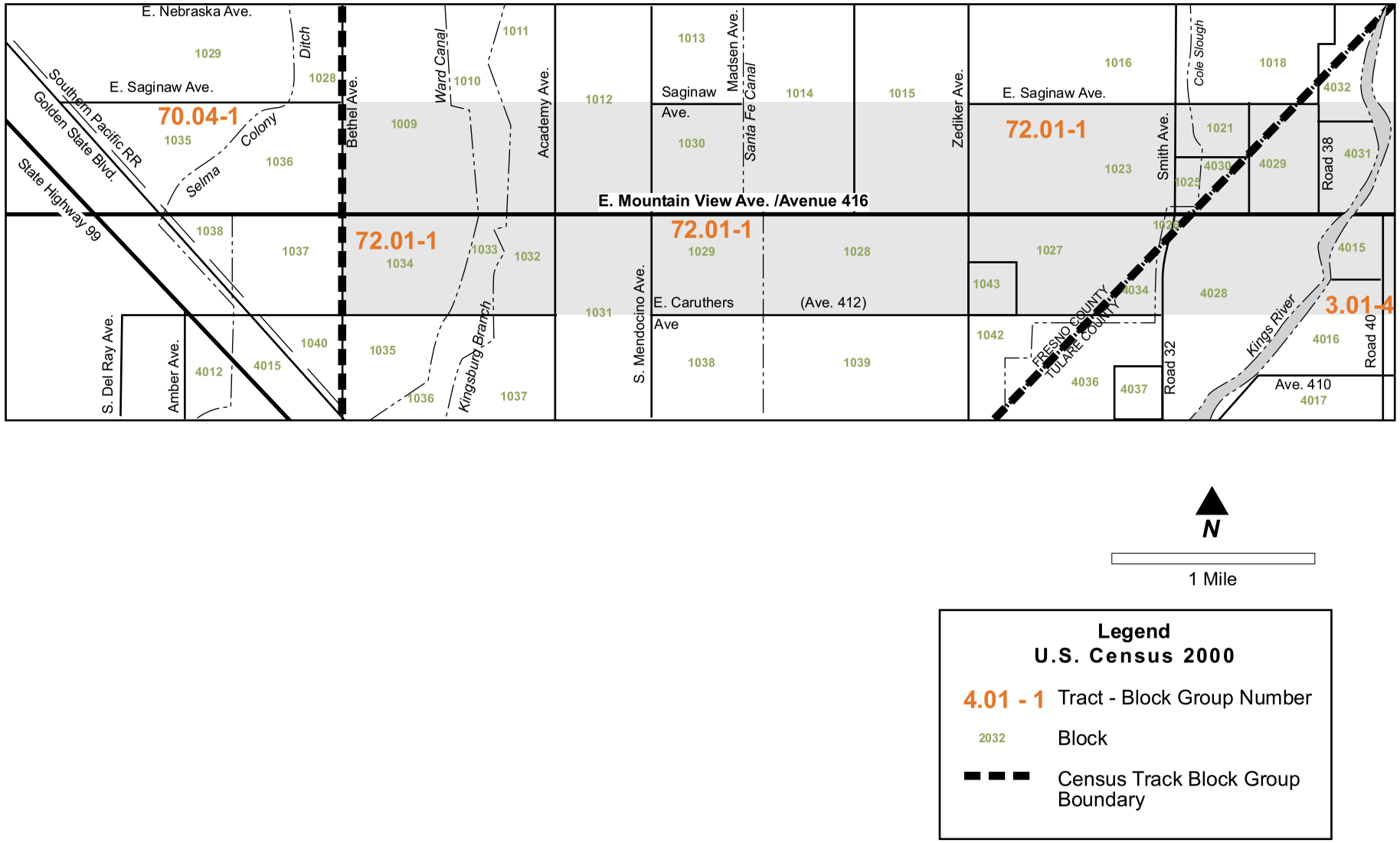


Figure 2-9a. Census 2000 Tract, Block Group and Blocks in the Project Study Area
Source: US Census Bureau 2000 (factfinder.census.gov) and 7.5 Minute Reedley and Orange Cove USGS Quadrangles

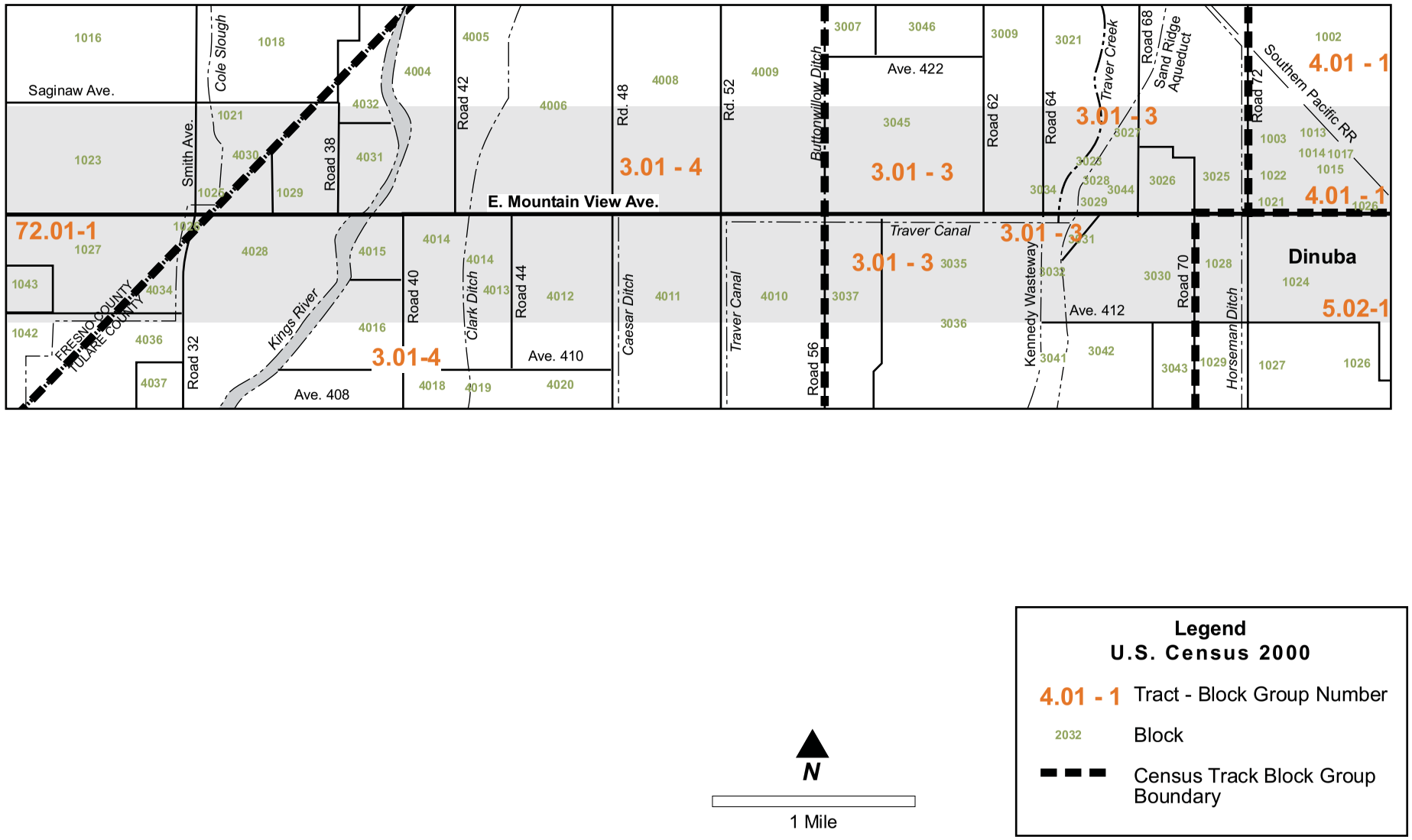


Figure 2-9b. Census 2000 Tract, Block Group and Blocks in the Project Study Area
Source: US Census Bureau 2000 (factfinder.census.gov) and 7.5 Minute Reedley and Orange Cove USGS Quadrangles

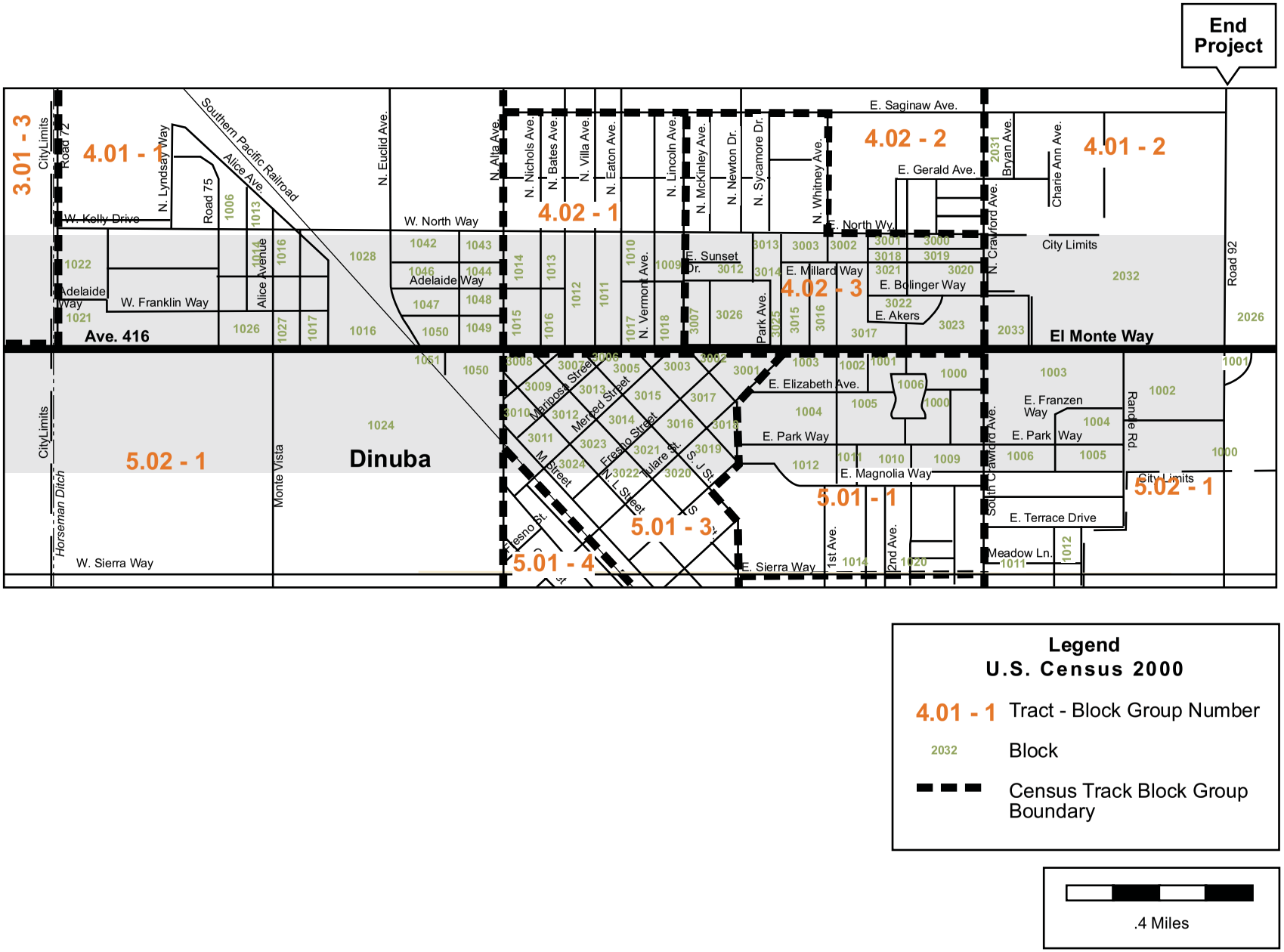


Figure 2-9c. Census 2000 Tract, Block Group and Blocks in the Project Study Area
Source: US Census Bureau 2000 (factfinder.census.gov) and 7.5 Minute Reedley and Orange Cove USGS Quadrangles

substantially higher than in the county as a whole. In the Census Blocks adjacent to the Tulare County rural portion of Avenue 416, the average household size is 2.91 persons per household. The percentage of married-couple families in the Fresno County portion of the project area is 67 percent and in the Tulare County portion, 72 percent. Household size and composition characteristics help define the communication cohesion and characteristics.

For the portion of the project study area in Census Tract Block Groups adjacent to Mountain View Avenue within Fresno County, 48 percent of the population identify as white, and 42 percent identifying as Hispanic or Latino. Similar to the ethnic composition of Fresno County as a whole, Asian is the next largest ethnic group, making up a total of six percent of the population. In the rural area of Tulare County, in Census Tract Block Groups adjacent to Avenue 416, the percentage of the population identifying as white is slightly higher than in Tulare County as a whole and the percentage of the population identifying as Hispanic is slightly lower; 54 percent of the population identify as white and 38 percent of the population identify as Hispanic or Latino. Black or African American and Asian are the next largest groups.

The population in the Fresno County portion of the project appears to be older than the population of the county as a whole. The median age in Fresno County within the adjacent Census Tract Block Groups is 35.4, while only 15 percent of the population is 65 years of age or older. The median age in the rural area of Tulare County within the adjacent Census Tract Block Groups ranges from 35.5 to 35.8. The percentage of the population that is 65 years of age or older ranges from 14 to 15 percent.

Tenure, or home ownership, levels are similar to the county levels in the rural areas, with 58 percent of the population living in owner-occupied units in the adjacent Census Tract Block Group in Fresno County. In the Census Tract Block Groups adjacent to El Monte Way, the levels of home ownership are slightly higher than in the city as a whole and 68 percent of the population living in owner-occupied units in the adjacent Census Tract Block Groups in Tulare County.

Mountain View Avenue/Avenue 416/El Monte Way crosses the boundary areas of six public school districts and is used as a bus route for all but one district. The only school in the rural portion of the project corridor is a private school located between Road 48 and Road 52 in the Tulare County (the former Windsor School). Students living in the rural portions of the project area generally are bused to school or arrive by private car.

Mountain View Avenue/Avenue 416 carries a fair amount of traffic, and vehicle speeds are such that the existing roadway is not conducive to pedestrian crossing in most places. The area has low community cohesiveness due to the low population density and scarcity of institutions and services in the rural areas.

Community Character and Cohesion in the Dinuba Segment of the Project

In the urbanized portion of the project corridor contained within and adjacent to the City of Dinuba, the average household size for the Census Tract Block Groups adjacent to the project area is 3.57 persons, which is generally higher than that of Tulare County as a whole.

Levels of home ownership in the City of Dinuba vary according to location, but within the Census Tract Block Groups adjacent to El Monte Way, 62 percent of the population lives in owner-occupied housing.

Within the City of Dinuba, the majority of the population identifies as Hispanic; 75 percent of the population identify as Hispanic or Latino while 21 percent of the population identify as white. Other ethnic groups comprise two percent or less of the population. The ethnic breakdown is similar for the Census Blocks adjacent to the Dinuba portion of the project; 75 percent of the population identifies as Hispanic, 19 percent of the population identify as white and four percent as Asian. All other ethnic groups each comprise less than one percent of the population.

Median age for the Census Tract Block Groups adjacent to the project area within the City of Dinuba ranges from 24.5 to 36.3, while the City of Dinuba has a median age of 25.9. The percentage of population that is 65 years of age or older in Dinuba is four percent. In Census Tract Block Groups adjacent to El Monte Way, the percentage ranges from four percent to 17 percent.

Land uses adjacent to El Monte Way passing through the City of Dinuba, between Road 72 and Road 92 are a mix of urban uses, including residential (single-family and apartments), commercial uses (auto dealership, convenience markets, service stations, grocery stores, drug stores), institutional uses (government and school district offices, churches), and parks. The central business district of Dinuba is to the south of the project corridor, and centers on Tulare Street, which intersects with El Monte Way in the project area.

Other community institutions in the project corridor include three churches and the City of Dinuba City Hall, all located on El Monte Way in the City of Dinuba. Two churches are on the south side of El Monte Way, and one church and the City hall on the north side. Rose Ann Vuich Park is also located on the northeast corner of El Monte Way and McKinley Avenue. This park is approximately 9.2 acres in size and contains group picnic areas, restrooms, horseshoe pits, a covered stage area, City Parks division offices, a utility area, tot lot play area, a playground, and a parking lot on the north side of the park.

Ease of pedestrian movement through a community is important for creating a cohesive community. Pedestrian traffic along El Monte Way is hampered in some sections due to the lack of continuous sidewalk. Pedestrian crossing of El Monte Way can take place at a number of signalized intersections and non-signalized crosswalks. The area has a medium level of community cohesiveness due to the median age and average household size.

Impacts on Community Character and Cohesion

Project Impacts on Community Character and Cohesion

Segments A through E, Both Alternatives. These segments primarily traverse through rural areas. In the rural sections of the project corridor, residences and businesses are scattered and the primary means of reaching these areas is by automobile; therefore, there is not a high level of

community cohesion in these areas. The project would not create a new barrier, since Mountain View Avenue/Avenue 416 is an existing road.

Segment E is primarily rural; however, the eastern end of Segment E becomes more urbanized as it approaches the city limits of Dinuba. A number of businesses and residential uses are located in the section of Segment E between the Traver Canal crossing and Road 72. Residential development is low density and scattered, with the exception of the mobile home park on the north side of Avenue 416, east side of Sand Ridge Ditch. The proposed project would not create a new barrier that would disrupt or divide the community. In this segment, residential development is low density and most community resources such as parks, schools, commercial areas, and churches are located within the city, in Segment F.

Segment F, Alternative 1

In Segment F under Alternative 1, the right-of-way acquisition would not have an adverse effect on community cohesion. While this alternative would have impacts on the Rose Ann Vuich Park, it would not affect the use of the park as a focal point for community celebrations or for informal use (see Figure 2-4 and Figure 7 in Appendix I). The amount of right-of-way to be acquired is approximately 8.7 percent (0.8 acre) encompassing 60 feet of frontage and requiring removal of mature trees along the El Monte Way frontage. Mitigation measures to compensate for loss of park area are provided in Section 2.1.1.3, Parks and Recreation Facilities.

Segment F, Alternative 2

In Segment F under Alternative 2, the right-of-way acquisition would have an adverse effect on community cohesion due to the required relocation of two church congregations. The structures that house the churches would have to be demolished or relocated to allow widening of El Monte Way to the south. The Christ Believers Church (see Figure 14 in Appendix I) and a church congregation newly moved into the site of the former Maya Theater (see Figure 14 in Appendix I) would be affected. The church congregations would be compensated for loss of property and improvements. All efforts will be made to identify a suitable relocation within the service area of the church community. Refer to Section 2.1.4.4 Relocation Impacts for further information on mitigation measures for relocation impacts.

Segment F, Both Alternatives

The widening of the existing El Monte Way in the City of Dinuba, under either build alternative, would provide benefits to community cohesion by providing for safer and more efficient pedestrian and automobile circulation along and across El Monte Way. While the project will widen the roadway, it will also provide wider sidewalks and more signalized crossings that will improve its function as a pedestrian corridor, thus allowing greater connectivity between neighborhoods on either side of El Monte Way and improve safety of pedestrians, including students walking to schools. These project features would decrease the disruptive influence of the street and reduce the barrier it creates between neighborhoods on the north and south sides of the street.

With both build alternatives in Segment F, the project would increase the number of signalized intersections, making pedestrian crossings of El Monte Way easier and safer. In the section of Segment F between Alta Avenue (Road 80) and Crawford Avenue (Road 88), there would be six signalized intersections and the spacing between signals would average 800 feet. While pedestrians will still have to travel out of their way in some cases, traffic will be held up intermittently by the signals, which would provide more opportunity for pedestrians crossing at unsignalized intersections.

Avoidance, Minimization and/or Mitigation Measures-Community Character and Cohesion

Measures described under parks and recreation facilities (Subsection 2.1.1.3) and relocation impacts below (Subsection 2.1.4.4) would reduce the project's adverse effects on community character and cohesion.

2.1.4.4 Relocation Impacts

Regulatory Setting

Caltrans' Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations Part 24. The purpose of the Relocation Assessment Program is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix D for a summary of the Relocation Assessment Program. Tulare County will be responsible for providing relocation advisory assistance.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 U.S.C. 2000d, et seq.). Please see Appendix C for a copy of Caltrans' Title VI Policy Statement.

Affected Environment

The following discussion summarizes the *Relocation Impact Study for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project* (2004), which is incorporated by reference. Both build alternatives would result in residential displacements in all of the project segments, with the exception of Alternative 1, which would not result in any residential displacements in Segment D. Refer to Tables 2-6 and 2-7 below for a summary of residential and nonresidential displacement for each alternative, by roadway segment.

Table 2-6. Property and Displacement Impacts by Segment – Alternative 1

Segment/ Alternative	Displacements		Property Acquisition Permanent Right-of-way[a]		Total Area of Acquisition (acres)		
	Single-Family Residence	Business/ Other	Part	Full	Permanent	Temporary	AID[b] R/W[c] Permanent
A- Fresno County	0	1	29	0	12.0	2.4	NA
B – Fresno County	8	0	32	1	17.3	3.4	NA
C – Tulare County	3	0	25	0	20.9	3.2	3.3
D – Tulare County	0	0	16	0	14.7	0.5	10.0
E – Tulare County	7	2	42	3	17.5	1.9	1.2
F - Dinuba	44	7	126	9	9.8	0	NA
Total	62	10	270	13	92.2	11.4	14.5

a) Full parcel area required for road right-of-way. The Part column includes parcels that would be acquired but only part of the parcel is required for road right-of-way and a remainder would be left.
b) AID= Alta Irrigation District, Required acquisition outside of the future right-of-way to accommodate relocation of the Alta Irrigation District facilities.
c) R/W = right-of-way

Table 2-7. Property and Displacement Impacts by Segment – Alternative 2

Segment/ Alternative	Displacements		Property Acquisition Permanent Right-of-Way[a]		Total Area of Acquisition (acres)		
	Single-Family Residence	Business/ Other	Part	Full	Permanent	Temporary	AID[b] R/W[c] Permanent
A- Fresno County	0	1	29	0	12.0	2.4	NA
B – Fresno County	8	0	32	1	17.3	3.4	NA
C – Tulare County	5	0	26	0	21.3	3.6	3.3
D – Tulare County	1	0	17	0	14.6	0.4	7.5
E – Tulare County	7	2	42	3	17.5	1.9	1.2
F - Dinuba	36	4/2	140	18	10.2	0	0
Total	57	7/2	286	22	92.9	11.7	12.0

a) Full parcel area required for road right-of-way. The Part column includes parcels that would be acquired but only part of the parcel is required for road right-of-way and a remainder would be left.
b) AID = Alta Irrigation District, Required acquisition outside of the future right-of-way to accommodate relocation of the Alta Irrigation District facilities.
c) R/W = right-of-way

Availability of residential and non-residential properties, for sale or rent, changes according to a variety of factors, which include the market conditions, general economic conditions and new construction activity. The description of conditions provided here is based on surveys conducted in the zip codes surrounding the project site from December 2002 through February 2003, November 2003, February 2004 and July through August 2006. These surveys provide a "snapshot" of conditions existing at the time of the surveys. Although, conversations with Dan Meinert at the City of Dinuba assures that there is currently no residential housing shortage in Dinuba (Meinert 2007). Due to funding constraints, the right-of-way purchasing process is not anticipated to begin before 2008. Conditions may change substantially by that time.

The availability of residential and non-residential properties is summarized in Table 2-8 and is based on the July through August 2006 survey. In general, the supply of available properties at the time of the surveys appears to be somewhat limited for both residential and non-residential uses. The project proponents are required by federal and state relocation laws and regulations to provide relocation assistance to persons who are legally occupying a property required for the project.

Table 2-8. Available Properties in the Project Vicinity

Impact	Properties Available During July-August 2006	
	Fresno Co. [2]	Tulare County/Dinuba [3]
	Units	Units
Available resale residential properties	128	113
Available new residential properties	0	0
Available senior residential units[1]	0	2
Available residential rental properties – apartments	1	1
Available residential rental properties – single-family	0	0
Available non-residential properties for sale	0	4
Available non-residential properties for rent/lease	0	0

[1] Senior residential units are available only to persons 55 years of age or older.
[2] This search included Selma and Kingsburg
[3] This search included Dinuba, Reedley, Cutter, Orosi and Orange Cover

A subsequent survey conducted in the Tulare County/Dinuba area and the Fresno County area near Segment A and B in February 2004 showed a total of 36 residential properties available for resale. Additionally, 44 properties were available in Dinuba, 53 in the City of Selma and 75 in the City of Kingsburg.

Residential Displacement Effects

Both build alternatives would result in adverse effects due to residential displacement. Tulare County, Fresno County and the City of Dinuba as project proponents must provide standard relocation assistance to both tenants and owner occupants in compliance with Caltrans' Relocation Assistance Program and the federal Uniform Relocation Assistance and Real

Property Acquisition Policies Act of 1970, as amended. Replacement housing must be decent, safe, and sanitary, which means it must meet all of the minimum requirements established by federal regulations and conforms to applicable housing and occupancy codes (Caltrans 2000).

Mountain View Avenue/Avenue 416/El Monte Way in the project corridor traverses three zip codes, which were searched for available residential units for sale and rent. Segments A and B of the project are located within Fresno County. The closest communities to these segments are in Selma, to the north of Mountain View Avenue/Avenue 416/El Monte Way, and in Kingsburg, to the south of the project area. The zip codes that surround the project area segments A and B, include these two towns.

Segments C, D, and E are all within Tulare County, and Segment F is within the City of Dinuba. Segments C and D are rural areas; Segment E is rural on the western portion of the segment and becomes urban as it extends east towards the city limits. Segment F is in an urban environment within the City of Dinuba.

Alternative 1

Alternative 1 would require relocation of a total 62 residences, 44 of these within the City of Dinuba, and the remaining 18 residences located in the rural areas of Tulare and Fresno counties. For the rural areas in segments A and B, the nearest properties identified as available for resale were located in the nearby communities of Kingsburg and Selma. Residents would therefore need to relocate to a more urbanized area unless it would be possible to move the existing house or construct a new house on the remainder parcel following right-of-way acquisition.

In the City of Dinuba, the number of available properties would be sufficient to relocate all residential properties in the Segment F portion of the project. The project will be constructed in phases, therefore not all of the relocations would occur at one time. However, it is likely that construction, slated to begin in 2010, of Segment F in Dinuba would occur at one time and that is the segment where the most residential relocations would be required.

Alternative 2

Alternative 2 would require relocation of a total 57 residences, 36 of these within the City of Dinuba, and the remaining 21 residences located in the rural areas of Tulare and Fresno counties. For the rural areas in segments A and B, the nearest properties identified as available for resale were located in the nearby communities of Kingsburg and Selma. Residents would therefore need to relocate to a more urbanized area unless it would be possible to move the existing house or construct a new house on the remainder parcel following right-of-way acquisition.

Non-Residential Displacement Impacts

Non-residential displacement would occur under both alternatives in Segments A and F. All real property transactions must comply with the property acquisition and relocation standards of the State of California, the Caltrans Relocation Assistance Program and the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

These policies and laws require that property owners must be compensated in accordance with fair market values based on appraisals. Business owners must be compensated based on an

assessment of the value of the business and any loss of goodwill. All efforts must be made to identify relocation opportunities for affected businesses that would reduce the loss of goodwill and historic patronage. Wherever feasible, assistance must be made available in identifying suitable relocation sites within the service area of existing businesses.

During the survey conducted in December 2002, one commercial property was available for purchase in the City of Dinuba, one commercial property was available for purchase in Kingsburg and two commercial properties were available for purchase in Selma.

A subsequent survey of the November 2003 *Dinuba Sentinel* real estate classified ads revealed four commercial properties listed for purchase in Dinuba. The size ranged from 1,920 square feet to 6,000 square feet with multiple buildings on some properties. Also listed were two residential properties that are zoned for non-residential use that could be converted to commercial or office use.

During the December 2002 review of available commercial properties, only one commercial property for rent or lease was identified. This commercial property is in the City of Dinuba and is 1,700 square feet with a rent/lease of $400 per month (*Dinuba Sentinel* 2002a and b). No other rental or lease commercial properties were found during the review.

The November 2003 *Dinuba Sentinel* real estate listing listed four commercial properties for rent in Dinuba. One property was a beauty shop, and the remaining three were office space ranging from 1,000 square feet to 1,600 square feet in size. Also listed was a warehouse and light industrial property for lease.

Alternative 1

Alternative 1 would require relocation of a total 10 businesses, seven of these within the City of Dinuba, with the remaining three located in the rural areas of Tulare County and Fresno County. For the rural areas in segments A and B, the nearest properties identified as available for sale were located in the nearby communities of Kingsburg and Selma. A number of properties were found available for sale or rental/lease in Dinuba.

Based on the surveys, it appears that non-residential properties are periodically available for purchase or rent in the project area. Continued development within the City of Dinuba, especially in the large industrial/commercial area along El Monte Way just east of Road 72, will likely add to the inventory of commercial properties; therefore it appears that there would potentially be adequate non-residential properties available for relocation.

Alternative 2

Alternative 2 would require relocation of a total seven businesses and two churches; four of the businesses and the two churches are located within Dinuba. The remaining three businesses are in the rural sections of the project. For the rural areas in segments A and B, the nearest commercial properties identified as available for sale were located in the nearby communities of Kingsburg and Selma. A number of properties were found available for sale or rental/lease in Dinuba.

Based on the surveys, it appears that non-residential commercial properties are periodically available for purchase or rent in the project area. Continued development within the City of Dinuba, especially in the large industrial/commercial area along El Monte Way just east of Road 72, will add to the inventory of commercial properties; therefore it appears that there would potentially be adequate non-residential commercial properties available for relocation.

Relocation of the churches may require construction of new buildings on appropriately zoned vacant properties within Dinuba. It would not be feasible for the churches to relocate to another community since they serve a local congregation. The relocation mitigation would reduce impacts and wherever feasible, relocation sites should be identified within the service area of existing businesses and institutions

Avoidance, Minimization and/or Mitigation Measures

Housing Displacement and Relocation Impacts and Environmental Justice

Avoidance, Minimization and/or Mitigation Measures

Tulare County and Fresno County, as project proponents, shall provide relocation advisory assistance (in their respective areas of jurisdiction) to any person, business, farm or non-profit organization displaced in compliance with Caltrans Relocation Assistance Program and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. County officials would assist residential displaces in obtaining comparable decent, safe and sanitary replacement housing by providing current and continuing information on sale price and rental rates of available housing. Non-residential displaces would receive information on comparable properties for lease or purchase.

Residential replacement dwellings would be in equal or better neighborhoods, at prices within the financial means of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, displaces would be offered comparable replacement dwellings that are open to all persons regardless of race, color, religion, sex or national origin and are consistent with the requirements of Title VI of the Civil Rights Act of 1968. This assistance would also include supplying information concerning federal- and state-assisted housing programs, and any other known services being offered by public and private agencies in the area. A summary of relocation benefits is found in Appendix D.

2.1.4.5 Environmental Justice

Basis for the Evaluation of Social Impacts and Environmental Justice

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994. This executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of

minority and low-income populations to the greatest extent practicable and permitted by law. Low-income is defined based on the Department of Health and Human Service poverty guidelines. For 2000, this was $17,050 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C of this document.

Affected Environment

Environmental justice is designed to protect areas with low-income or very low-income levels, subject to poverty conditions and areas with predominantly minority populations from disproportionate project impacts.

Minority Neighborhoods

As discussed in *Community Impact Assessment for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project* (2006a), the largest minority group in the general area surrounding the project corridor, as reported in the 2000 United States Census, is Hispanic. Other minority groups are present but in very low percentages. In Fresno County, the Hispanic population makes up 44 percent of the population; in Tulare County, the Hispanic population is 51 percent; and in the City of Dinuba, the Hispanic population is 75 percent. The percentage of minority populations of all types in the rural portions of the project (Census Tract Block Group in Census Tracts 72.01 and 3.01) is generally lower than in the respective counties in which they are located. However, in the City of Dinuba, the percentage of Hispanic persons in Census Tract Block Group exceeds the county's percentage. In the Census Tract Block Group immediately adjacent to El Monte Way, the percentage of the population that is Hispanic ranges from 71 to 74 percent on the north side of El Monte Way and ranges from 78 to 80 percent on the south side of El Monte Way. In general, the City of Dinuba could be considered an area sensitive to environmental justice due to the presence of the largely Hispanic minority population.

Neighborhoods Subject to Poverty Conditions

The study area was examined for indicators of low-income and poverty conditions at the Census Tract Block Group level. (It should be noted that this analysis provides a generalized description of the overall conditions in the census areas and that the overall condition described does not necessarily reflect the actual circumstances of particular residents in a census area.) Four indicators of poverty conditions reported in the 2000 United States Census were used to identify the potential for poverty in neighborhoods adjacent to Mountain View Avenue/Avenue 416/El Monte Way. These indicators are: (1) overcrowding in rented housing units; (2) overcrowding in owner-occupied housing units; (3) households with public assistance income; and (4) lower income households with excessive housing cost burden. Those Census Tract Block Groups where these indicators exceeded the percentage at the county level were considered especially susceptible to environmental justice concerns with respect to poverty. In addition, the income limits provided by Housing and Urban Development were examined with respect to median family income to determine whether low-income or very low-income populations were present.

Table 2-9 (on page 2-45) summarizes the income levels and poverty indicators for the City of Dinuba and for the study area (refers to the Community Impact Analysis for Mountain View Ave/Ave 416/El Monte Way Widening Project for the detailed description of these indicators). Refer to Figures 2-9a through 2-9c for Census Tract and Block Group locations. Those Census Tracts and Census Tract Block Groups with the highest occurrence of poverty status indicators that exceed the countywide percentages are located in or immediately adjacent to the City of Dinuba. The study area Census Tract Block Group that has five out of five indicators exceeding the countywide percentages is located in Census Tracts 5.01. The other Census Tract Block Group in Census Tract 5.01 exceeds the countywide percentages in four out of five factors. In Census Tract 4.01, one Census Tract Block Group exceeds the Tulare County's percentages in four out of five indicators. The city overall and the study area within the city in particular are considered an area of concern with respect to issues of environmental justice.

Impacts Related to Environmental Justice

In accordance with Executive Order 12898, this impact section identifies areas where minority and/or low-income persons reside, analyzes whether the project will have disproportionately high and adverse effects on low- and moderate-income persons, and minority persons, and identifies public participation efforts to date.

"Disproportionately high and adverse effect" on minority and low-income populations means an adverse effect that (1) is predominately borne by a minority population and/or a low-income population; or (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by non-minority and/or non low-income populations (FHWA 1998). Indicators of significance developed for this analysis include:

- The potential for the project to result in disproportionately high and adverse social, economic or environmental effects to minority and/or low-income populations;
- The potential for the project to cause substantial adverse public health conditions or risks on minority and/or low-income populations.

When determining whether a particular program, policy or activity will have disproportionately high and adverse effects on minority and low-income populations, mitigation and enhancement measures and potential offsetting benefits to the affected minority or low-income populations should be taken into account (FHWA 1998).

Effects on Minority Populations

No-Build Alternative. Under the No-Build Alternative, there would be no adverse effects due to road widening and no property acquisitions. On the other hand, under the No-Build Alternative, the residents of the city would not enjoy the benefits of improved safety for automobile, pedestrian and bicycle traffic along El Monte Way. The community as a whole would be affected; therefore the No-Build Alternative would not disproportionately affect a minority population over a non-minority population. No adverse environmental justice effects, with respect to minority populations, would occur.

Segment F, Alternatives 1 and 2. The highest proportion of minority (Hispanic) population in the study area is within the City of Dinuba, in Segment F.

Alternative 1 would widen primarily to the north of the existing El Monte Way alignment and would require relocation of 44 residences. Within the Census Tract Block Groups 4.01-1, 4.01-2, 4.02-1 and 4.02-3 (see Figure 2-9c), which are most affected under this alternative, the percentage of Hispanic population ranges from 71 to 74 percent (PAR Environmental Services, Inc. 2006a).

Alternative 2 would widen to the south of the existing El Monte Way alignment and would require the relocation of 36 residential properties. Within the Census Tract Block Groups 5.01-1, 5.01-3 and 5.02-1 (see Figure 2-9c), which are most affected under this alternative, the percentage of Hispanic population ranges from 78 to 80 percent (PAR Environmental Services, Inc. 2006a).

Because the predominant population group in Dinuba and in the study area is Hispanic, the project's impacts to this population are not considered disproportionate under either alternative.

Effects on Low-Income Populations

No-Build Alternative. Under the No-Build Alternative, there would be no impacts to low-income populations due to road widening and property acquisitions. On the other hand, under the No-Build Alternative, the residents of the city would not enjoy the benefits of improved safety for automobile, pedestrian and bicycle traffic along El Monte Way. The community as a whole would be affected; therefore the No-Build Alternative would not disproportionately affect low-income populations over non-low-income populations. No adverse environmental justice effects, with respect to low-income populations, would occur.

Table 2-9. 2000 United States Census Areas that Exceed Countywide Percentage for Poverty Status Indicators or Have Median Family Income Below the Housing and Urban Development Income Limit for Low-Income

Area	Crowded[a] or Severely Overcrowded Housing		Median Family Income	Household Income	Housing Cost Burden Rent > 30% of Household Income for Households with 1999 Income <$20,000
	Owner-Occupied Units	Renter-Occupied Units	Below HUD Low-Income Limit[b]	Public Assistance Income	
City of Dinuba	X	X		X	X
Study Area Census Tracts and Block Groups					
Census Tract 72.01					X
Block Group 1					X
Census Tract 3.01		X			
Block Group 3					
Block Group 4					X
Census Tract 4.01	X	X			X
Block Group1	X	X		X	X
Block Group 2		X			X
Census Tract 4.02		X			
Block Group1		X			
Block Group 3	X	X			
Census Tract 5.01	X	X	X	X	X
Block Group 1	X	X	X	X	X
Block Group 3	X	X	X		X
Census Tract 5.02/*Block Group 1*	X	X		X	X

(a) Crowding: Households with more than one person per room are considered crowded. Households with more than 1.5 persons per room are considered severely overcrowded (State of California Department of Housing and Community Development. 1998)
(b) The Department of Housing and Urban Development sets income limits that determine the eligibility of applicants for Housing and Urban Development assisted housing programs. Low-income families are defined as families whose incomes do not exceed 80 percent of the median family income for the area.
Source: *United States Census Bureau 2000a and 2000e*

Segment F, Alternatives 1 and 2. As shown in Table 2-9 above, the Census areas within the project study area with the highest number of households likely to be sensitive to environmental justice issues due to low-income or poverty conditions are located south of El Monte Way in Census Tract Block Groups 5.01-1 and 5.01-3. These two Census Tract Block Groups have a median family income below the Housing and Urban Development-defined low-income level and exceed the county percentage for crowded or severely overcrowded housing conditions and housing cost burdens as reported in the 2000 United States Census. Census Tract Block Groups 5.02-1 also exceeds the county percentage for crowded or severely overcrowded housing conditions and housing cost burdens, but does not have a median family income below the Housing and Urban Development-defined low-income level.

Alternative 1. Alternative 1 would widen El Monte Way primarily to the north of the existing alignment and would potentially require relocation of 44 residences, eight (8) more residences than Alternative 2. Nine (9) of these residential properties are located in Census Tract Block Groups 5.01-1, 5.01-3. This alternative has the potential to affect low-income households (PAR Environmental Services, Inc. 2006a).

Alternative 2. Alternative 2 would widen El Monte Way to the south of the existing alignment and would potentially require relocation of 36 residential properties. Seventeen (17) of these residential properties are located in Census Tract Block Groups 5.01-1 and 5.01-3. Because low-income levels and a higher percentage of poverty factors are present in these Census Tract Block Groups than in other Census Tract Block Groups in the project area, this alternative has a greater potential to effect low-income households than Alternative 1(PAR Environmental Services, Inc. 2006a).

Because poverty factors are present in all Census Tract Block Groups of the study area in Segment F, either alternative in Dinuba would have the potential to result in adverse effects on low-income households or families, or households or families living with poverty conditions. Neither alternative would appear to have a "disproportionate" effect on low-income populations.
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Health Effects and Environmental Justice

No-Build Alternative. Under the No-Build Alternative, there would be no road widening and no property acquisitions. No adverse environmental justice effects with respect to health concerns would occur.

Both Build Alternatives. The air quality study prepared for the project (PAR Environmental Services, Inc./CCS 2004) indicates that the project would not result in substantial adverse impacts with respect to air quality. The noise study prepared for the project found that traffic noise levels are expected to exceed FHWA/Caltrans noise level criteria at most residential locations along Mountain View Avenue/Avenue 416/El Monte Way. Traffic noise levels are also expected to exceed Fresno County, Tulare County, and City of Dinuba noise level criteria. These effects are not restricted to any particular location, but exist throughout the length of the project and would therefore not disproportionately affect areas sensitive to environmental justice concerns. Additionally, the City of Dinuba has taken steps to ensure that residential setbacks

from the new right-of-way are maintained by requiring relocation/removal of residences that would otherwise have substandard setbacks due to the widening of El Monte Way.

Conclusion Environmental Justice Effects

As previously stated, Caltrans guidance for addressing environmental justice states that mitigation and enhancement measures and potential offsetting benefits to the affected minority or low-income populations should be taken into account when determining whether a particular program, policy or activity will have disproportionately high and adverse effects on minority and low-income populations (FHWA 1998).

As described below, neither Alternative 1 nor Alternative 2 is considered to have a disproportionately high and adverse effect on minority and low-income populations. Mitigation measures are available that would essentially remove any appreciable difference between the two alternatives with respect to environmental justice issues. The selection of Alternative 2 would not result in an environmental justice impact that is appreciably more severe or greater in magnitude than if Alternative 1 were selected. While the No-Build Alternative would avoid relocation impacts to low-income populations, it would deny the community at large of the benefits of increased traffic safety and efficiency of circulation.

The proposed project would benefit the residents of Tulare and Fresno counties and the City of Dinuba by improving safety and circulation along the length of the project. Both alternatives would have offsetting benefits to the affected minority or low-income populations, including improved safety for automobile, pedestrian and bicycle traffic using El Monte Way for east-west travel and for traffic crossing El Monte Way for north-south travel. At the current time, offset intersections and non-right angle and unsignalized intersections make crossing El Monte Way (by pedestrian, bicycle or automobile traffic) difficult. The accident rate for El Monte Way is higher when compared to similar state roadways.

2.1.5 Utilities and Emergency Services

Technical Study Reference: The *Community Impact Assessment for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project* (PAR Environmental Services, Inc. 2004).

2.1.5.1 Affected Environment

Table 2-10 shows the existing utility providers and facilities that would be affected by the project. Electrical service poles and vaults located outside of the existing right-of-way are in place under easement rights granted to Pacific Gas & Electric Company (PG&E). Aerial cable television lines are in place under license agreement with the pole owner. Medium and high pressure gas lines and fiber optic lines are adjacent to the existing road right-of-way throughout the project corridor. In the project study area, electrical service is provided by Pacific Gas and Electric Company. AT&T provides telephone communications. In and adjacent to the City of Dinuba, natural gas is provided by Southern California Gas Company. In rural portions of the study area, individually maintained propane tanks are generally used for natural gas.

Within the City of Dinuba, municipal services are provided for domestic water and sanitary sewer. The City of Dinuba domestic water system consists of a network of water mains that are

looped throughout the community, eight groundwater wells, and a 1,000,000-gallon storage tank in the Southwest Dinuba Industrial Park. The City owns and operates a wastewater treatment plant that is located southwest of the community. The collection system includes several major trunk sewers, including three trunk sewers in Sierra Way, west of Alta Avenue (Road 80) that connect to the wastewater treatment plant. Domestic water lines and/or sanitary sewer collection lines are located within existing right-of-way of El Monte Way in some areas. The City also provides an underground collection system for storm water runoff, portions of which are located in El Monte Way. The storm water system consists of several sub areas, each with a separate disposal system.

2.1.5.2 Impacts to Community Public Services and Utilities

Both Build Alternatives

Public and private utilities are located adjacent to the roadway throughout the project corridor. Table 2-10 shows the utility facilities that would be affected in each segment of the project.

Both build alternatives would have similar impacts on utilities. There are only minor differences between the alternatives with respect to the amount of facilities that would be affected. Both alternatives would require relocation of Southern California Gas lines of various sizes and pressures; Pacific Gas and Electric Company poles and underground electrical vaults; Pacific Bell (SBC) poles and aerial lines and underground fiber optic lines; Time Warner/GST and Williams Communications fiber optic lines.

Both build alternatives would affect Consolidated Irrigation District facilities, requiring relocation or revision of valves, bubblers, standpipes, pipes and culverts; realignment of Cole Slough and new or realigned piping. Both alternatives would affected Alta Irrigation facilities, requiring realignment of Traver Canal in Segment D.

Under either build alternative, no permanent adverse effects to public services or utilities will occur since all utilities are proposed to be replaced and/or relocated as part of the project.

Temporary impacts to utilities will occur during construction since utilities located in the existing and proposed right-of-way areas must be relocated. Effects may include interruption of services due to accidental damage or during relocation activities. Potentially affected utilities are listed in Table 2-10. Service interruption is a potentially substantial adverse effect, which can be avoided through preconstruction and construction period coordination efforts between the project proponents and utility providers.

Table 2-10. Utility Impacts

Segment	Utility	Facilities Affected
A & B – Fresno County	Southern California Gas	Natural gas lines: lateral line; 2-, 3- and 4-inch line; medium pressure line
	PG&E	Electricity: aerial lines and poles; below ground lines
	Pacific Bell (SBC)	Fiber optic line, aerial phone lines/poles
	Time Warner Telecommunications/GST	Fiber optic line
	Williams Communications	Fiber optic line
C – Tulare County	Southern California Gas	Natural gas lines: lateral lines; high pressure lines; medium pressure lines
	PG&E	Electrical infrastructure: aerial lines and poles; below ground lines; electrical vault
	Pacific Bell (SBC)	Poles and fiber optic line
	Time Warner Telecommunications/ GST	Fiber optic line
	Williams Communications	Fiber optic line
D – Tulare County	Southern California Gas	Natural gas lines: laterals and high pressure lines
	PG&E	Electrical infrastructure: aerial lines and poles; below ground lines; electrical vault
	Pacific Bell (SBC)	Fiber optic line
	Time Warner Telecommunications/ GST	Fiber optic line
	Williams Communications	Fiber optic line
E – Tulare County	Southern California Gas	Natural gas lines; laterals; medium and high pressure lines
	PG&E	Electrical infrastructure: aerial lines and poles; below ground lines; electrical vault
	Pacific Bell (SBC)	Fiber optic line; aerial phone cable, and poles
	Time Warner Telecommunications	Fiber optic line
	Warner Communications	Fiber optic line
	Tulare County/City of Dinuba	Sewer manhole covers; water valves and valve covers
F – City of Dinuba	Southern California Gas	Natural gas lines; laterals; medium and high pressure lines; gas valves
	PG&E	Electrical infrastructure: aerial lines, poles and electrical vaults
	Pacific Bell (SBC)	Manhole vault covers; poles and fiber optic line
	City of Dinuba Water & Sewer	Sewer manhole covers; water valves and valve covers; fire hydrants
	AT&T Broadband	Aerial and underground lines; vault
	San Joaquin Railroad	Install crossing guard arms

Source: *Tarvin and Associates Real Estate Appraisal and Acquisition Services. This information provides a "snap shot" of existing conditions. This information will have to be updated with further detail during final design phases of the project (pers. comm. Tarvin 2003).*

Storm Drainage Impacts

No-Build Alternative. No storm drainage improvements would be needed to provide roadway drainage under the No-Build Alternative.

Both Build Alternatives. In the rural portions of the project (Segments A through E), it is proposed that the existing drainage patterns be maintained (with minor exceptions along the Traver Canal). Existing storm water sheet flows from the roadway onto adjacent properties where it infiltrates into the soil, or flows into existing irrigation district facilities, or into natural

streams such as the Kings River. In both counties, the medians would function as small retention areas that would collect storm water runoff from the roadway.

In the City of Dinuba, additional storm drain improvements are being made by the City. Improvements to drainage basins and trunk lines would occur in the El Monte-Euclid, Midtown and Crawford-Olive drainage basins. These improvements are not part of this project.

2.1.5.3 Public Safety and Emergency Services

Police Protection

The Fresno County and Tulare County Sheriff's Departments, each in their respective jurisdictional areas, provide law enforcement services in the unincorporated portions of the study area.

Police protection within the City of Dinuba is provided by the City Police Department. The department consists of 39 sworn officers (City of Dinuba 2007). Average response time is three to five minutes for any portion of the city. The City has a mutual aid agreement with the Tulare County Sheriff's Department.

Fire Protection

In the Fresno County portion of the study area, fire protection services are provided by the Fresno County Fire Protection District. Station Number 83 is located on East Mountain View Avenue, 0.8 mile west of Bethel Avenue. In Tulare County, fire protection services are provided by the Tulare County Fire Department. Station Number 3 serves the unincorporated area near Dinuba.

The City of Dinuba Fire Department, from its station located in downtown Dinuba, provides fire protection, rescue, and emergency medical services. The department has 25 people in their personnel, of which, six are command officers, 15 paramedics/engineers and three full-time EMT 1 ambulance drivers. Since the City of Dinuba passed a Public Safety Tax in November 2005, two engines have been replaced and two additional ambulances were purchased that serve Dinuba and surrounding area (City of Dinuba 2007).

Impacts to Police and Fire Protection Services

Both Build Alternatives

Except for temporary impacts during construction, the proposed project will improve emergency access and safety by improving traffic flow along Mountain View Avenue/Avenue 416/El Monte Way. With both build alternatives, the proposed four-lane roadway will allow for increased safety by providing two lanes in each direction, and by providing left-turn lanes at major intersections.

In the rural portions of the project, left-turn entrance and exit access to several private driveways and farm access roads would be eliminated by the construction of the 22-foot wide median. The proposed median would not be raised and would not present a barrier to emergency vehicles during dry conditions; however, the median would serve as a drainage/detention area and may be impassable during wet or muddy conditions. Emergency vehicles could be delayed in reaching

properties if they were required to travel to the nearest intersection to execute a u-turn. Therefore, emergency crossover points are proposed at regular intervals to ensure all-weather emergency access. These crossover median breaks should be spaced from 0.25 mile to 0.5 mile apart.

Within the City of Dinuba, street or alley access would be changed to some residential properties as a result of intersection reconstructions at El Monte Way and J Street/North Villa Avenue and at El Monte Way and I Street. The number of properties affected by changes to street or alley access would depend on the intersection option and alignment alternative selected. Loss of access to residential properties, either street or alley, would be of concern for emergency access. Street frontage access will be maintained by combining remnant parcels with adjacent affected properties. Alley access can be maintained by ensuring the connection is restored either to El Monte Way or realigned to connect to the nearest side street.

During construction, emergency access would be affected for properties adjacent to the construction area. For each construction phase, coordination with emergency service providers would be required to ensure that access to adjacent homes and businesses is maintained at all times.

Prior to start of construction, the project management team shall coordinate with the California Highway Patrol, the City of Dinuba Police Department, Fresno County Sheriff's Department and Fire Departments, the Tulare County Sheriff's Department, City of Dinuba and Tulare County Fire Departments and Fire Districts, and local public and private ambulance and paramedic providers in the area to prepare a Construction Period Emergency Access Plan. The Emergency Access Plan shall identify phases of the project and construction scheduling and shall identify appropriate alternative emergency access routes.

Avoidance, Minimization and/or Mitigation Measures

Construction of either of the alternatives and the acquisition of right of way would require the utility facilities within the project limits to be relocated. A more detailed study would be conducted during the design phase of the project. In addition the following would apply prior to and during construction

1. Emergency crossover points shall be provided to ensure all-weather emergency access on the rural portion of the proposed project.

2. Street frontage access will be maintained for emergency vehicles by combining remnant parcels with adjacent affected properties. Alley access will be maintained by ensuring that connection is restored to either El Monte Way or the nearest side street.

3. Prior to start of construction, the project management team shall coordinate with affected school districts to provide for alternative bus routes and safe routes to schools for students.

2.1.6 Traffic & Transportation/Pedestrian & Bicycle Facilities

This section summarizes *The Transportation Technical Report, Mountain View Avenue/Avenue 416 (El Monte Way) Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County, California.*

2.1.6.1 Regulatory Setting

Caltrans directs that full consideration should be given to the safe accommodation of pedestrians and bicycles during the development of federal-aid highway projects (see 23 Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

Caltrans is committed to carrying out the 1990 Americans with Disabilities Act by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

2.1.6.2 Affected Environment

Mountain View Avenue/Avenue 416/El Monte Way is a major roadway serving southern Fresno County and northern Tulare County, providing a direct connection for this area's residents and industry to State Route 99, the region's main north-south transportation link. Access from this area to State Route 99 is of regional importance because a heavy amount of traffic is generated along this roadway by agricultural activities in the region. A number of food processing plants, produce packinghouses, container manufacturing plants, distribution centers and other manufacturing facilities are located in and around the communities served by the roadway.

As indicated in Chapter 1, Project Description, the corridor experiences heavy amounts of traffic, including a larger portion of truck traffic. Truck traffic is estimated at 15 percent of the average daily traffic in Fresno and Tulare counties and 11 percent of the average daily traffic in the City of Dinuba. Traffic volumes are predicted to increase over the study period (2001 to 2030) and the Level of Service[7] will reach unacceptable levels (Level of Service E and F) at most intersections and in most roadway segments by 2030.

Accident and Safety Information

Automobile, bicycle and pedestrian safety is an issue along the corridor. Traffic accidents along Mountain View Avenue/Avenue 416/El Monte Way are a concern. Accident rates for this analysis were provided by Tulare County Resource Management Agency, City of Dinuba, and

[7] Level of Service is the qualitative term used to describe whether a roadway segment or intersection has sufficient capacity to serve expected traffic volumes. Level of Service is expressed qualitatively with letters "A" through "F" from best to worst. Level of Service A to E generally represents traffic volumes at less than roadway capacity, while Level of Service F represents over-capacity to forced flow conditions.

County of Fresno. Throughout the study area, accident rates along the corridor are higher than other comparable facilities in the state (see Table 1-2 in Section 1.1). Within the City of Dinuba, there are safety issues related to intersecting streets that are not at right angles to El Monte Way. The road is narrow at points, and it is difficult for bicycles to share the road with automobiles. Due to the age of the transportation system, some sidewalks and intersections are not compliant with the Americans with Disabilities Act.

Traffic Volumes

The Transportation Technical Report, Mountain View Avenue/Avenue 416 (El Monte Way) Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County, California, prepared by Y&C Transportation Consultants, Inc., examined 33 intersections, signalized and unsignalized, and eight linear roadway segments along the corridor. The existing (2001) turning movement counts on Avenue 416 in Tulare County were provided by Tulare County Resource Management Agency and the 2030 future traffic projections were provided by the Tulare County Association of Governments. Some additional counts on Avenue 416 between Crawford Avenue and Road 92 were collected by Tulare County Resource Management Agency in March 2002. The future traffic projections for Avenue 416 were fine-tuned through discussions with staff of Tulare County Association of Governments, Tulare County Resource Management Agency, and the City of Dinuba. The 2001 average daily traffic on Avenue 416 was interpolated between the 1998 traffic counts and the 2030 future traffic projections. The existing (2001) turning movement counts and 2030 future traffic projections for Mountain View Avenue were provided by the County of Fresno.

The traffic report indicates that under existing conditions, all study intersections operate at acceptable Level of Service. It should be noted that one individual movement at intersection of E. El Monte Way/Nichols Avenue (K Street) and one movement at E. El Monte Way/ Easton Avenue would experience Level of Service E during one peak period, but overall, those intersections are operating at an acceptable Level of Service.

Level of Service Criteria

The Level of Service was determined for each intersection and roadway segment under existing, future without project, and future with project, conditions. Level of Service is a measure of traffic flow that is evaluated when determining a road's deficiencies and needs, with Level of Service A being the best traffic flow conditions and Level of Service F representing gridlock.

Agencies responsible for the operation of the transportation system define Level of Service that is considered acceptable and unacceptable. For the City of Dinuba and County of Fresno, Level of Service A through C are considered acceptable and Level of Service D through F are considered unacceptable. However, the City of Dinuba may accept Level of Service D and E at locations where right-of-way and environmental constraints exist. For the unincorporated Tulare County, Level of Service A through D is considered acceptable and Level of Service E and F are considered unacceptable.

Results of Traffic Operations Analysis

The traffic analysis examined 33 intersections and eight roadway segments under existing conditions. All study intersections in Fresno and Tulare counties operate at Level of Service C

or better during peak hours. Roadway segments between Bethel Avenue and Smith Avenue operate at Level of Service C, and segments between the county line and Road 80 in Tulare County operate at Level of Service D under existing conditions.

The traffic study reports that by the year 2030 traffic would increase in the study area. Roadway segments between Bethel Avenue and Smith Avenue would operate at Level of Service D in the AM peak hour and at Level of Service E in the PM peak hour. The segments between the county line and Road 56 would operate at Level of Service E in both the AM and PM peak hours. Segments between Road 56 and Alta Avenue (Road 80) would operate at Level of Service E in the AM peak hour and Level of Service F in the PM peak hour. Table 2-11 indicates the daily and peak hour volumes and Level of Service for existing and future roadway conditions.

The traffic study indicates that in the year 2030, without improvements, five out of the six signalized intersections would operate deficiently at Level of Service E or F during the AM or PM peak period. The data shows that the delay for motorists at the intersection of Avenue 416 and Road 72 would be immeasurable. Delays for minor movements at the unsignalized intersections with Level of Service F throughout the project would range from approximately 50 seconds to in over 16 minutes. Most of the unsignalized intersections would have at least two movements (e.g., left turn, through, or right turn) that would experience Level of Service E or F during one or both peak periods.

Table 2-11. Daily and Peak Hour Volumes and Level of Service for Existing and Future Conditions

Location	Section of Roadway	Existing Conditions				Year 2030 No Improvements			
		ADT[1]	Peak Hour	Peak Hour Volume	LOS[2]	ADT	Peak Hour	Peak Hour Volume	LOS
Fresno County	Bethel Ave. to Academy Ave.	7,600	AM	671	C	17,700	AM	1,240	***D***
			PM	718	C		PM	1,771	***E***
	Academy Ave. to Mendocino Ave.	7,600	AM	662	C	17,300	AM	1,209	***D***
			PM	715	C		PM	1,728	***E***
	Mendocino Ave. to Madsen Ave.	7,600	AM	684	C	17,300	AM	1,257	***D***
			PM	784	C		PM	1,796	***E***
	Madsen Ave. to Zediker Ave.	7,600	AM	688	C	18,200	AM	1,326	***D***
			PM	772	C		PM	1,816	***E***
	Zediker Ave. to Smith Ave.	7,600	AM	676	C	18,200	AM	1,271	***D***
			PM	767	C		PM	1,816	***E***
Tulare County	County line to Rd. 56	11,625	AM	743	D	19,200	AM	1,497	***E***
			PM	742	D		PM	2,253	***E***
	Rd. 56 to Rd. 72	11,635	AM	720	D	28,530	AM	2,071	***E***
			PM	801	D		PM	3,099	***F***
City of Dinuba	Rd. 72 to Rd. 80 (Alta Ave.)	11,635	AM	873	***D***	27,120	AM	2,340	***E***
			PM	1,018	***D***		PM	3,199	***F***

Unacceptable Level of Service is noted in ***bold italics***.
[3] Existing Conditions are from 2001 field data, which is provided in the *Transportation Technical Report* (Y&C Transportation Consultants 2002 addendum 2007)
[2] ADT= Average Daily Traffic
[3] LOS= Level of Service

An addendum to the traffic report (Y&C Transportation Consultants 2002 addendum 2007) was prepared in May 2007. In 2007, the average daily traffic count on Mountain View Avenue/Avenue 416/El Monte Way, east of Road 56 was 12,972 vehicles. This is between the 2001 count as shown in Table 2-10 and the projected average daily traffic count of 21,460 vehicles by the year 2010. The current traffic numbers are in line for the year 2010 and the year 2030 traffic projections. Road 56 was also evaluated during the 2007 addendum, and showed that in 2001, the average daily traffic count was 311 vehicles and the projected 2010 average daily traffic count was 536 vehicles. The morning peak hourly volume on Road 56 in 2003 was 323 vehicles. This value is within the 2001 conditions and the 2010 and 2030 traffic projects. These numbers show no changes in traffic conditions along the project corridor (Y&C Transportation Consultants 2002 and addendum 2007).

2.1.6.3 Project Effects on Transportation

No-Build Alternative

Traffic Operations

The traffic operations analyses presented in Table 2-12 for roadways indicate deficiencies under existing and future conditions. The study roadway segment in the City of Dinuba (Road 72 to Road 80) is currently operating below City standards during the AM and PM peak periods. Projected increases in traffic under Year 2030 conditions, indicate that the roadway's capacity would not accommodate future traffic. The entire corridor is expected to operate deficiently, at Level of Service D or worse.

Traffic in the Year 2030 would cause most intersections in the study area to fail (Table 2-12). Six study intersections would be signalized, and of those, all but one would operate deficiently during the AM or PM peak period. Among the non-signalized intersections, all would experience unacceptable Level of Service in at least one of intersection movements (for example, a left-turn or through movement).

Bicycle and Pedestrian

Under the No-Build Alternative, no improvements would be constructed for bicycle and pedestrian facilities. Safety would still be a concern, as roadways would not align at right angles, and sidewalks and signals would not be accessible to persons with disabilities or comply with Americans with Disabilities Act.

Traffic Patterns for Residents and Businesses

The No-Build Alternative would not modify existing traffic patterns for residents and businesses.

Construction Period Impacts to the Transportation System

Under the No-Build Alternative, improvements would not be constructed. Therefore, construction period effects to the transportation system do not apply to this alternative.

Both Build Alternatives

The difference between the two build alternatives is in Segments C, D and F. The alignment variations in those segments are considered to be negligible in terms of traffic and circulation; therefore, the impacts identified for the proposed project are considered to be the same under either alternative.

Traffic Operations

The traffic study prepared for this project includes an analysis of traffic conditions in the Year 2030 with construction of the project. Results are presented in Table 2-12.

With implementation of the proposed project, traffic operations would improve. However, even with the implementation of the project, traffic operations at some study intersections would continue to experience unacceptable Level of Service. All roadway segments would be improved to acceptable Level of Service C or better. Two of the 33 study intersections would not exist. The intersection of E. El Monte Way/ J Street and East El Monte Way/ North Villa Avenue would be reconfigured into a single intersection. The intersection of East El Monte Way/Mariposa Street would no longer exist because Mariposa Street would terminate in a cul-de-sac. Sixteen of the 31 intersections would be signalized. Seven of the 16 signalized intersections would operate deficiently during the AM or PM peak period. Four of the 15 unsignalized intersections would continue to have two movements that would experience Level of Service E or F. At all but one of these signalized and one unsignalized intersection (future with project) Level of Service would be the same or slightly better than in the future without project condition.

Overall, traffic operations would be improved from what would occur in the Year 2030 without the project, therefore the project would not result in an adverse effect on transportation.

Table 2-12. Roadway Level of Service for Year 2030 with and without the Project

Location	Section of Roadway	Year 2030 No Improvements				Year 2030 With Project			
		ADT[1]	Peak Hour	Peak Hour Volume	LOS[2]	ADT	Peak Hour	Peak Hour Volume	LOS
Fresno County	Bethel Ave. to Academy Ave.	17,700	AM	1,240	***D***	17,700	AM	1,240	A
			PM	1,771	***E***		PM	1,771	A
	Academy Ave. to Mendocino Ave.	17,300	AM	1,209	***D***	17,300	AM	1,209	A
			PM	1,728	***E***		PM	1,728	A
	Mendocino Ave. to Madsen Ave.	17,300	AM	1,257	***D***	17,300	AM	1,257	A
			PM	1,796	***E***		PM	1,796	A
	Madsen Ave. to Zediker Ave.	18,200	AM	1,326	***D***	18,200	AM	1,326	A
			PM	1,816	***E***		PM	1,816	A
	Zediker Ave. to Smith Ave.	18,200	AM	1,271	***D***	18,200	AM	1,271	A
			PM	1,816	***E***		PM	1,816	A
Tulare County	County line to Rd. 56	19,200	AM	1,497	***E***	19,200	AM	1,497	A
			PM	2,253	***E***		PM	2,253	B
	Rd. 56 to Rd. 72	28,530	AM	2,071	***E***	28,530	AM	2,071	B
			PM	3,099	***F***		PM	3,099	C
City of Dinuba	Rd. 72 to Rd. 80 (Alta Ave.)	27,120	AM	2,340	***E***	27,120	AM	2,340	B
			PM	3,199	***F***		PM	3,199	C

Unacceptable Level of Service is noted in ***bold italics***.
[1] ADT= Average Daily Traffic
[2] LOS= Level of Service

Bicycle and Pedestrian Facilities

The project would improve facilities for bicyclists and pedestrians. Several key intersections would be realigned to form perpendicular angles with El Monte Way. The project would provide shoulders, varying from three to eight-feet-wide, to accommodate bicyclists in the sections of El Monte Way. Raised medians and crosswalks would improve safety for pedestrians crossing El Monte Way near Rose Ann Vuich Park. Sidewalks, curb ramps, and traffic signals (where accessible pedestrian signals are warranted) would be installed in compliance with the American with Disabilities Act. The proposed project would construct improvements to facilities that are currently deficient; therefore, the project would not have an adverse effect on bicycle and pedestrian facilities.

Traffic Patterns for Residents and Businesses

The project would modify some existing traffic patterns. In the City of Dinuba, for example, Mariposa Street would be terminated at J Street, and J Street would be realigned to match North Villa Avenue. Merced Avenue would terminate in a cul-de-sac. Although these modifications would affect residents and businesses immediately adjacent to the project, the overall transportation improvements would benefit the local and regional traffic as congestion would decrease and levels of service would increase. Therefore, the project is not expected to have an adverse affect on traffic patterns for residents and businesses.

Construction Period Effects to the Transportation System

During construction for the proposed project, accessibility for vehicles, bicycles and pedestrians may be affected. Travel lane and/or sidewalk closures may occur during various phases of construction, resulting in detours and temporary traffic delays associated with the construction period.

2.1.6.4 Avoidance, Minimization and/or Mitigation

Both Build Alternatives

Mitigation for Traffic Operations

The traffic study identified that of the intersections expected to operate deficiently under the Year 2030 Plus Project conditions, the intersection of East El Monte Way/Villa Avenue would operate at Level of Service C or better with implementation of basic improvements. Discussions at Project Development Team meetings concluded that basic improvements, additional widening at these intersections, would not be acceptable due to the significant impacts to the community and environment.

No feasible measures are available that would improve all intersections to acceptable Level of Service.

Abatement for Construction Period Effects to the Transportation System

Prior to start of construction, the City shall establish a public outreach/community liaison program to provide a point of contact with residents, businesses, public safety agencies that will be affected by construction utilizing electronic and print media, changeable message signs and other means of public outreach as necessary. To minimize the effects to travelers, a Traffic Management Plan will be prepared. Such strategies might include

- Public Information Campaigns
- Motorist Info
- Incident Management
- Inclusion of Night work for construction activities

2.1.7 Visual Resources

Technical Study Reference: The following discussion is summarized from the *Visual Resource Assessment for the Mountain View Avenue/Avenue 416 Road Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County* (PAR Environmental Services, Inc. 2005).

2.1.7.1 Regulatory Setting

The National Environmental Policy Act establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* and culturally pleasing surroundings [42 U.S.C. 4331(b)(2)]. To further emphasize this point, the Federal Highway Administration in its implementation of the National Environmental Policy Act [23 U.S.C. 109(h)] directs that final decisions regarding projects are to be made in the best

overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, the California Environmental Quality Act establishes that it is the policy of the state to take all action necessary to provide the people of the state "with …enjoyment of aesthetic, natural, scenic and historic environmental qualities." [Public Resources Code Section 2100(b)].

2.1.7.2 Methodology

A visual resource assessment was conducted within and adjacent to the proposed project limits of the Mountain View Avenue/Avenue 416/El Monte Way widening project. The assessment included a review of the scenic goals and policies for Fresno and Tulare counties and the City of Dinuba, site visits and a quantitative assessment of the existing visual environment. The assessment of the visual environment was made based on the presence of unique visual features (such as natural or man-made objects), and the presence or absence of intrusive elements (e.g., billboards, signs, glare, or paved expanses) in the viewshed. The purpose of the visual resource assessment was to document the impacts of the proposed project on the visual environment.
The visual environment is represented by ten viewpoints that were selected within the project corridor. Figures 2-10a through 2-10c provide the locations of these viewpoints. Generally, viewpoints chosen for analysis were those where the potential for visual change due to the project is the greatest. The viewpoints were chosen to represent a mixture of viewers including roadway users or travelers on, and neighbors of, Mountain View Avenue/Avenue 416/El Monte Way. All viewpoints take into consideration both travelers and neighbors that view that area. The viewpoints chosen for analyses represent the views that would be commonly observed by the viewing groups or views that would be observed for long durations, such as would be seen by residents or park users.

2.1.7.3 Affected Environment

The project site is located in the southeastern portion of the San Joaquin Valley where the landscape is characterized by agricultural fields, including orchards, vineyards, row crops and fallow fields. The Sierra Nevada mountain range forms a backdrop to the agricultural landscape, which can provide striking views in the spring and winter months when the air is clear.

In general, the project corridor travels through two distinct visual environments: the rural environment and the urban environment. The land uses surrounding the project area within the unincorporated counties are primarily agricultural lands consisting of row crops, orchards, and vineyards. Irrigation canals and overhead utility lines parallel and cross the roadway in some portions of the project corridor (Figure 2-11 viewpoint 5). Rural residences are scattered along the roadway and often have plantings of trees and shrubs at the property frontage to screen the residences from the roadway (Figure 2-12).
There are also scattered produce packing and processing facilities, and trucking and equipment service businesses along the road. Some of these land uses have frontage landscaping as well (Figure 2-13). At the Kings River Bridge, willow trees and other riparian vegetation can be seen.

In the City of Dinuba, the landscape along the corridor includes commercial structures, residences, and churches on either side of the road. Rose Ann Vuich Park, a nine-acre

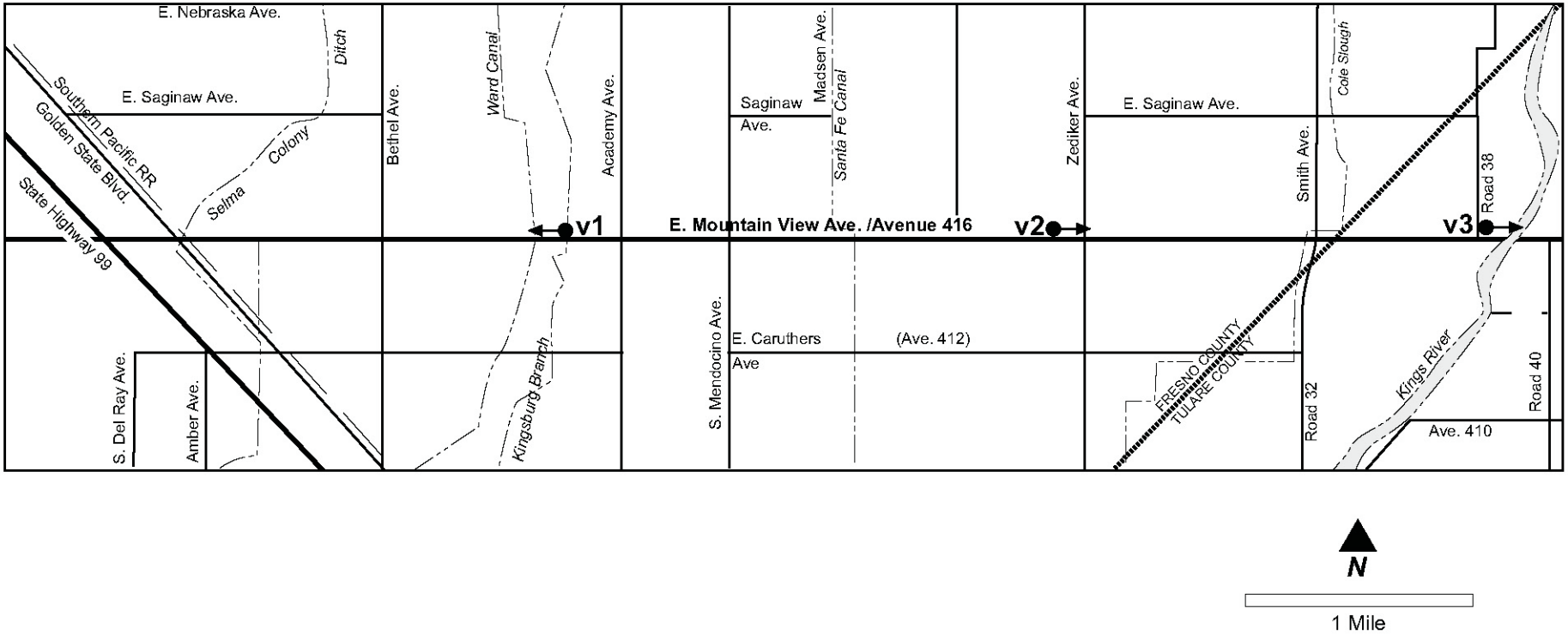


Figure 2-10a. Mountain View Avenue/Avenue 416 Viewpoint Locations, Fresno County and Tulare County

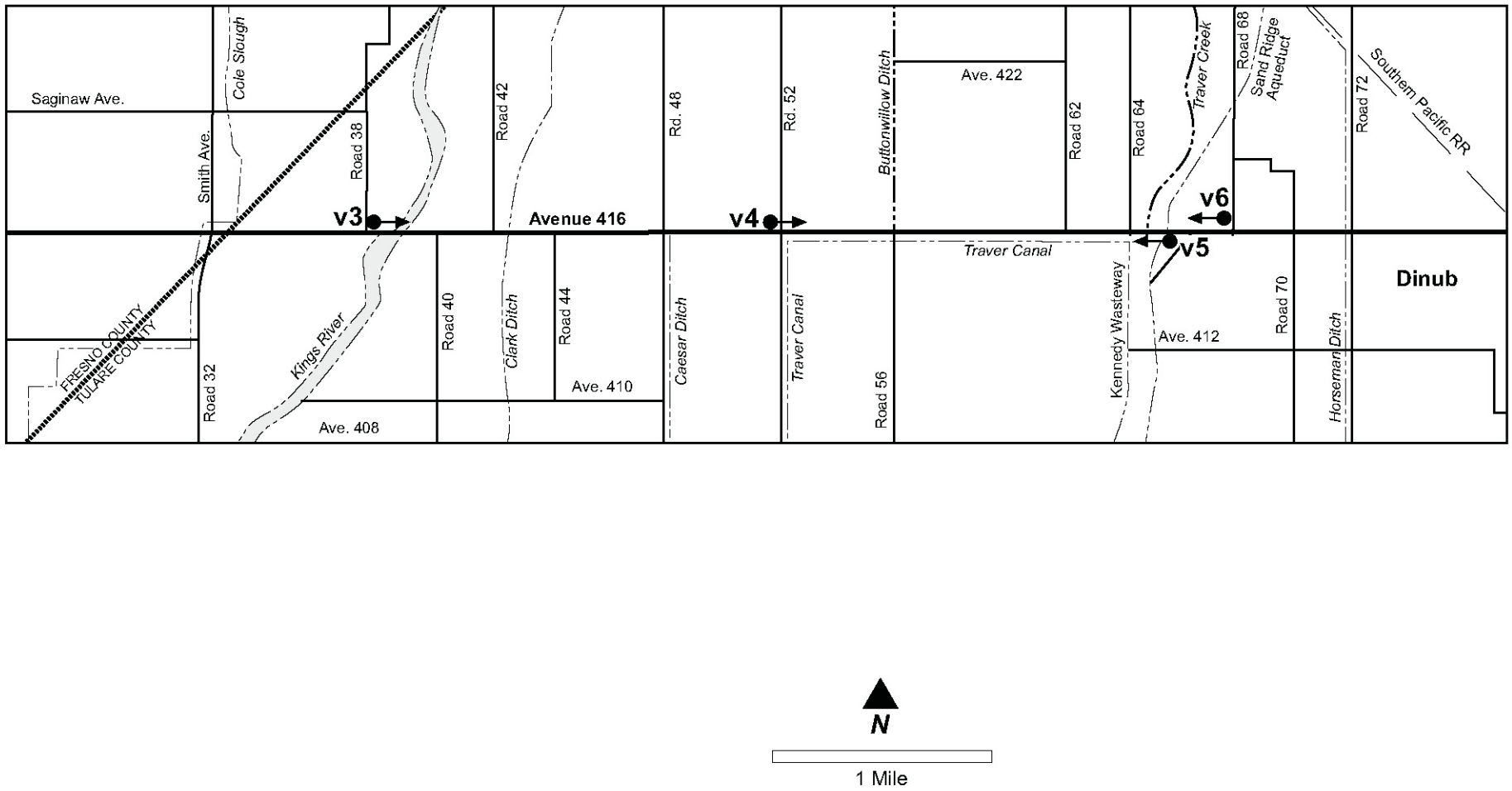


Figure 2-10b. Avenue 416 Viewpoint Locations, Tulare County

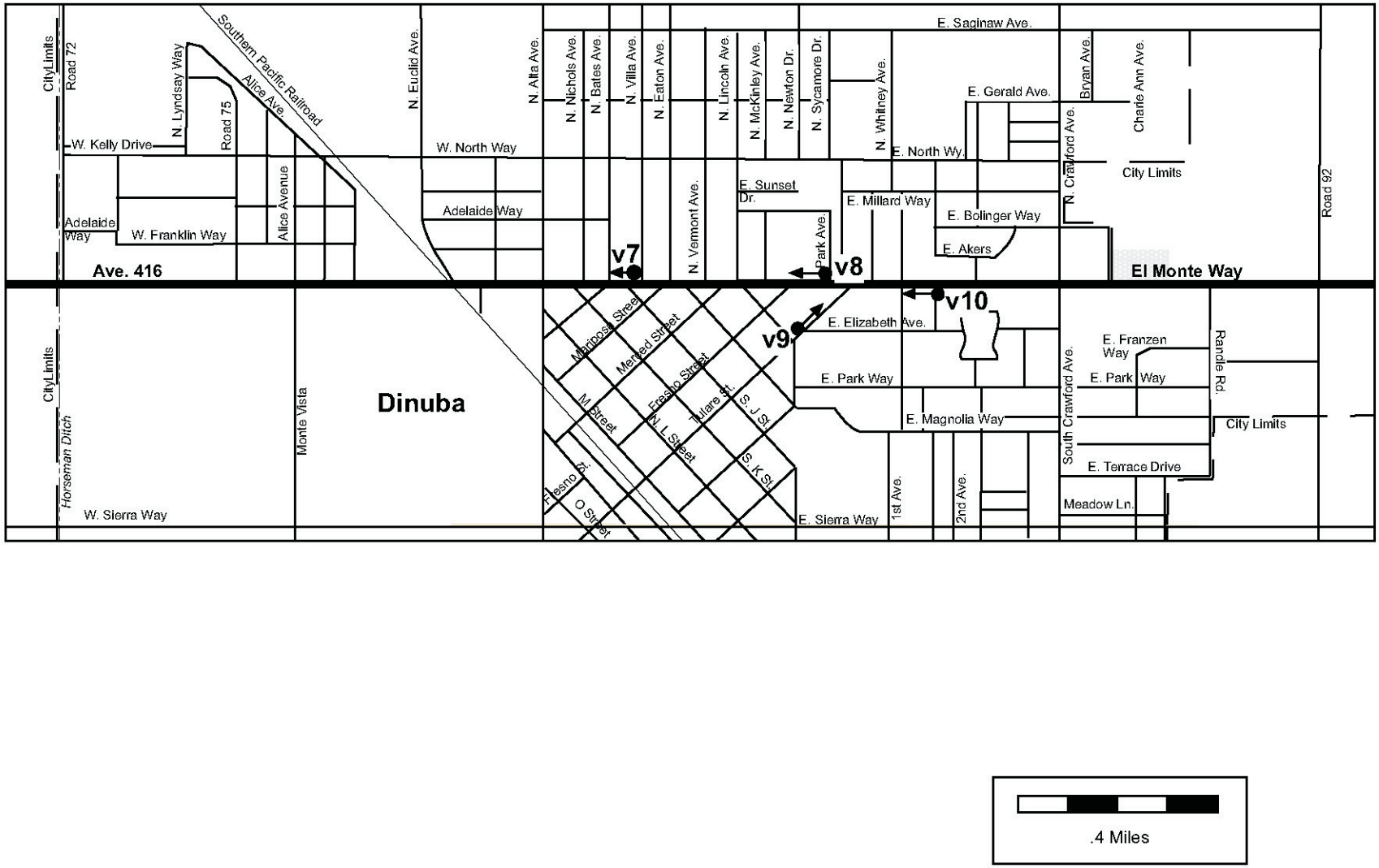


Figure 2-10c. Avenue 416, El Monte Way Viewpoint Locations, Tulare County and City of Dinuba

Figure 2-11. Viewpoint 5 – Segment D
View to the West in the Vicinity of Traver Canal and Avenue 416 in Tulare County

Figure 2-12. Viewpoint 1 – Segment A
View to the West in the Vicinity of the Kingsburg Branch Canal in Fresno County

Figure 2-13. Example of a Vegetation Screen at a Produce Processing Facility on the North Side of Avenue 416 in Tulare County

park with mature trees, turf and a bandshell is located on the north side of the El Monte Way. Residences, overhead utility lines and poles line the road, and sidewalks are present in some portions of the corridor. Landscaping along the corridor includes trees and residential gardens, and landscaping associated with commercial buildings. The eastern boundary of the project is adjacent to agricultural land.

2.1.7.4 Impacts on Visual Resources

Alternatives 1 and 2

Both build alternatives would have the same level of impacts to visual resources. Widening of Mountain View Avenue/Avenue 416 within the rural environment would result in impacts to vineyards, orchards, and row crops, but would not substantially alter the overall character of the visual environment, as agricultural lands would still border the road. The removal of vegetation screens at rural residences and businesses would affect visual quality at some locations since the structures, which are scattered within the project area, would become more visible to roadway users; the roadway would become more intrusive for residents who would have an unobstructed view of the road and passing vehicles. The loss of the screening vegetation would decrease visual quality (Figure 2-14). This effect would occur primarily at residences, but also at some businesses adjacent to Mountain View Avenue/Avenue 416/El Monte Way. Replacement of the Kings River Bridge would cause temporary visual changes due to disturbance of riparian vegetation. Permanent visual changes would occur due to the increased width of the new bridge structure or structures (Figure 2-15).

Just outside of Dinuba, in Segment E, widening of the roadway at the El Monte Village would not affect the existing row of oleanders that screen the first row of mobile homes from the road. (See Figure 2-16).

The visual environment within the City of Dinuba would be affected by this project. In some instances, structures that are currently adjacent to El Monte Way would be removed. In other instances, vegetation screening and landscaping would be removed. This would give neighbors a direct view of El Monte Way and in some cases would create new neighbors with a view of the roadway, which did not previously exist. Travelers on El Monte Way would also notice a change in the visual environment. Structures and landscaping would be removed, and the paved area would be wider. Sidewalks and medians would be added elements to the view. Figure 2-17 illustrates the visual changes that would be caused by removal of structures to the west of City Hall.

Existing

Future

Figure 2-14. Viewpoint 2 – Alternative 1 and Alternative 2, Segment B: View to the East at the Intersection of Mountain View Avenue and Zediker Avenue in Fresno County

Existing

Future

Figure 2-15. Viewpoint 3 – Alternative 1 and Alternative 2, Segment C: View to the East of the Kings River Bridge and Riparian Vegetation in Tulare County

Existing

Future

Figure 2-16. Viewpoint 6 – Alternative 1 and Alternative 2, Segment E: View to the West at the El Monte Village Mobile Home Park in Tulare County

Existing

Future

Figure 2-17. Viewpoint 7 – Alternative 1 and Alternative 2, Segment F: View to the West from City Hall at the Intersection of El Monte Way and N. Villa Avenue in the City of Dinuba

Existing

Future

Figure 2-18. Viewpoint 8 – Alternative 1, Segment F: View to the West of Rose Ann Vuich Park from the Intersection of Park Avenue and El Monte Way in the City of Dinuba

Existing

Future

Figure 2-19. Viewpoint 10 – Alternative 1, Segment F: View to the West from the Intersection of El Monte Way and Snyder Street in the City of Dinuba. Rose Ann Vuich Park and Former Maya Theater are visible in the background.

Alternative 1

Rose Ann Vuich Park would be affected by both build alternatives; however, Alternative 1 would have a greater impact than would Alternative 2. Under Alternative 1, approximately 60 feet of frontage would be required for the north side widening. This widening would remove the first tier of mature trees and landscaping. This would substantially change the visual quality in the vicinity of Rose Ann Vuich Park (Refer to Figures 2-18 and 2-19 which provide a visual simulation for Alternative 1 at Rose Ann Vuich Park and from El Monte Way east of Rose Ann Vuich Park).

Alternative 2

Alternative 2 would have a minor impact on Rose Ann Vuich Park; primarily the right-of-way widening would allow for installation of a sidewalk along the park frontage and would have only minor impacts on landscaping (Figure 2-20). Alternative 2, widens to the south and would therefore, require removal of the former Maya Theater (now a church) and the landscaped island in front of the theater at the intersection of El Monte Way and Tulare Avenue (refer to Figure 2-21). This alternative would also remove the Christ Believers Church, another large structure located on the south side of El Monte Way. The removal of these structures would result in a change in visual quality in the project corridor.

2.1.7.5 Avoidance, Minimization and/or Mitigation Measures

Rural Sections in Fresno County and Tulare County (Segments A, B, C, D and E)

The following measures would be required to minimize impacts to visual resources.

1. Expansion of the road right-of-way will remove existing landscaping located along Avenue 416. The project proponent shall compensate private property owners for property damages resulting from the removal of landscaping as a result of the project. This would give property owners the option to re-install landscaping if desired.

2. A riparian/wetland restoration plan shall be prepared for the Kings River Bridge area. Required contents of the plan are described in the Draft Mitigation Plan (PAR Environmental Services, Inc. 2007c) for Biological Resources. Results of the restoration plan would reduce visual impacts resulting from the proposed project at the Kings River Bridge area.

Because the general visual environment along these alignments is agricultural, and the project would not change the overall visual character of the area, these mitigation measures are expected to reduce impacts to acceptable levels.

Existing

Future

Figure 2-20. Viewpoint 8 – Alternative 2, Segment F: View to the West of Rose Ann Vuich Park from the Intersection of Park Avenue and El Monte Way in the City of Dinuba

Existing

Future

Figure 2-21. Viewpoint 10 – Alternative 2, Segment F: View to the West from the Intersection of El Monte Way And Snyder Street in the City of Dinuba. Rose Ann Vuich Park is visible in the background. The former Maya Theater is removed.

City of Dinuba, Both Alternatives (Segment F)

A landscape plan shall be prepared as part of the project design (refer to Avoidance, Minimization and/or Mitigation Measures for Parks and Recreation Facilities). The landscape plan shall be subject to review and approval of the City of Dinuba Parks and Recreation Director.

The landscape plan shall be consistent with the following:

1. The City of Dinuba General Plan Open Space, Conservation and Recreation Element require that any trees removed within the City of Dinuba be replaced with tree species specified on the City's Street Tree Master Plan.

2. Landscaping added to areas considered gateways into the City of Dinuba shall help to enhance these gateways. One such gateway is the El Monte Way/Alta Avenue intersection, which is identified in the City of Dinuba General Plan Urban Boundary Element. The Community Development Element provides guidelines for these gateways which shall be followed.

    a. Gateway treatments should include some or all of the following elements: structures, special landscaping and signs. The City of Dinuba and the County of Tulare shall cooperate in designing Gateway treatments.
    b. Gateways to the downtown area shall be well marked.

3. The Community Design Element of the City of Dinuba General Plan gives guidelines to landscaping along the city's streets. The following guidelines shall be followed:

    a. Tree wells should be located and designed to maintain views for traffic and pedestrian safety.
    b. All signs shall be compatible with the overall streetscape design including the redesign/removal of signs that are disruptive elements.
    c. No new outdoor advertising shall be allowed on Alta Avenue or El Monte Way within the limits of the urban area boundary.
    d. Establish coordinated and distinctive signage, accent plantings and paving materials for entries into the city at Alta Avenue and El Monte Way.

4. Within the City of Dinuba the landscape plan shall provide for landscaping in medians where median widths can accommodate landscaping and on remnant parcels that remain in public ownership.

2.1.8 Cultural Resources

Technical Study Reference: This section is summarized from the *Historic Properties Survey Report For The Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue In Fresno County To Road 92 In Tulare County* including the *Historic Resources*

Evaluation Report and the *Archaeological Survey Report* (PAR Environmental Services, Inc. 2004).

2.1.8.1 Regulatory Setting

"Cultural resources" as used in this document refer to all historical and archaeological resources, regardless of significance. "Historic properties" are cultural resources that are listed in, or determined eligible for listing in, the National Register of Historic Places. Laws and regulations dealing with cultural resources include the following:

The National Historic Preservation Act of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations 800). On January 1, 2004, a Section 106 Programmatic Agreement among the Advisory Council, FHWA, State Historic Preservation Officer, and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The Programmatic Agreement implements the Advisory Council's regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA's responsibilities under the Programmatic Agreement have been assigned to Caltrans as part of the Surface Transportation Project Delivery Pilot Program (23 Code of Federal Regulations 773) (July 1, 2007).

Historic properties may also be covered under Section 4(f) of the United States Department of Transportation Act, which regulates the "use" of land from historic properties. See Appendix B for specific information regarding Section 4(f). Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and Housing and Urban Development in developing transportation projects and programs which use land protected by Section 4(f).

Historical resources are considered under the California Environmental Quality Act as amended 2005, as well as California Public Resources Code Section 5024.1, which established the California Register of Historical Resources. Section 5024 of the Public Resources Code requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way.

The California Environmental Quality Act Section 15064.5 also addresses historic resources. This section identifies a project that may have an effect on a property eligible for inclusion in the California Register of Historical Resources as a project that may have a significant effect upon the environment.

2.1.8.2. Affected Environment

The *Finding of Effect for the Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue in Fresno County to Road 92 in Tulare County, California* was completed by PAR Environmental Services, Inc. in May 2005 and received concurrence by the State Historic Preservation Officer in October 2007. The following section summarizes the findings in the *Historic Properties Survey Report for the Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue in Fresno County to Road 92 in Tulare County, California* completed in October 2004 (PAR Environmental Services, Inc. 2005e).

Methodology

The study area was established and archival research and field investigations were undertaken. The field investigations of architectural and linear resources within the proposed Mountain View Avenue/Avenue 416/El Monte Way Widening Project study area were conducted between November 26 and December 5, 2001, between April 15 and April 18, 2002, April 11 and 12, 2003, and January 13 and 14, 2004.

The archival research effort was directed toward identifying potential and previously recorded cultural resources within or near the project site and gathering pertinent data regarding prehistoric, ethnographic and historic land use and development of the project area. Several repositories were consulted during this effort including local historical societies; the California State Library, local libraries and libraries associated with colleges and universities; local museums; local, state and federal resource agencies; and local residents and experts. Records at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System (CHRIS) were searched at the request of PAR Environmental Services, Inc. for information related to the project site, as were PAR Environmental Services, Inc.'s in-house archives and library. Documents consulted included previous cultural resource studies and historic maps. The Native American Heritage Commission, local tribes, and Native American individuals referred by the National American Heritage Commission or tribes were contacted by letter and telephone regarding ethnographic information, sacred sites, and concerns. Refer to the *Historic Resources Evaluation Report* for a complete description of archival research methods including documents consulted and individuals and organizations contacted.

2.1.8.3 Area of Potential Effects Description

An Area of Potential Effects map of the project was approved and signed by Federal Highway Administration Engineer Steve Healow, and California Department of Transportation Environmental Branch Chief Kirsten Helton, on May 2, 2002, as well as Tulare County Project Manager Kunabalan Muthusamy on May 9, 2002. A revised Area of Potential Effects map with new project additions was signed by Tulare County Project Manager Marcia F. Vierra on May 3, 2004 and by Caltrans Professionally Qualified Staff Kelly Hobbs and Caltrans District Local Assistance Engineer Mary Johnson on May 10, 2004.

Archaeological Area of Potential Effects

The archaeological Area of Potential Effects for this project follows the same boundaries as the maximum proposed right-of-way for the project, which includes the maximum area of direct impact for the project, existing right-of-way for all build alternatives, and concession for temporary construction easements, road intersection improvements, grading areas and equipment staging areas.

The archaeological Area of Potential Effects begins approximately 685 feet west of Bethel Road and extends eastward for approximately 12 miles, ending about 690 feet east of Road 92 in Tulare County. The archaeological Area of Potential Effects also extends north and south along roads 48, 56 and 72 to accommodate curves or taper lanes and intersection improvements as follows:

- Road 48 Area of Potential Effects extends 1,000 feet north and 300 feet south;
- Road 56 Area of Potential Effects extends 1,700 feet north and 1,750 feet south;
- Road 72 Area of Potential Effects extends 2,700 feet north and 2,000 feet south

The proposed five-acre site of the El Monte-Euclid drainage detention basin on Road 72 on the west side of the City of Dinuba and the 3.3-acre site of the proposed expansion of the existing Crawford-Olive drainage basin on the east side of the City of Dinuba are also included in the archaeological Area of Potential Effects.

Architectural Area of Potential Effects Description

The architectural Area of Potential Effects includes the archaeological Area of Potential Effects area with the addition of all architectural properties to the north and south sides on Mountain View Avenue/Avenue 416/El Monte Way and to the east and west sides of Roads 48, 56, and 72 within the Area of Potential Effects. Typically, the architectural Area of Potential Effects includes the entire assessor's parcel that the architectural resource lies within. However, there are a few parcels with architectural resources that have been determined adequately distant from the maximum proposed right-of-way so as to not be affected, visually or otherwise, by the proposed project; in such cases, the architectural Area of Potential Effects does not include the distant architectural resource and, therefore, does not include the entire parcel.

2.1.8.4 Archaeological Resources Identified

No significant or eligible archaeological resources were identified within the Area of Potential Effects defined for the project.

2.1.8.5 Architectural Resources Identified

The six National Register of Historic Places eligible properties include the Maya Theater (Resource No. 32), Windsor Christian Academy (Resource No 166), and four residences. The Maya Theater and Windsor Christian Academy meet Criteria A and C for eligibility to the National Register of Historic Places at a local level for their association with important events in

Dinuba's regional history and for their architecture. The other properties meet Criterion C (architecture) at a local level of significance. The residential properties eligible for the National Register of Historic Places represent styles that are rare or notable within the City of Dinuba or outlying rural areas. They consist of a French Eclectic-style house and garage (Resource No. 22), Mission Revival-style house (Resource No. 227), Craftsman-style house (Resource No. 152) and a farmstead with a Queen Anne-style house (Resource No. 156). These six properties are listed in Table 2-13 and their eligibility is summarized below; detailed property descriptions and evaluations are documented on the appropriate State of California Department of Parks and Recreation forms that are located in Attachment B of the *Historic Resources Evaluation Report* prepared for the project (PAR Environmental Services, Inc. 2004).

Table 2-13. Eligible National Register of Historic Places and California Environmental Quality Act Properties

Ref. No.	Name/Address	APN	Property Type	National Register of Historic Places Criteria/ Significant Date	Year Built
22	Woodhouse Residence (French Eclectic-style house) 1378 East El Monte Way, Dinuba	018-022-001	Residential	C 1925	ca. 1925
32	Former Maya Theatre Tulare & East El Monte Way, Dinuba	018-011-007	Commercial movie theater	A 1950 C 1940	ca. 1940
152	Levis House (Craftsman-style house) 14252 E. Mountain View Avenue, Kingsburg	393-083-32	Residential	C 1910-1925	ca. 1910
156	Nelson Estate (Queen Anne-style house) 15040 E. Mountain View Avenue, Kingsburg	393-090-70	Residential	C 1900	1900
166	Former Windsor Christian Academy 5018 Avenue 416, Reedley	012-160-031	Educational	A 1923-1960 C 1923	1923
227	Nichols House (Mission Revival-style house) 179 East El Monte Way, Dinuba	014-061-016	Residential	C 1907	1907

The five properties that qualify as historical resources for the purposes of the California Environmental Quality Act include a Tudor Revival-style house (Resource No. 17), Colonial Revival-style house (Resource No. 139), Spanish Eclectic-style residence (Resource No. 158), a Folk Victorian-style house (Resource No. 233) and a Prairie-style residence (No. 259). Resource No.'s 17, 139, 158 and 259 meet the California Environmental Quality Act Guidelines Section 15064.5a3C for their architecture. Resource No. 233 is considered an historical resource under the California Environmental Quality Act Guidelines Section 15064.5a3B for its association with Dr. William Whittington, distinguished lung doctor and a past leader in the local Dinuba

community. These properties are summarized in Table 2-14; effects on these properties are addressed in Chapter 3.

Table 2-14. Historical Resources for the Purposes of California Environmental Quality Act

Ref. No.	Name/Address	APN	Property Type	CEQA Criteria/ Sig. Date	Year Built
17	Giuste Residence (Tudor Revival-style house) 1496 East El Monte Way, Dinuba	018-023-025	Residential	15064.5a3C 1922	ca. 1922
139	Olson Estate (Colonial Revival-style house) 12408 E. Mountain View Avenue, Kingsburg	393-072-20	Residential	15064.5a3C 1905	1905
158	McNab Residence (Spanish Eclectic-style house) 15468 E. Mountain View Avenue, Kingsburg	393-090-65	Residential	15064.5a3C 1941	1941
233	Whittington House (Folk Victorian-style house) 395 East El Monte Way, Dinuba	014-163-012	Residential	15064.5a3B 1904-1925	1904
259	Bolinger House (Prairie-style house) 1375 East El Monte Way, Dinuba	014-243-015	Residential	15064.5a3C 1918	ca. 1918

2.1.8.6 Impacts on Cultural Resources

Both build alternatives affect National Register of Historic Places and the California Environmental Quality Act cultural resources. Right-of-way acquisition will be required from most of these properties. The amount and degree of impacts vary by alternative. (The five properties that only qualify as historical resources for the purposes of the California Environmental Quality Act are addressed in Chapter 3.)

Both build alternatives would result in a "use" of Section 4(f) resources as defined by the Department of Transportation Act of 1966. Refer to Appendix B for the Section 4(f) Evaluation.

Alternative 1

Alternative 1 would result in a partial take of four properties that are eligible for the National Register of Historic Places and would result in a complete take of one property eligible for the National Register of Historic Places (Table 2-15).

Table 2-15. Impacts to Eligible National Register of Historic Places and California Environmental Quality Act Properties – Alternative 1

Ref. No.	Name/Address	APN	Segment	Impact (square feet)
152	Levis House (Craftsman-style house) 14252 E. Mountain View Avenue, Kingsburg	393-083-32	B	85,344 (Complete take)
156	Nelson Estate (Queen Anne-style house) 15040 E. Mountain View Avenue, Kingsburg	393-090-70	B	36,224
166	Former Windsor Christian Academy 5018 Avenue 416, Reedley	012-160-031	C	0
22	Woodhouse Residence (French Eclectic-style house) 1378 East El Monte Way, Dinuba	018-022-001	F	496
32	Former Maya Theatre Tulare & East El Monte Way, Dinuba	018-011-007	F	92
227	Nichols House (Mission Revival-style house) 179 East El Monte Way, Dinuba	014-061-016	F	3,374

Widening the road to the north in front of the Levis House would result in expansion of the roadway to the front of the structure. In light of the zero setback, the project proponent proposes to acquire and remove the property. The loss of the Levis House (Assessor's parcel number 393-083-32) would be a significant impact and is considered an Adverse Effect under Section 106 of the National Historic Preservation Act.

Alternative 1 would take only a small strip of lawn from the Woodhouse Residence (018022001) and a few feet of frontage from the Maya Theater. Neither take would affect those characteristics of the properties that contribute to their importance and would result in a No Adverse Effect finding.

Widening of E. Mountain View Avenue in front of the Nelson Estate (39309070) would result in removal of a line of evergreen trees that front Mountain View Avenue. These trees are modern additions to the property and do not contribute to its significance. Contributing vegetation is contained within the fenced property surrounding the house and will not be affected. Therefore, removal of the modern row of evergreen trees would result in a No Adverse Effect.

The Nichols House (014061016) within the City of Dinuba will lose a portion of the U-shaped driveway that provides access to the house. The house will not be affected. The loss of a portion of the driveway and lawn area is not considered an adverse effect because the majority of the U-shaped drive will remain in place and the overall setting and design of the house will remain unaffected.

All of the properties would experience temporary construction easements at the merging of the driveways with Mountain View Avenue/Avenue 416/El Monte Way. These impacts are temporary in nature and would not affect the setting, design, vegetation or other elements that contribute to National Register of Historic Places eligibility. These temporary construction impacts would result in a No Adverse Effect finding under Section 106.

Alternative 2

Alternative 2 would result in the same impacts to National Register of Historic Places properties as Alternative 1 with the addition of the Maya Theater. Under Alternative 2, the Maya Theater would be acquired and removed. Loss of the Maya Theater would be considered an Adverse Effect under Section 106 of the National Historic Preservation Act.

2.1.8.7 Avoidance, Minimization and/or Mitigation Measures

Alternative 1

Levis House

The Levis House is eligible for its architectural merit. Under Alternatives 1 and 2 the road would be widened to the house, resulting in its acquisition and removal. This is considered an Adverse Effect.

1. Prior to moving or demolishing the house, Caltrans shall ensure, in consultation with FHWA and the State Historic Preservation Officer, that the Tulare County Resource Management Agency provides documentation of the structure for the historical record, using a modified Historic American Building Survey/Historic American Engineering Record format. At minimum, the documentation shall include clear photographs using 35 mm black and white film printed in 4-inch by 6-inch format of all sides of the structure, details of unique or representative construction features, interior detailing, and written account of any history of the structure. Overviews of the property capturing its setting and vegetation shall also be provided. Upon approval by the State Historic Preservation Officer, the documentation shall be filed with the State Office of Historic Preservation, Southern San Joaquin Valley Information Center of the California Historical Resources Information System (CHRIS), the Fresno County Library's California History and Genealogy Room in Fresno, the Annie Mitchell Room of Tulare County Public Library in Visalia, the California State University's Henry Madden Library, Special Collections in Fresno, the California Room of the California State Library in Sacramento, and California Department of Transportation, District 06, Fresno.

Nichols House

The setting of the Nichols house has already been compromised. Widening of the road would retain the horseshoe shape of the driveway, although a portion of the lawn would be removed.

1. If existing vegetation that contributes to the setting of the property, other than the lawn, is removed then new vegetation should be planted within the new parcel boundary. This vegetation should be the same species as that removed and planted in a one to one ratio.

Minimal impacts (refer to Table 2-15) would occur to the Mission Revival-style house (Nichols House). These impacts were found to have no adverse effect on the historic site. The Nichols House is covered under the De Minimus Section 4(f) Evaluation that was prepared by the California Department of Transportation, District 06, in 2007.

Woodhouse Residence

The French Eclectic-style house and garage (Woodhouse Residence) would be impacted by the project; however, these affects would be minor and were found to have no adverse effect on the property (refer to Table 2-15). This historic site is covered under the De Minimus Section 4(f) Evaluation that was prepared by the California Department of Transportation, District 06, in 2007.

Nelson Estate

Removal of the modern row of evergreen trees is not a significant impact. If project plans change and historical vegetation within the fenced area surrounding the house is compromised, then Mitigation Measure 1, described above for the Nichols House should be implemented.

Alternative 2

Under Alternative 2, impacts to the Levis House, Nichols House and Nelson Estate are the same as that described for Alternative 1, and mitigation measures described for Alternative 1 apply. In addition, Alternative 2 would result in a loss of the former Maya Theater, a National Register of Historic Places property eligible under Criteria A and C.

Maya Theater

1. To mitigate for the loss of local Hispanic history (Criterion A) associated with the former Maya Theater, the project proponent should prepare a three-fold or similar pamphlet, in consultation with the State Historic Preservation Officer, Caltrans and FHWA, describing the history of the Maya Theater, illustrated with contemporary and historic photographs. This pamphlet should focus on the importance of the theater to the Hispanic community and should be produced in both English and Spanish. A minimum of 2,500 copies of the pamphlet should be produced for distribution at City of Dinuba public offices, local libraries, Hispanic organizations, the Alta Historical Society, Annie Mitchell Room of the Tulare County Public Library in Visalia, and the local Chamber of Commerce. The pamphlet shall also be provided in electronic format at appropriate World Wide Web addresses associated with the City of Dinuba and its historical resources. One copy of the pamphlet in each language shall be filed with the State Historic Preservation Officer, the Southern San Joaquin Valley Information Center, the California History Section of the State Library, the Bancroft Library at University of California, Berkeley, Special Collections at California State University Fresno, and Caltrans.

2. Prior to demolishing the theater, Caltrans shall ensure, in consultation with FHWA and the State Historic Preservation Officer, that the project proponent provides documentation of the structure for the historical record, using a modified Historic American Building Survey/Historic American Engineering Record format. At minimum, the documentation shall include clear photographs using 35 mm black and white film printed in four-inch by six-inch format of all sides of the structure, details of unique or representative construction features (for example, the marquee and ticket booth), interior detailing and seating arrangements, and a written account of the history of the structure. Upon approval by the State Historic Preservation Officer, the documentation shall be filed with the State Office of Historic Preservation, Southern San Joaquin Valley Information Center of the California

Historical Resources Information System (CHRIS), the California State University's Henry Madden Library, Special Collections in Fresno, the Alta Historical Society, the local library in the City of Dinuba, the Annie Mitchell Room of the Tulare County Public Library in Visalia, the California Room of the California State Library in Sacramento, and California Department of Transportation, District 06, Fresno.

Historic Properties-California Environmental Quality Act-Alternatives 1 and 2

McNab Residence

1. Both alternatives would result in the road being widened to the front of the McNab Residence, resulting in a zero setback and complete take of the McNab Residence, a property important for its architecture. The project proponent shall complete mitigation measures 1, 2, and 3, described above for the Levis House. Because the McNab Residence is important only under the California Environmental Quality Act, consultation with SHPO is not required prior to removal.

Whittington Residence

1. Mitigation measure 1, described above, shall be applied to this property. In addition the following measure is provided to mitigate for the loss of Dr. Whittington affiliated property.

2. To mitigate for the loss of Dr. Whittington's history (Criterion 2) associated with the property, the project proponent should prepare a pamphlet, in consultation with the State Historic Preservation Officer and Caltrans, describing the role Dr. Whittington played in the development of medicine in Dinuba, illustrated with contemporary and historic photographs of the man and his house. A minimum of 500 copies of the pamphlet should be produced for distribution at City of Dinuba public offices, local libraries, the Alta Historical Society, Tulare Public Library History Section in Visalia, and the local Chamber of Commerce. The pamphlet shall also be provided in electronic format at appropriate World Wide Web addresses associated with the City of Dinuba and its historical resources. One copy of the pamphlet in shall be filed with the State Historic Preservation Officer, the Southern San Joaquin Valley Information Center, the California Section of the State Library, the Bancroft Library at University of California, Berkeley, Special Collections at California State University Fresno, and Caltrans.

Bolinger House

1. The project proponent shall relocate the iron fence along the new property boundaries, in consultation with the State Historic Preservation Officer and Caltrans. If the existing fence cannot be reused, then the removed section of the iron fence shall be replaced with identical fencing to retain the setting of the landscaping.
2. Vegetation removed along the fence within the exiting property shall be replanted in association with the property fence along the new parcel boundary. If this is not possible, then the trees and shrubs that are removed from the proposed right-of-way will be replaced in kind using a four-to-one replacement ratio.

2.1.8.8 Impacts on Archaeological Sites

There are no identified significant or eligible archaeological resources within the Area of Potential Effects defined for the project. Both alternatives require replacement or modification of the Kings River Bridge, an area considered moderate to high sensitivity for prehistoric cultural resources.

Mr. Lalo Franco, Cultural Resource Monitor for the Santa Rosa Rancheria, expressed concern over the cultural resource sensitivity of the banks of the Kings River. Mr. Franco requested the presence of archaeological and Native American monitors during construction activities on the behalf of the Rancheria.

Due to comments received by the Native American community and the State Historic Preservation Officer, Caltrans and the County of Tulare have chosen, pursuant to 36 Code of Federal Regulations Section 800.4(b)(2), to continue the final identification and evaluation of historic properties by implementing the Deferred Identification Plan in the area along the Kings River. If the result of the Deferred Identification Plan is negative, then the area along the Kings River shall be given no further consideration. If, alternately, the results of the Deferred Identification Plan are positive, the identified resource(s) shall be treated in accordance with 36 Code of Federal Regulations 800.13 – Post-review Discoveries.

Avoidance, Minimization and/or Mitigation Measures

1. If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
2. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission who will then notify the Most Likely Descendent. At this time, the person who discovered the remains will contact Tulare County so that they may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.
3. Archaeological and Native American monitoring will be conducted during construction of the bridge abutments and all other ground disturbing work along the riverbanks.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

Technical Study Reference: This section is summarized from the *Draft Location Hydraulic Study, Mountain View Avenue/Avenue 416/El Monte Way Widening Project* (*Existing Bridge No. 46C-027)*, prepared by Quincy Engineering, Inc. (March 3, 2004).

2.2.1.1 Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 Code of Federal Regulations 650 Subpart A.

To comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments
- Risks of the action
- Impacts on natural and beneficial floodplain values
- Support of incompatible floodplain development
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

The base floodplain is defined as "the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year." An encroachment is defined as "an action within the limits of the base floodplain."

2.2.1.2 Affected Environment

Description of Project Hydrology

Location of the Project Relative to Designated Floodways

There are two separate floodways identified by the Federal Emergency Management Agency that intersect with the Mountain View Avenue/Avenue 416/El Monte Way roadway alignment. According to the Federal Emergency Management Agency Flood Insurance Rate Map panel number 06019C2700F, in Fresno County, there is no designated floodway west of the Kings River. The Kings River Floodway in Tulare County was evaluated in Federal Emergency Management Agency's Flood Insurance Study for Tulare County, California, Unincorporated Area, Community Number 065066 (October 1998). Federal Emergency Management Agency's Flood Insurance Rate Map panel number 065066 0260 B identifies flood zones A and B for the Kings River Floodway, which crosses under the Kings River Bridge along Avenue 416.

Kings River Floodway

The contributing watershed basin is located in the western slopes of the central Sierra Nevada mountain range and receives water from the Tulare sink, San Joaquin Valley. The basin area is approximately 1,800 square miles and is regulated by Pine Flat Reservoir. The highest elevation is approximately 300 feet near the Kings River Bridge.

The stream channel is a medium-size, meandering, and well-defined river. The streambed is a wide, flat, and highly alluvial sand bed. The stream banks are steep, well-defined loam and colluviums with heavy growth of grasses, brush and trees. The Kings River at the project location experiences infrequent floods, which are substantially regulated by the Pine Flat

Reservoir. No reports were found recording damage to structures in the vicinity of Avenue 416 in Tulare County after construction of the Pine Flat Dam.

Special Flood Hazard Area in Dinuba

The City of Dinuba Flood Insurance Study covers all incorporated areas of Dinuba, based on 1982 conditions and summarizes evaluations of several flood events prior to that year. The two primary sources of flooding within Dinuba were identified as overflows or breakouts from the Alta East Branch Canal and runoff from the local watershed. Flooding in Dinuba was characterized as shallow flooding, with average depths of three feet or less. The Flood Insurance Study describes a 12-square-mile watershed contributing to an estimated 1,850 cubic feet per second flow during a 100-year peak discharge. Since the flooding in Dinuba is limited to shallow flooding, the Flood Insurance Study concluded that the concept of a floodway does not apply to Dinuba and therefore has identified the areas of flooding in Dinuba as "Special Flood Hazard Areas."

2.2.1.3 Impacts on Hydrology and Floodplains

No-Build Alternative

The No-Build Alternative would not alter the existing conditions and therefore would have no effect on hydrology or flooding.

Bridge Design Options 3 and 4

The Location Hydraulic Study contains the following conclusions regarding the project:

Kings River Floodway

The hydraulic characteristics of the river flows at the Kings River Bridge were evaluated using the Army Corps of Engineers' HEC-RAS backwater program (Quincy Engineering, Inc. 2004). The program was used to examine river flows with the existing bridge in place (No-Build Alternative) and the river flows with the proposed replacement bridge or bridges in place, addressing all bridge replacement design options. Kings River Bridge Design Options 3 and 4, which would remove the existing bridge and replace it with either a new single-span or double-span bridge, would result in optimal span lengths (decreasing the number of bridge supports compared to the existing bridge) and thus would not affect the Federal Emergency Management Agency Base Flood water surface elevations. For these two bridge design options, the proposed project would not be required to implement flood risk mitigation and/or Federal Emergency Management Agency Letter of Map Revision requirements. The proposed replacement of the bridge at the Kings River will not change the ability of the Kings River to traverse (pass under) Avenue 416, since the existing Kings River Bridge is already within the floodplain. The proposed project would not increase the likelihood of road closures or other restrictions to emergency vehicle access, evacuation access, school bus or mail route access due to flooding.

Both Build Alternatives

Special Flood Hazard Area in Dinuba

The City of Dinuba adopted a Storm Drainage Master Plan in June of 1989. The City of Dinuba Drainage Master Plan established a two-year return storm event as the basis for evaluating Dinuba's drainage facilities. As part of the Mountain View Avenue/Avenue 416/El Monte Way widening project, a preliminary drainage report was prepared by Quincy Engineering, Inc., which identifies proposed drainage facilities within the City of Dinuba that are designed to meet the City of Dinuba's standards of handling a two-year return storm event. Therefore, the proposed action is anticipated to have a neutral impact on the areas identified by Federal Emergency Management Agency within the flood zone limits of the Special Flood Hazard Area of Dinuba. The current hydraulic conditions of the 100-year and 500-year flood events would be unaffected by the proposed action in Dinuba. The proposed project would not increase the likelihood of road closures or other restrictions to emergency vehicle access, evacuation access, school bus or mail route access due to flooding.

2.2.1.4 Avoidance, Minimization and/or Mitigation Measures

No measures are required for avoidance, minimization and/or mitigation.

2.2.2 Water Quality and Storm Water Runoff

2.2.2.1 Regulatory Setting

Section 401 of the Clean Water Act (CWA) requires water quality certification from the State Water Resources Control Board (SWRCB) or from a Regional Water Quality Control Board (RWQCB) when the project requires a CWA Section 404 permit from the U.S. Army Corps of Engineers to dredge or fill within a water of the United States.

Along with CWA Section 401, CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the NPDES program to the SWRCB and nine RWQCBs. The SWRCB and RWQCB also regulate other waste discharges to land within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act.

The SWRCB has developed and issued a statewide NPDES permit to regulate storm water discharges from all Department activities on its highways and facilities. Department construction projects are regulated under the Statewide permit, and projects performed by other entities on Department right-of-way (encroachments) are regulated by the SWRCB's Statewide General Construction Permit. All construction projects over 1 acre requires a Storm Water Pollution Prevention Plan (SWPPP) to be prepared and implemented during construction. Department activities less than 1 acre require a Water Pollution Control Program.

2.2.2.2 Affected Environment

Some water ways, such as Buttonwillow Ditch, Ward Canal and the Kings River are modified channels of natural drainages. Most of the irrigation canals begin in the Kings River, either through the Alta Main Canal serving the area south of the Kings River or the Consolidated Canal that serves farmlands north of the Kings River. The remaining water conveyed by these canals eventually returns to the Kings River either directly or via other canals. Some of the canals such as the Kingsburg Branch and the Santa Fe Canal only serve as irrigation water conveyances and end in farmland (PAR Environmental Services, Inc. 2007b).

The Ward Canal and Kingsburg Branch are the main irrigation and drainage canals in the Fresno County portion of the project.

In Tulare County (Segments C and D), between the County Line and Road 64, the Cole Slough Canal, Kings River, and Clark Ditch are the main waterway and irrigation and drainage canals that cross Avenue 416 in this portion of the project. Additionally, the Traver Canal parallels the south side of Avenue 416 and crosses under Avenue 416 in Segment D.

Between Road 64 and Road 72 (Segment E) in Tulare County, the Sand Ridge Ditch crosses Avenue 416 in this section of the project. In Segment F, within the City of Dinuba, the Dinuba Town Ditch crosses El Monte Way just west of the Union Pacific Railroad tracks in this segment.

2.2.2.3 Impacts on Water Quality and Storm Water Runoff

Both Build Alternatives

Construction work in or near the waters of the Kings River could result in increased sediment loads, turbidity, and siltation if soils entered the water, or if heavy equipment operates in the stream channel. Increased sedimentation could adversely affect fish and other aquatic resources, as could the accidental introduction of washwater, solvents, oil, chemical wastes, cement, or other pollutants. These potential impacts are essentially the same for both build alternatives. In addition to construction-related impacts, water quality in the Kings River could be adversely affected if additional untreated roadway runoff flows directly to the river. Adverse water quality impacts could also occur in the course of construction within the irrigation canals, as many of these canals flow to the Kings River. These potential water quality impacts will be avoided or minimized by implementing mitigation measures described below (PAR Environmental Services, Inc. 2007b, Rincon 1998).

2.2.2.4 Avoidance, Minimization and/or Mitigation Measures

1. For Storm water quality protection, the Department has a Storm Water Management Plan (SWMP) to reduce or eliminate pollutants in runoff discharging to drainage conveyances and waterways. The SWMP is the framework for developing and implementing guidance to meet permit requirements for the Department's storm water discharges.

2. With respect to storm water quality, project mitigation is accomplished by compliance with the Departments' Statewide Permit and the SWMP. Avoidance and minimization measures

for storm water are accomplished by implementation of approved Best Management Practices (BMPs), which are generally broken down into four categories; Pollution Prevention, Treatment, Construction and Maintenance BMPs. The Department's Storm Water Program contains guidance for implementation of each of these BMPs. Certain projects may require installation and maintenance of permanent controls to treat storm water. Selection and design of permanent project BMPs is refined as the project progresses through the planning stage and into final design.

Implement Water Quality Protection Measures

Potential instream impacts to the Kings River water quality can be minimized by adherence to State Standard Specifications for avoidance of water pollution (Section 7-1.01G) and by implementing Best Management Practices. These measures include detailed recommendations for keeping heavy machinery out of the water, limiting the amount of material (excavated or construction materials) that enter the stream, and maintaining flows at all times. The State Standard Specifications require the contractor to prepare a plan to control water pollution during construction (PAR Environmental Services, Inc. 2007b).

The following measures are recommended to minimize water quality impacts:

a. **Protect River from Toxic Discharge.** The contractor shall be required to follow pertinent paragraphs of the Caltrans manual, California Standard Specifications, Section, 7 – 1.01G which begins, "The contractor shall exercise every reasonable precaution to protect streams . . . from pollution with fuels, oils, bitumen, calcium chloride, and other harmful materials . . ." Construction byproducts and pollutants such as oil, cement, and washwater shall be prevented from discharging into the stream and shall be collected and removed from the site. No equipment may be parked within the immediate watershed of the stream channel. Equipment may be refueled and serviced at an "equipment laydown" area out of the immediate watershed of the Kings River or the canals that drain to a river.

b. **Control Erosion.** Silt fencing (or filter fabric) shall be used to catch any short-term erosion or sedimentation that may inadvertently occur. Measures may include but not be limited to the use of sediment basins, hay bales and/or silt fences. This requirement corresponds to California Standard Specifications, Section 7-1.01G, "Where working areas encroach on live streams, barriers to adequately protect the flow of muddy water into streams shall be constructed and maintained between working areas and streams . . ." Ditches should be installed at the top of the cut/toe of fill areas and the bare slopes should be revegetated with non-invasive, native vegetation found within the project study area.

c. **Build Cofferdams.** Using non-erodable, clean materials, cofferdams or temporary berms shall be built to keep construction activities out of the live stream. Water from these construction envelopes shall be transported off-site or pumped to sediment or percolation basins. The dams or berms shall not impede the movement of fish at any time. Before the first heavy rains, sediment basins shall be cleaned of accumulated debris and the debris transported outside the area for disposal.

d. **Avoid Direct Discharge of Roadway Runoff.** To minimize water quality impacts to the Kings River after the project is complete, no direct discharge of runoff from newly constructed roadways will be allowed to flow to the Kings River or its tributaries. If discharge to the Kings River cannot be avoided, then the runoff should be directed through grassy swales or storm water interceptors constructed at discharge points. These interceptors will remove oil, sediment, and other pollutants that might otherwise flow to the river.

2.2.3 Paleontology

2.2.3.1 Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment and funding for mitigation as part of federally authorized or funded projects (such as Antiquities Act of 1906 [16 United States Code 431-433], Federal-Aid Highway Act of 1935 [20 United States Code 78]). Under California law, the paleontological resources are protected by the California Environmental Quality Act, the California Administrative Code, Title 14, Section 4306 et seq. and Public Resources Code Section 5097.5.

2.2.3.2 Affected Environment

The proposed project sits on an alluvial plain of the Great Valley geomorphic province in the San Joaquin Valley. This geologic setting and paleontological impacts of road widening projects in this portion of the valley were summarized in the *Road 80 Mitigated Negative Declaration* dated August 2006 prepared by Caltrans District 6. According to this report, the project area is underlain by Pleistocene non-marine sediments and Holocene alluvium. The University Of California Museum Of Paleontology and the Los Angeles County Museum has identified paleontological resources in Tulare and Fresno counties (Appendix O).

2.2.3.3 Impacts on Paleontology

The construction of the project will result in shallow excavations (less than three feet) over large areas and deeper trenches and borings covering very small areas. The trenches for culverts and storm drains may be up to 10 feet deep and be several thousand feet in length, but will be less than eight feet in width and extensively shored at the greater depths; however, the excavation and spoil pile can be examined. The deepest excavation, at approximately 40 feet deep, will be the foundation piles for the new Kings River Bridge. The conditions and methods used to excavate for the piles may not be amenable to in-situ examination of the deposits, but the excavated material can be examined. Significant fossil finds are generally found in deep excavations over a large area, such as a retention basin. There are no retention basins or other deep excavations covering a large area proposed for the project. Since Pleistocene deposits will be disturbed by the project, there is a chance of exposing fossils.

2.2.3.4 Avoidance, Minimization and/or Mitigation Measures

A qualified paleontologist with Master of Science or Ph.D. in paleontology or a professional geologist familiar with paleontological procedures and techniques would prepare a detailed Paleontological Mitigation Plan before the start of construction.

The qualified paleontologist would be present at pre-grading meetings to consult and train the grading and excavation contractors. Near the beginning of excavations, the qualified paleontologist would conduct an employee paleontological awareness training session for all persons involved in excavation on the project. A paleontological monitor, under the direction of the qualified paleontologist, would be onsite to inspect cuts for fossils at all times during original grading involving sensitive geologic formations.

If fossils are found, the qualified paleontologist would be called to evaluate and possibly recover them. Construction work in the area of the fossil find would be halted or diverted to allow evaluation and recovery in a timely manner. Bulk sediments would be recovered from fossiliferous horizons and formations as determined necessary by the qualified paleontologist.

Fossil remains collected during the evaluation and recovery work deemed to be of scientific interest would be cleaned, repaired, sorted and cataloged. Prepared fossils, along with copies of all pertinent field notes, photos and maps would be deposited in a scientific institution with paleontological collections. A final report would be completed outlining the results of the Paleontological Mitigation Plan and the discovery, evaluation and recovery of any fossils. The final report would be signed by the qualified paleontologist.

2.2.4 Hazardous Waste/Materials

Technical Study Reference: This section is summarized from the *Limited Level I Preliminary Initial Site Assessment for the Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue in Fresno County to Road 92 in Tulare County, California* (PAR Environmental Services, Inc., 2005f addendum 2007).

2.2.4.1 Regulatory Setting

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The purpose of the Comprehensive Environmental Response, Compensation and Liability Act, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. The Resource Conservation and Recovery Act provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act

- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

2.2.4.2 Affected Environment

The proposed project area is in a historically active agricultural area, with records of farms adjacent to Avenue 416 throughout the proposed project area. Over time, the City of Dinuba urbanized and the farmlands disappeared immediately adjacent to El Monte Way within the city limits. Agricultural facilities historically use pesticides/herbicides/fertilizers, petroleum products (i.e., gasoline and oil), and store materials such as solvents, oil, waste oil, gasoline, and fertilizers. These types of sites are of concern because the project would affect areas that had once been agricultural land.

The *Limited Level I Initial Site Assessment* (PAR Environmental Services, Inc. 2005f addendum 2007) looked at a study area of an approximately two-mile radius around Mountain View Avenue/Avenue 416/El Monte Way. This study area was used for all file and map reviews and data base search. Field surveys were completed in November 2001, April 2002, January 2003 and January 2004. Record searches and field surveys identified 14 known hazardous material sites, 19 potential hazardous material sites, and 18 historic hazardous material sites within and adjacent to the project site. Of these sites, six known hazardous materials (Table 2-16) sites and seven potential hazardous materials sites (Table 2-17) are within the potential construction area for the project and would potentially be affected by right-of-way acquisition. The locations of these sites are depicted in figures 2-22a through 2-22d. The following discussion focuses on those sites for which there is a potential for the project to affect, either through right-of-way acquisition and/or construction disturbance. Refer to the *Limited Level I Initial Site Assessment* (PAR Environmental Services, Inc. 2005f addendum 2007) for a complete list of all sites identified.

2.2.4.3 Known Hazardous Material Sites within the Potential Construction Area

Known hazardous material sites are those sites that have documented soil and/or groundwater contamination. These sites are either currently undergoing remediation or have completed

remediation. The six known hazardous material sites within the potential construction area are listed in Table 2-16 and depicted in figures 2-22a through 2-22d. With one exception, documented soil and groundwater contamination from the six known hazardous materials sites is limited to property boundaries. The exception is groundwater contamination from the Gas-N-Save service station located on the northeast corner of E. El Monte Way and Perry Avenue in Dinuba. Contamination from this site has migrated downward into groundwater, which has been measured at depths of six, 20 and 60 feet below ground surface. The groundwater plume from this site is moving southeast under East El Monte Way towards Dinuba Exxon. Contamination from this site is undergoing quarterly groundwater monitoring and is under remediation by soil vapor extraction.

Dinuba Exxon

Dinuba Exxon is presently an operating fuel retailer and convenience store, located at 1150 East El Monte Way (Assessor's parcel number 18012002) (see Figure 2-22d, Reference Number 4). The site has been operating as a gas service station with underground storage tanks since 1934, with the buildings generally used for automotive repair and supply operations. In addition, it is depicted on 1925-1944 Sanborn Fire Insurance Company Maps as a Gas & Oil establishment. The property is currently under clean-up/remediation and undergoes quarterly groundwater monitoring. Soil contamination was discovered at this site in 1987 during removal and replacement of underground storage tanks. The underground storage tanks contained diesel, weed oil, premium leaded and unleaded gasoline. Soil samples were collected and benzene, toluene, ethylbenzene and xylene and total petroleum hydrocarbons were detected.

Remediation actions included continued monitoring and soil sampling, installation of additional on- and off-site monitoring wells, soil vapor extraction system, air sparging and vapor extraction system, and groundwater monitoring.

No further information was available at the time of the November 2001 file review. No changes were found at the time of Addendum in May 2007 (PAR Environmental Services, Inc. 2005f addendum 2007).

Pavement stains in the parking areas and adjacent to the pump islands were identified during the field investigation on April 18, 2002. This site also contains one propane aboveground storage tank, a mini-mart, and a building that has the appearance of once being used for automotive repairs.

Table 2-16. Known Material Sites within the Potential Construction Area

Site No.[1]	Street Address	APN[2]	Company	Status	Source[3]	Comments	Contaminants of Concern[4]
Known Hazardous Material Sites							
4	1150 East El Monte Way	18112002	Dinuba Exxon (Harness & Son Exxon)	Active	FNIS, TCEHS, Field	Removal of nine USTs occurred in 1987. Between 1987 and 1990, monitoring wells and a vapor extraction system were installed. The most recent quarterly monitoring report from May 2001 reported an increase in contamination due to the adjacent Gas-N-Save plume.	BTEX, TPHg, MTBE[4]
7	1081 East El Monte Way	14172010	Gas-N-Save	Active	FNIS, TCEHS, Field	UST leak discovered in 1996 and a claim filed reported a loss of 26,000 gallons of gasoline. Remediation and monitoring began in 1998. Currently the site is undergoing quarterly monitoring and remediation by SVE.	BTEX, TPHg, MTBE
12	150 North Alta Avenue	14161025	Cochran Chevron	Closed	FNIS, TCEHS, Field	In 1994, five USTs were removed and soil contamination was discovered. Following remediation in 1995, no petroleum contamination was detected with a subsurface assessment and groundwater monitoring. Closure was issued by TCEHS in 1995.	BTEX, TPHg
13	145 North Alta Avenue	14063019	Union Oil Service Station #5686	Closed	FNIS, TCEHS, Field	A UST leak was discovered in 1993, but BTEX and TPH were non-detectable in soil samples in 1994. Soil sampling occurred in 1996 when three USTs were removed, and the site was demolished in 1996. Site closure occurred in 1996 by TCEHS.	BTEX, TPHg, TRPH, lead
15	358 West El Monte Way	17040025	Union Oil Bulk Plant #160	Unknown	FNIS, Field	Site appears on 1925-1944 Sanborn Fire Insurance Company Maps. Maps include tanks and pumps. FNIS search located one AST. The field review found 55-gallon drums and ASTs.	Petroleum products, leaded gasoline, oil, waste oil, solvents
21	6871 Avenue 416	12282024	Dinuba Auto Court Market	Active	FNIS, TCEHS, Field	Three USTs were removed in 1986. Soil samples discovered contamination from BTEX and TVOH. Monitoring and remediation began in 1989. A vapor extraction well was installed in 1994 along with groundwater monitoring wells. Quarterly monitoring continues and a site assessment work plan was submitted to TCEHS in 2001. This case has not been closed by TCEHS.	BTEX, TPHg, TVOH

[1] Site numbers correspond to numbers in Figure 2-22
[2] APN= Assessor's Parcel Number
[3] FNIS= Fidelity National Information Solutions (database), TCEHS= Tulare County Environmental Health Services, Field= Observed during field review
[4]AST= Aboveground Storage Tank. BTEX = benzene, toluene, ethyl benzene and xylene. MTBE = methyl tert-butyl ether. . SVE=Soil Vapor Extraction. TPHg = total petroleum hydrocarbons related to gasoline. TPHd = total petroleum hydrocarbons related to diesel. TRPH = total recoverable petroleum hydrocarbons. TVOH = total volatile organic hydrocarbons. UST=Underground Storage Tank. For a complete list of acronyms, see Appendix E

Table 2-17. Potential Hazardous Material Sites within the Potential Construction Area

Site No.[1]	Street Address	APN[2]	Company	Status	Source[3]	Comments	Contaminants of Concern[4]
Potential Hazardous Material Sites							
1	1916 East El Monte Way	18140033	Dinuba Equipment Tractor	Closed	FNIS, TCEHS	Two USTs on site. UST activity occurred in 1991 and 1992 and a closure letter was issued in 1992	BTEX, TPHg
2	1818 East El Monte Way	14140036	Automotive Center	Closed	FNIS	1 UST was "abandoned" in 1986 and a closure letter was issued in September 1986	Petroleum-based products
11	180 East El Monte Way	17051008	Quic Shop #1	Closed	FNIS, TCEHS	1 UST removed in July 2000 and case closure was issued in August 2000.	Petroleum-based products
14	135 South Alta Avenue	17040017	Rhodes Inc.	Closed	FNIS, TCEHS	3 USTs were removed in January 1990 and a closure letter was issued in March 2000.	BTEX, TPHg,
18	647 West El Monte Way	14033023	Copeland Lumber Yard	Closed	FNIS, TCEHS	1 UST was removed in 1986 and the case was closed in October 1986.	Petroleum-based products, creosote, oils, other chemicals related to treated wood
19	595 West El Monte Way	14033005	Brandon Rug & Interior	Closed	FNIS, TCEHS	1 UST was removed in 1988. A closure letter was issued in May 1998.	BTEX, TPH
20	525 West El Monte Way	14033007	Dinuba Marine	Unknown	FNIS	1 UST removed May 1987. No further action was required by TCEHS.	Solvents, petroleum-based products, other chemicals that may be related to marine industry

[1] Site numbers correspond to numbers in Figure 2-22
[2] APN= Assessor's Parcel Number
[3] FNIS= Fidelity National Information Solutions (database), TCEHS= Tulare County Environmental Health Services, Field= Observed during field review
[4] AST= Aboveground Storage Tank. BTEX = benzene, toluene, ethyl benzene and xylene. MTBE = methyl tert-butyl ether. . SVE=Soil Vapor Extraction. TPHg = total petroleum hydrocarbons related to gasoline. TPHd = total petroleum hydrocarbons related to diesel. TRPH = total recoverable petroleum hydrocarbons. TVOH = total volatile organic hydrocarbons. UST=Underground Storage Tank. For a complete list of acronyms, see Appendix E

Gas-N-Save

Gas-N-Save is located at 1081 East El Monte Way (Avenue 416) (Assessor's parcel number 14172010) (see Figure 2-22c No. 7). It is on the northeast corner of East El Monte Way and Perry Avenue, within the potential construction area. The site is currently an operating gas station and convenience store. An underground storage tank leak of approximately 26,000 gallons of gasoline was discovered in March 1996.

Groundwater contamination levels were provided in the quarterly groundwater monitoring report in April 2001 (Tulare County Environmental Health Services 2001, and as updated by the county). The contaminants are listed in Table 2-18.

Table 2-18. Groundwater Contamination Levels – Gas-N-Save

Contaminant[1]	Detected Levels (µg/l)[2]		Reporting Limit Level (µg/l) [2]
	Highest level	Lowest Level	
Benzene	21,000	19	0.5
Toluene	23,000	1.1	0.5
Ethylbenzene	27,000	6.1	0.5
Xylene	16,000	35	0.5
MTBE	520,000	0.73	0.5
TPHg	320,000	620	50

Source: *Tulare County Environmental Health Services 2001*

[1] BTEX = benzene, toluene, ethyl benzene and xylene. TPHg = total petroleum hydrocarbons as gas. MTBE = methyl tert-butyl ether. TRPH = total recoverable petroleum hydrocarbons. TVOH = total volatile organic hydrocarbons.
[2] µg/l = micrograms per liter

Soil contamination levels were provided in the *Report of Off-Site Deep Well Installation & Groundwater Sampling* in February 2001 (Tulare County Environmental Health Services 2001, and as updated by the county). The soil sample results are listed in Table 2-19.

Table 2-19. Soil Contamination Levels – Gas-N-Save

Contaminant[1]	Detected Level (mg/kg)[2]		Reporting Limit Level (mg/kg) [2]
	Highest Level	Lowest Level	
Benzene	0.72	0.0093	0.005
Toluene	0.017	0.0083	0.005
Ethylbenzene	2.3	0.019	0.005
Xylene	18	0.061	0.005
MTBE	0.28	0.013	0.01
TPHg	460	1.3	1.0

Source: *Tulare County Environmental Health Services 2001*

[1] BTEX = benzene, toluene, ethyl benzene and xylene. TPHg = total petroleum hydrocarbons as gas. MTBE = methyl tert-butyl ether. TRPH = total recoverable petroleum hydrocarbons. TVOH = total volatile organic hydrocarbons.
[2] mg/kg = milligrams per kilogram

The site is currently under clean-up/remediation and quarterly monitoring. No further information was available at the time of the file review.

During the April 2002 field review, soil piles and staining were located on the property.

Cochran Chevron Service Station

The Cochran Chevron Service Station, 150 North Alta Avenue, is on the northeast corner of the North Alta/El Monte Way intersection (see Figure 2-22b, Number 12). This property, in addition to the current service station and automotive repair facility, has historic hazardous material use as it was once the location of Alta Hospital. The current service station was built in 1962. In 1994, soil contamination was discovered. The Tulare County Environmental Health Services issued a closure letter for this case in October 1995.

Pavement staining was present in the parking areas and near the pump islands during the field investigations. Tires, abandoned cars and an aboveground storage tank were present on the site at the time of the April 2002 site visit. A site visit in November 2007 by Tulare County revealed that the abandoned cars were not longer present at the site, but all other field observations from the 2002 site visit remained the same.

Union Oil Service Station #5686

Union Oil Service Station #5686 was located at 145 North Alta Avenue (Assessor's parcel number 14063019). Underground storage tanks were removed (see Figure 2-22b, Number 13) when the site was demolished in May 1996. The site is currently a drive-through espresso/coffee establishment on the northwest corner of the North Alta/El Monte Way intersection.

In July 1996, Tulare County Environmental Health Services issued a closure letter for the site stating that no significant soil contamination was present and no further action was required.

Union Oil Bulk Plant #160

The site of the former Union Oil Bulk Plant #160 lies at 358 West El Monte Way (Assessor's parcel number 17040025) (Figure 2-23b Number 15). Historical hazardous material use at this site can be traced back to 1925-1944 Sanborn Fire Insurance Company Maps. The Sanborn Fire Insurance Company maps depict tanks, filling racks, pumps, and buildings. Files for the property are held at the Central Valley Regional Water Quality Control Board (personal communication Les Obata 2002) and were reviewed in July 2003 and November 2007 by Tulare County.

In November 1995, petroleum impacted soil beneath the loading racks was observed during a site visit and in March of 1996 the Central Valley Regional Water Quality Control Board sent a letter requesting an assessment of the site. Additional soil contamination was discovered in 1996. Groundwater monitoring wells were installed shortly thereafter. The most recent groundwater and remediation monitoring report for the site (ARCADIS 2003) reported the hydrocarbon concentrations as shown in Table 2-20.

Table 2-20. Most Recent Groundwater Contaminant Concentrations at Union Bulk Oil Plant #160

Contaminant[1]	Concentration Range (µg/l)[2]
TPHd	3,000 – 17,000
TPHg	34,000 – 44,000
Benzene	2,100 – 2,200
Toluene	4,800 – 6,100
Ethyl benzene	140 – 760
Xylene	9,100 – 9,800
MTBE	350 - 790

Source: *ARCADIS 2003*
[1] BTEX = benzene, toluene, ethyl benzene and xylene. TPHg = total petroleum hydrocarbons related to gasoline. TPHd = total petroleum hydrocarbons related to diesel. MTBE = methyl tert-butyl ether. TRPH = total recoverable petroleum hydrocarbons. TVOH = total volatile organic hydrocarbons.
[2] µg/l=micrograms per liter

The site continues to undergo clean-up efforts. The Fidelity National Information Solutions database identified this site as having one aboveground storage tank. The field review in April 2002 revealed additional hazardous materials/waste. A later field inspection by Tulare County in 2007 showed that additional hazardous waste/materials identified in the 2002 site visit had been cleaned and is no longer present.

Dinuba Auto Court Market

Dinuba Auto Court is located at 6871 Avenue 416, within the potential construction area (Assessor's parcel number 12282024) (see Figure 2-22a, Number 21). Underground storage tanks were removed from the site in 1986. Table 2-21 shows the soil contamination levels for benzene, toluene, ethyl benzene and xylene and total volatile organic hydrocarbons.

Table 2-21. Soil Contamination Levels 1986 - Dinuba Auto Court Market

Contaminant	Concentration level (µg/g)[2]	
	Highest	Lowest
Benzene	130	10
Toluene	430	85
Xylene	1100	970
TVOH[1]	14000	7900

Source: *Tulare County Environmental Health Services 2001*
[1] TVOH = total volatile organic hydrocarbons
[2] µg/g= micrograms per gram

At the time, Tulare County Environmental Health Services required an additional site evaluation. Soil and groundwater samples were collected and laboratory tests indicated petroleum products in all samples. This case has not been closed by Tulare County Environmental Health Services and clean-up efforts continue to determine the lateral and vertical extent of the contamination. No further information was available at the time of the November 2001 and January 2007 file reviews.

Historic Hazardous Material Sites Within the Potential Construction Area

A total of 18 historic sites were identified in addition to the general areas discussed above. Nine of these sites are within the potential construction area and are listed in Table 2-22 and depicted in Figure 2-22.

Table 2-22. Historic Hazardous Material Sites within the Potential Construction Area

Site No.[1]	APN[2]	Type of Establishment[3]	Comments	Contaminants of Concern
3	14173011	Hay Barn		Pesticides/herbicides/fertilizers
5	14172013	Gas & Oil	Depicted on the 1920 and 1925 Sanborn Fire Insurance Company Maps. In 1920 was listed as oil station and grocery store. In 1925, depicted as gas, oil, grocery store, and auto repair shop.	Petroleum products, leaded gasoline, oil, waste oil, solvents
6	18012001	Gas & Oil/Auto Repair Mechanic Shop	Three buildings on the property between 1925 and 1944	Petroleum products, leaded gasoline, oil, waste oil, solvents
8	17081008	Auto Repair	Listed on the 1925 Sanborn Fire Insurance Company Map	Petroleum products, leaded gasoline, oil, waste oil, solvents
9	17061002	Park		Pesticides/herbicides/fertilizers
10	14163011	A & stage	Storage Facility	Unknown
16	14064021	Carp'r Shop		Unknown
17	No APN	Southern Pacific Railroad		Creosote, oils, petroleum products
22	12110022	Historic Auto Shop	Dated 1922, the building and signs are still in the same location adjacent to Avenue 416.[3]	Petroleum products, leaded gasoline, oil, waste oil, solvents

[1] Site number correspond to the numbers in Figure 2-22
[2] APN= Assessor's Parcel Number.
[3] As listed on the Sanborn Fire Insurance Company and United States Geological Survey historical Maps. Not all abbreviations were defined on the maps, therefore they are not defined here, but treated as potential sites.
[4] See further discussion below.

Field Observations and Other Hazardous Waste Issues

A total of four field visits were conducted for the Initial Site Assessment. Field visits occurred on November 21, 2001, April 18, 2002, January 27, 2003, January 12, 2004 and November 27, 2007. Field observations were made in order to take note of structures, equipment, and abandoned vehicles, tires, shopping carts and other trash and debris composed of cloth, wood, metal, cement and other materials present in the project corridor. These items are of concern because hazardous materials can be associated with these items: chemicals from coatings or the break down of metals and plastics, and chemicals from treated wood or concrete can leach into the soil. Vehicles and equipment contain petroleum products and other chemicals that can leak onto the soil and

structures such as barns and sheds can be used to house pesticides, herbicides, fertilizers, solvents and other chemicals that, if not stored properly, can penetrate the soil.

Tractors and other farming equipment, both new and abandoned, are present on many properties because of the agricultural land surrounding the project. There are numerous sheds and barns on the working farms, which were not entered; however, there is potential for additional materials such as pesticides/herbicides/fertilizers, and automotive-related substances (i.e., petroleum products, oil, waste oil, solvents) to be present. Additionally, general surface, shoulder, or soil staining was observed along the project corridor or within potential construction areas.

All field observation sites have no record of hazardous material storage or release; however, field investigation identified containers, equipment, staining, odors, or other items that are generally associated with hazardous materials. Sites that list debris, such as abandoned wood or cement pieces or items that are not obviously hazardous, have been included because of the potential association with hazardous materials.

Although it was not observed during the site visits, "lab dumping" is common in the project area. "Lab dumping" refers to unauthorized and illegal disposal of methamphetamine laboratory chemicals. This occurs along roadsides in the rural parts of Tulare County. The contents are usually in unmarked plastic bags (personal communication with John Honnette, February 2004).

Aerially Deposited Lead

Vehicular traffic may result in lead contamination from the exhaust of cars burning leaded gasoline. The aerially deposited lead levels in surface soils along highways can reach concentrations in excess of the hazardous waste thresholds[8], requiring either disposal at a Class I landfill or on-site stabilization (Department of Toxic Substance Control 2000).

Aerially deposited lead is likely to exist along urban roadways that experience heavy traffic volumes. Rural roads are less likely to have large amounts of aerially deposited lead because they are used less. Avenue 416 has been used by automobile traffic since the 1920s. However, there have been relatively low traffic volumes; therefore it is less likely to have elevated aerially deposited lead levels than roads with higher traffic volumes. An aerially deposited lead study would not be needed for this project.

Pesticides/Herbicides

The project area, especially the western rural portion in Fresno and Tulare counties, is dominated by rural agriculture and has been for several decades. Pesticides/herbicides of concern include, but not limited to, organochlorine pesticides, organophosphorus pesticides, and chlorinated herbicides. Generally, residual pesticide/herbicide use is not a concern to workers due to their limited concentration, short half-life, and proximity to the proposed right-of-way. However, if all of the following three conditions are present, it is recommended that the proponent conduct soil testing for pesticides: historical use indicates probable presence within the right-of-way; the pesticide/herbicide has a long half-life; and the pesticide/herbicide has low water solubility.

[8] The California Code of Regulations, Title 22, Section 66261.24 identifies the Total Threshold Limit Concentration for aerially deposited lead as 1,000 milligrams per kilogram and the Soluble Threshold Limit Concentration for aerially deposited lead as 5.0 milligrams per liter.

Areas of proposed right-of-way where pesticide/herbicide storage, mixing or spillage has occurred, there may be an increased risk of higher concentration and soils should be analyzed at those locations. Also, if drainage channels or tailwater ponding basins are located at or near the right-of-way, soil should be analyzed for the contaminants of concern (personal communication with Gary Gagliolo September 2002).

Lead-Based Paints

Many structures built before 1978 have lead-based paint on the interior and the exterior surfaces. Lead-based paint use in homes was banned by the federal government in 1978 (United States Environmental Protection Agency 2002). Yellow pavement markings often contain lead chromate. Demolition of structures built prior to 1978 and removal of yellow pavement markings may produce debris containing heavy metals and toxic fumes when heated (personal communication Duat Nguyen October 1999).

California Health and Safety Code 25157.8 states that all waste with a total lead concentration greater than 350 parts per million must be deposited at a Class 1 hazardous waste landfill or at other landfills that have specific permits to accept these wastes. Additionally, lead-based paint waste is required to have a hazardous waste manifest or registered hazardous waste transporter if levels measure 1,000 parts per million for total threshold limit concentration and five parts per million for the soluble threshold limit concentration.

Asbestos

Building materials containing asbestos were used until the 1970s. Many older homes contain building materials of this nature. Bridges may have expansion joints and/or railing with pads that contain asbestos, and agricultural irrigation pipe may contain asbestos (personal communication with Gary Gagliolo October 2002). The material is not considered hazardous unless it is damaged or deteriorated. This is because the asbestos is only hazardous when in an inhalable form. To qualify as a hazardous material, any friable, finely divided, and powdered wastes must contain more than 0.25 percent asbestos (United States Environmental Protection Agency 2002).

The San Joaquin Valley Air Pollution Control Board has regulations that require compliance with the asbestos demolition and renovation requirements developed by the United States Environmental Protection Agency and the *National Emission Standards for Hazardous Air Pollutants* regulation, 40 Code of Federal Regulations, Part 61, Subpart M. Asbestos containing materials shall be managed pursuant to California Occupational Safety and Health Act regulations, Title 8, California Code of Regulations (personal communication with Gary Gagliolo October 2002).

2.2.4.4 Impacts to Hazardous Materials

No-Build Alternative

The No-Build Alternative would not result in right-of-way acquisition or construction disturbance adjacent to the existing road; therefore, this alternative would have no effect on hazardous materials sites.

Both Build Alternatives

The project impacts regarding hazardous materials sites are similar for both build alternatives since there are properties with hazardous materials concerns on both sides of the road. The differences between the alternatives are related to which sites are affected and the extent of right-of-way take for those sites. Tables 2-23 and 2-24 list known, potential and historic hazardous materials sites that would potentially be affected by construction and right-of-way acquisition for Alternative 1 and Alternative 2, respectively. Table 2-25 summarizes the areas of impact and provides a comparison of the alternatives.

Impacts to hazardous materials sites are described in the following discussion.

Segment F

Alternative 1

Alternative 1 will also require the partial or full acquisition of right-of-way from four known hazardous material sites: Gas-N-Save Cochran Chevron, Union Oil Service Station, and Union Oil Bulk Plant #160 (Figure 2-22 Reference Nos. 12, 13, 15). These acquisitions present a potential impact since they are known hazardous material sites.

Alternative 2

Right-of-way will be acquired from the Dinuba Exxon with Alternative 2, as shown in Table 2-24. Dispenser islands will need to be removed; however, there is a potential for relocation within the property boundaries. This site is active and currently under remediation. Due to its active status and the contamination, the site could impact the project. Additionally, with Alternative 2, right-of-way will be acquired at the Gas-N-Save site. While acquisition will be minimal, the project could be impacted.

In addition, Alternative 2 will also require the acquisition of right-of-way from three other known hazardous material sites: Cochran Chevron, Union Oil Service Station, and Union Oil Bulk Plant #160 (Figure 2-22 Property Reference Nos. 12, 13, 15). These acquisitions present a potential impact since they are known hazardous material sites.

There are several known, potential, and historic sites that are adjacent to the potential construction area (see Figure 2-22 Property Reference No. 18). These sites are not expected to be affected by the proposed project due to their distance; however, if soil discoloration/odors are encountered during construction, work shall cease and soil and/or groundwater testing shall be conducted.

Both Alternatives

There are five known hazardous materials sites that will be either directly or indirectly affected as a result of right-of-way acquisition and construction in Segment F. These sites are Dinuba Exxon, Gas-N-Save, Cochran Chevron, Union Oil Service Station, and Union Oil Bulk Plant #160 (Property Reference Nos. 4, 7, 12, 13, and 15 shown on Figure 2-22). The build alternatives differ in the size of right-of-way acquisition on these sites (see Tables 2-23, 2-24 and 2-25).

Table 2-23. Alternative 1 Right-of-Way Acquisition Effects on Hazardous Materials Sites

Assessor's Parcel Number	Property Name	Site Number	Known Hazardous Material Site Right-of-Way[1]		Potential Hazardous Material Site Right-of-Way[1]		Historic Hazardous Material Site Right-of-Way[1]	
			Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
12110022	Auto Shop	22					17,799 ft^2	8,350 ft^2
12282024	Dinuba Auto Court	21	6,237 ft^2	2,500 ft^2				
14033005	Brandon Rug & Interiors	19			505 ft^2	0 ft^2		
14033007	Dinuba Marine	20			594 ft^2	0 ft^2		
14063019	Union Oil Service Station #5686	13	4,199 ft^2	0 ft^2				
14161025	Cochran Chevron	12	3,538 ft^2	0 ft^2				
14163012	A & stage	10					763 ft^2	0 ft^2
14172010	Gas-N-Save	7	5,614 ft^2	0 ft^2				
14172011	Gas & Oil	5					2,537 ft^2	0 ft^2
14173012	Hay Barn	3					642 ft^2	0 ft^2
17040017	Rhodes Inc.	14			3,729 ft^2	0 ft^2		
17040025	Union Oil Bulk Plant #160	15	1,937 ft^2	0 ft^2				
17051008	Quic Shop #1	11			1,858 ft^2	0 ft^2		
17061001	Park	9					3,704 ft^2	0 ft^2
17061002	Park	9					5,854 ft^2	0 ft^2
17061003	Park	9					3,975 ft^2	0 ft^2
18012001	Gas & Oil/ Auto Repair Mechanic Shop	6					0 ft^2	0 ft^2
18012002	Dinuba Exxon	4	0 ft^2	0 ft^2				
18140033	Automotive Center	2			490 ft^2	0 ft^2		
18140036	Dinuba Equipment Tractor	1			3,708 ft^2	0 ft^2		

[1] ft^2= square feet

Table 2-24. Alternative 2 Right-of-Way Acquisition Effects on Hazardous Materials Sites

Assessor's Parcel Number	Property Name	Site Number	Known Hazardous Material Site Right-of-Way[1]		Potential Hazardous Material Site Right-of-Way[1]		Historic Hazardous Material Site Right-of-Way[1]	
			Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
14173012	Hay Barn	3					150 ft^2	0 ft^2
17040017	Rhodes Inc.	14			3,729 ft^2	0 ft^2		
17040025	Union Oil Bulk Plant #160	15	3,142 ft^2	0 ft^2				
17051008	Quic Shop #1	11			1,928 ft^2	0 ft^2		
17061001	Park	9					3,704 ft^2	0 ft^2
17061002	Park	9					5,854 ft^2	0 ft^2
17061003	Park	9					3,975 ft^2	0 ft^2
18012001	Gas & Oil/ Auto Repair Mechanic Shop	6					1,781 ft^2	0 ft^2
18012002	Dinuba Exxon	4	4,344 ft^2	0 ft^2				
18140033	Automotive Center	2			490 ft^2	0 ft^2		
18140036	Dinuba Equipment Tractor	1			3,708 ft^2	0 ft^2		

[1] ft^2= square feet

Table 2-25. Comparison of Potential Right-of-way Impacts on Hazardous Materials Sites for Alternatives 1 and 2

Total						
Alternative	**Known Hazardous Material Sites Right-of-Way[1]**		**Potential Hazardous Material Sites Right-of-Way[1]**		**Historic Hazardous Material Sites Right-of-Way[1]**	
	Permanent	**Temporary**	**Permanent**	**Temporary**	**Permanent**	**Temporary**
Alternative 1	21,525 ft^2	2,500 ft^2	10,954 ft^2	0 ft^2	35,274 ft^2	8,350 ft^2
Alternative 2	21,638 ft^2	2,500 ft^2	10,954 ft^2	0 ft^2	34,005 ft^2	8,350 ft^2

[1] ft^2= square feet

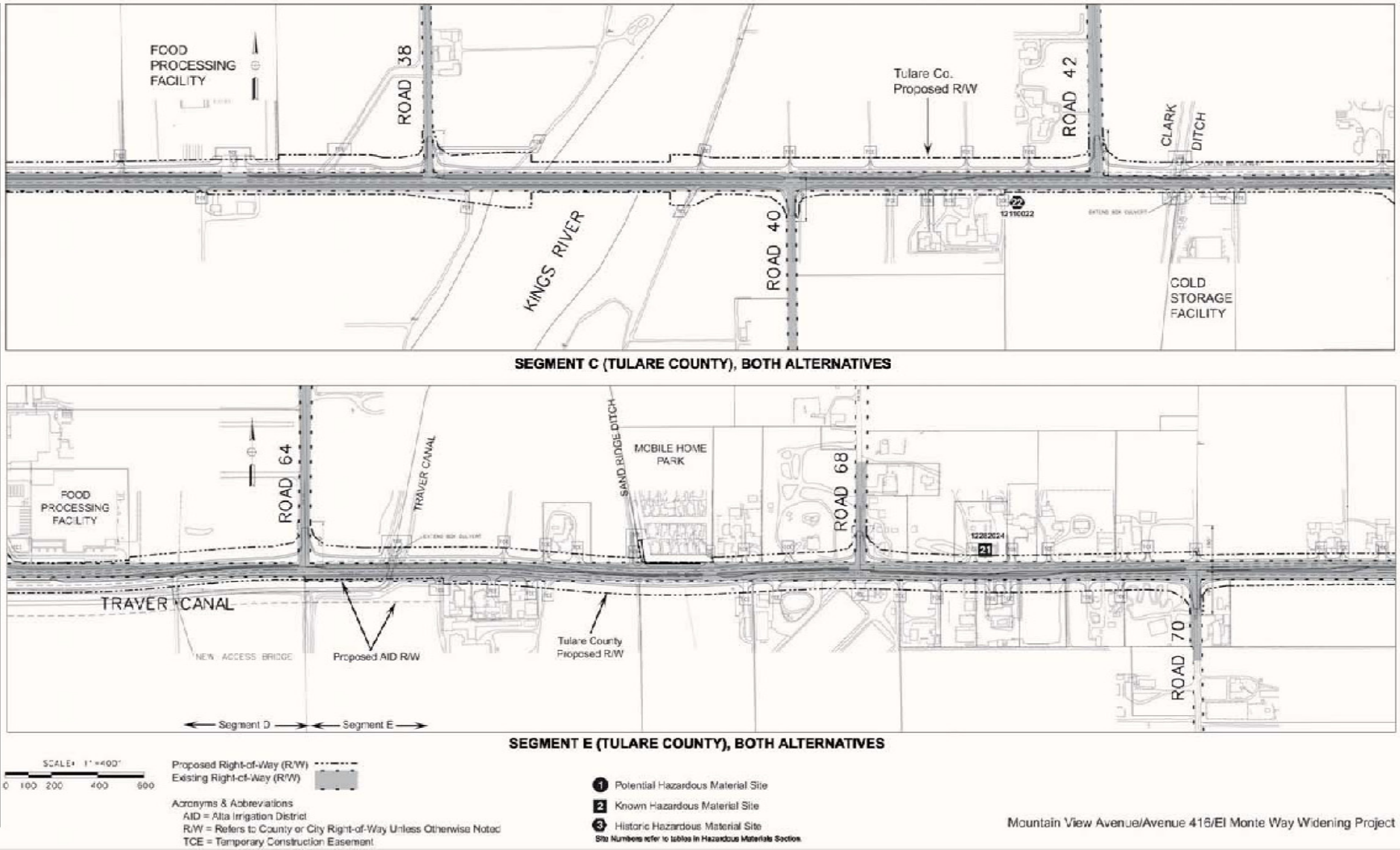


Figure 2-22a. Hazardous Materials Sites Potentially Affected by Right-of-Way Acquisition and Construction

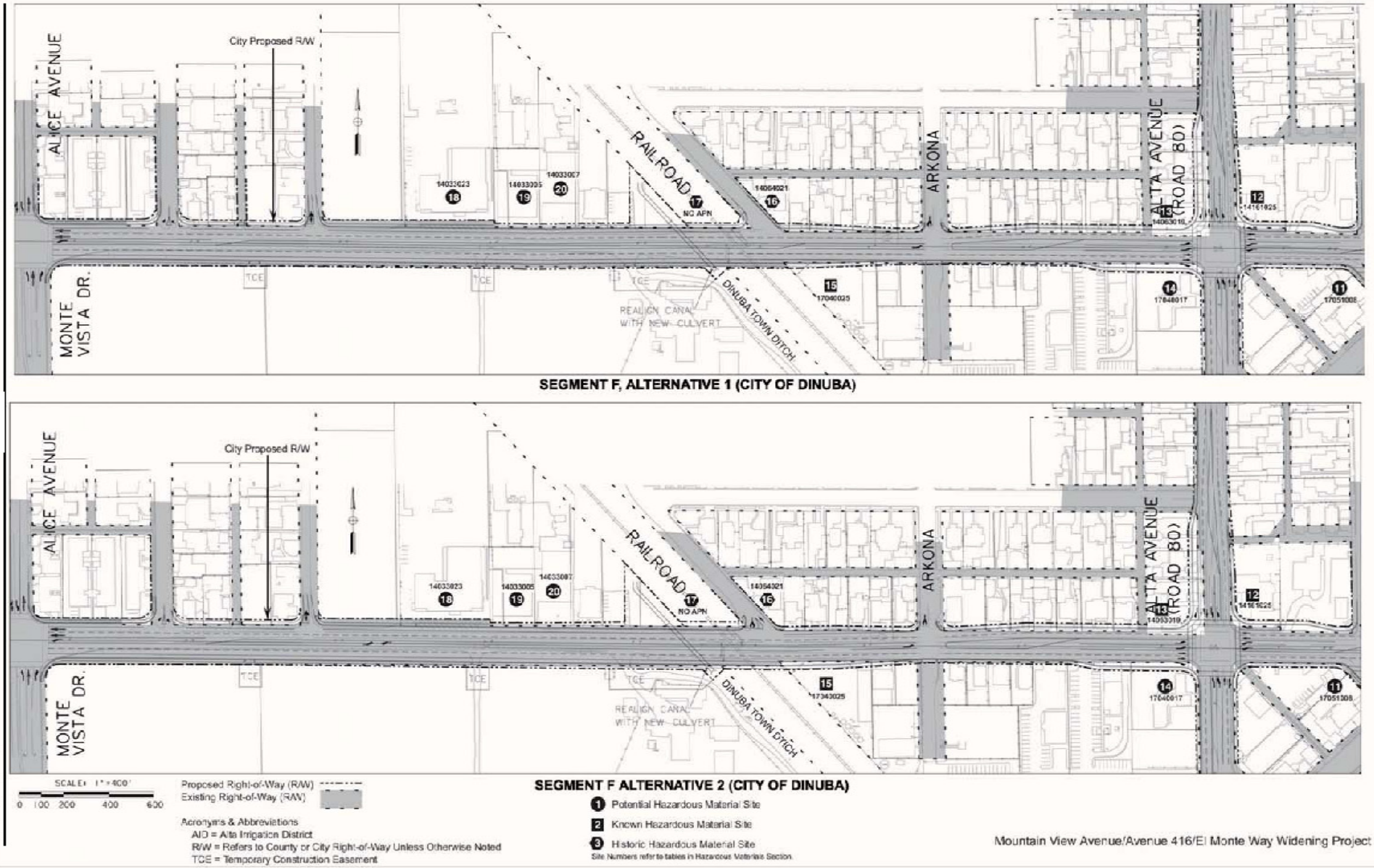
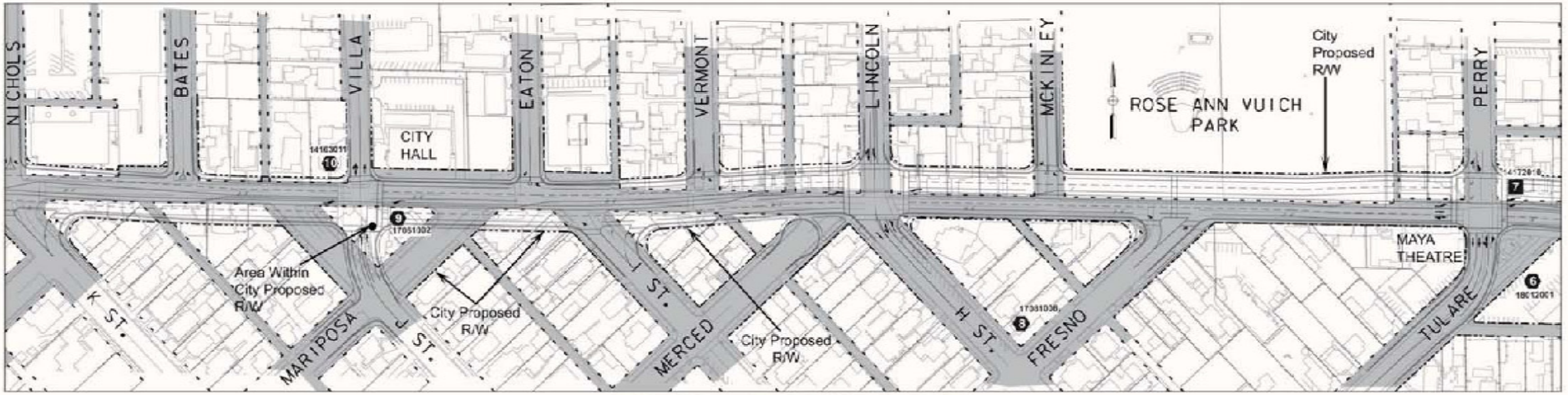
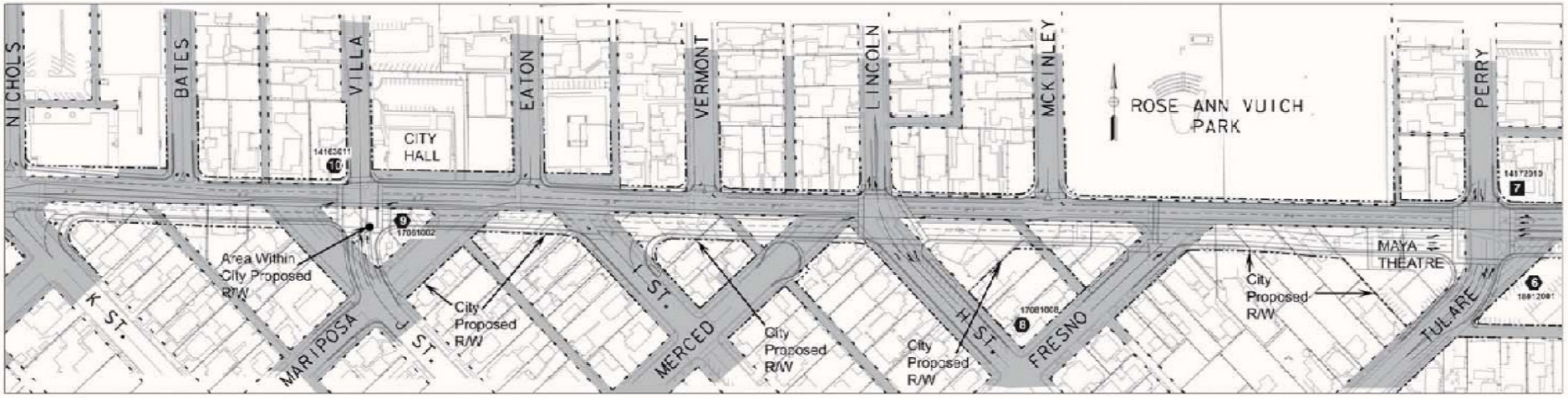


Figure 2-22b. Hazardous Materials Sites Potentially Affected by Right-of-Way Acquisition and Construction



SEGMENT F, ALTERNATIVE 1 (CITY OF DINUBA)



SEGMENT F ALTERNATIVE 2 (CITY OF DINUBA)

SCALE: 1" = 400'
0 100 200 400 600

Proposed Right-of-Way (R/W)
Existing Right-of-Way (R/W)

Acronyms & Abbreviations
AID = Alta Irrigation District
R/W = Refers to County or City Right-of-Way Unless Otherwise Noted
TCE = Temporary Construction Easement

1 Potential Hazardous Material Site
2 Known Hazardous Material Site
3 Historic Hazardous Material Site
Site Numbers refer to tables in Hazardous Materials Section.

Mountain View Avenue/Avenue 416/El Monte Way Widening Project

Figure 2-22c. Hazardous Materials Sites Potentially Affected by Right-of-Way Acquisition and Construction

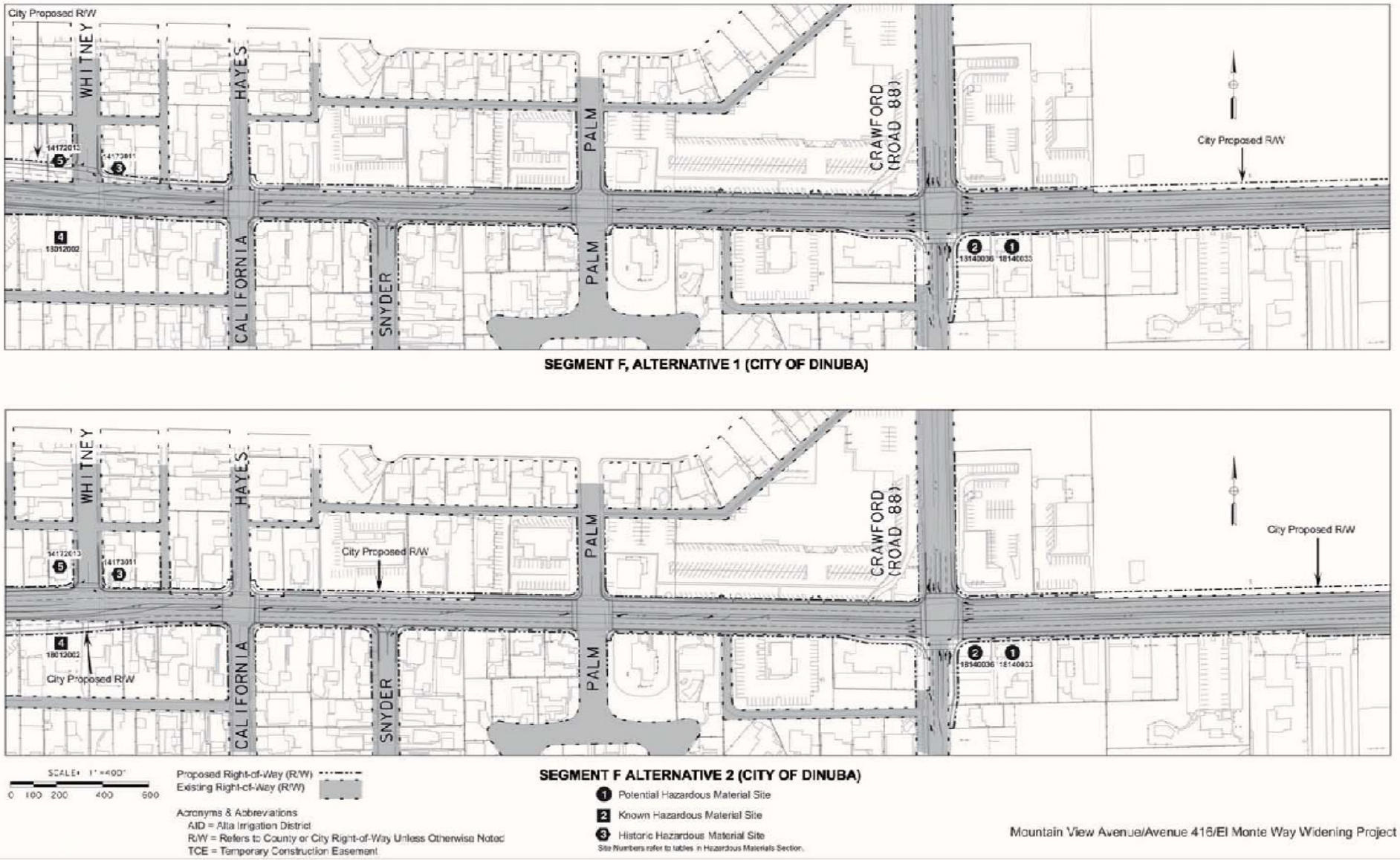


Figure 2-22d. Hazardous Materials Sites Potentially Affected by Right-of-Way Acquisition and Construction

Construction of the proposed project under both alternatives will require right-of-way from several potential and historic hazardous materials sites (Figure 2-22 Reference Numbers 1-3, 5, 6, 8-10, 11, 14, 16, 17, 19, and 20). Direct impacts are not anticipated; however, if during construction discoloration or odors are observed, construction shall cease and soil and water testing conducted.

2.2.4.5 Avoidance, Minimization and/or Mitigation Measures

Mitigation and abatement are required for this project. The following mitigation measures shall be followed:

1. Prior to acquisition, soil will be tested at known and potential hazardous material sites where any right-of-way, permanent or temporary, will be acquired. This especially pertains to Dinuba Exxon and Gas-N-Save where contamination and the amount of acquisition proposed make the site directly affected. Groundwater levels need to be established in areas of known hazardous material sites that require right-of-way acquisition. When groundwater levels are confirmed, groundwater testing may be necessary based on depth of construction excavation. Soil testing/boring will be in compliance with local, state and federal requirements and applicable permitting agencies.

2. Any structures to be demolished will be tested for asbestos containing materials. If asbestos containing materials are found, they must be properly removed prior to demolition. The procedures for inspection, notification, and abatement must be in compliance with San Joaquin Valley Air Pollution Control Board Asbestos Requirements for Demolitions and Renovations and are as follows:

    a. Inspection
        - An asbestos inspection must be performed prior to any regulated demolition.
        - California Occupational Safety and Health Act regulations in California Labor Code require asbestos consulting services be done by or under the direction of a California Occupational Safety and Health Act certified consultant.
        - The San Joaquin Valley Air Pollution Control Board requires inspection reports to include:
            - A schematic showing the location of all tested materials
            - The following data for all asbestos-containing material:
                - The amount and description of each material
                - Percent asbestos content
                - Whether or the not the material is friable
        - A report of the asbestos inspection must be received with each demolition notification.

    b. Notification
        - An asbestos notification must be submitted to San Joaquin Valley Air Pollution Control Board at least ten working days prior to any regulated demolition.

c. Asbestos Abatement
    - Asbestos containing materials discovered during the inspection process must be removed properly prior to demolition. Employees engaged in asbestos abatement work must be properly trained and equipped for this work in accordance to California Occupational Safety and Health Act regulations. The California Occupational Safety and Health Act and National Emission Standards for Hazardous Air Pollution regulations have specific work practice requirements that must be followed during the removal of these materials, waste handling, transportation, and disposal.

3. Any structure to be demolished will be tested for lead-based paints. If these materials are found within the structure, transportation and disposal will be determined based on lead concentration as mandated in California's Health and Safety Code 25157.8.

4. Pavement striping subject to construction disturbance or removal will be tested for lead-based paints. If these materials are found within the pavement, transportation and disposal will be determined based on lead concentration as mandated in California's Health and Safety Code 25157.8. See discussion above on California's Health and Safety Code.

5. All unauthorized dumping shall be removed in conjunction with construction of the project and disposed of properly.

6. Any right-of-way acquisition of current or past, undeveloped agricultural land must be investigated through the county's Agricultural Commissioner's office for types of pesticides/herbicides used and method of application prior to construction. The need for soil testing for residuals will be based on those investigations. If all three of the following conditions are present then soil testing should take place:

    - Historic use indicates probable presence in the right-of-way
    - The pesticide/herbicide used has a long life
    - The pesticide/herbicide has low water solubility

Soil testing must be completed on properties that have either agricultural-related structures near the roadway or are near to or include drainage channels and canals. If soils are found to be contaminated following testing, then the provisions from the certified soil tester and the Department of Toxic Substance Control guidelines on pesticides/herbicides concentrations will be followed and carried out when handling the contaminated soils.

A site-specific health and safety plan and/or lead compliance plan would be developed and implemented to minimize public/worker health exposure to potential hazardous materials.

2.2.5 Air Quality

Technical Study Reference: The following section summarizes the finding of the *Air Quality Analysis Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue In Fresno County To Road 92 In Tulare County, California*, February 2003, 1st Revision May 2004,

2nd Revision January 2005 (PAR Environmental Services, Inc. 2005b and CCS Planning and Engineering).

2.2.5.1 Regulatory Setting

The Clean Air Act as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for six criteria pollutants that have been linked to potential health concerns; the criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), lead (Pb), and sulfur dioxide (SO_2).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity in California is concerned with how well the region is meeting the standards set for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and particulate matter (PM). California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans (RTP) are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the RTP, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as the Tulare County Association of Governments for Tulare County and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the RTP is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires “hot spot” analysis if an area is “nonattainment” or “maintenance” for carbon monoxide (CO) and/or particulate matter. A region is a “nonattainment” area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as nonattainment areas but have recently met the standard are called “maintenance” areas. “Hot spot” analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA and CEQA purposes. Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the CO standard to be violated, and in “nonattainment” areas the project must not cause any increase in the number and severity of violations. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

2.2.5.2 Affected Environment

General Climatic and Meteorological Conditions in the Study Area

The prevailing winds in the project area are from west to northwest. During winter months, southerly winds occur more frequently. Summers are hot and dry, and winters are cool. Average daily temperatures range from the mid-40's in January to the upper 70's in July. Maximum temperatures of 90 degrees Fahrenheit or greater occur for substantial portions of the summer. Temperatures of 32 degrees Fahrenheit and below occur during the winter. Nearly 90 percent of the annual precipitation falls in the six months between November and April.

The project vicinity experiences a high percentage of sunshine. However, a reduction in sunshine does occur during the winter months of December and January because of fog and intermittent stormy weather.

The vertical mixing of air pollutants is limited by the presence of persistent temperature inversions. Inversions may be either ground level or elevated. Ground level inversions occur frequently during early fall and winter (i.e., October through January). High concentrations of primary pollutants, which are those emitted directly into the atmosphere (e.g., carbon monoxide) may be found at these times. Elevated inversions act as a lid over the basin and limit vertical mixing. Severe air stagnation occurs as a result of these inversions. Elevated inversions contribute to the occurrence of high levels of ozone during the summer months.

2.2.5.3 Regional Air Quality Conformity

The federal Clean Air Act requires that transportation plans, programs, and projects approved by a Metropolitan Planning Organization conform to the State Implementation Plan. The Metropolitan Planning Organizations for the proposed project are the Tulare County Association of Governments and the Council of Fresno County Governments. Demonstrating a project's conformity with the State Implementation Plan involves inclusion of the project in the Regional Transportation Plan or Regional Transportation Improvement Program by applying to the Metropolitan Plan Organization. Demonstrating a project's conformity with the State Implementation Plan also involves determining that the project would not result in a violation of the carbon monoxide air quality standard.

Construction of the proposed project has been included in the Regional Transportation Improvement Program prepared by Tulare County Association of Governments (Smalley pers. comm.), and the Regional Transportation Plan prepared by Fresno Council of Governments (Council of Fresno County Governments 2002). Both the Tulare County Association of Governments Regional Transportation Improvement Program and the Fresno Council of Governments Regional Transportation Plan contain generalized descriptions of the proposed project. Neither document contains descriptions detailed enough to make a distinction between build alternatives. Therefore, any of the build alternatives may be considered to be included in these documents.

In addition, as described in Section 4.0 of this air quality report, the project would not result in a violation of the carbon monoxide air quality standard. Therefore, the project is considered to be in conformance with the State Implementation Plan for local carbon monoxide impacts.

2.2.5.4 Project-Level Conformity

The following is a description of ambient air quality standards and existing air quality conditions in the vicinity of the project site.

Air Pollutants and Ambient Standards

Both the United States Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for common pollutants. These ambient air quality standards indicate levels of contaminants that represent safe levels, to avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents.

The federal and state ambient air quality standards and a summary of associated health effects are presented in Table 2-26. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and particulate matter 10 microns in diameter or smaller.

Table 2-26. Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time	Standard, as parts per million		Standard, as micrograms per cubic meter		Violation Criteria	
			California	National	California	National	California	National
Ozone	O_3	1 hour	0.09	N/A	180	N/A	If exceeded	If exceeded on more than 3 days in 3 years
		8 hours	0.07	0.08	137	157	N/A	If exceeded on more than 3 days in 3 years
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year

Table 2-26. Ambient Air Quality Standards Applicable in California (*concluded*)

Pollutant	Symbol	Average Time	Standard, as parts per million		Standard, as micrograms per cubic meter		Violation Criteria	
			California	National	California	National	California	National
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
(Lake Tahoe only)		8 hours	6	N/A	7,000	N/A	If exceeded	N/A
Nitrogen dioxide	NO_2	Annual Arithmetic mean	0.030	0.053	56	100	N/A	If exceeded
		1 hour	0.18	N/A	338	N/A	If exceeded	N/A
Sulfur dioxide	SO_2	Annual arithmetic mean	N/A	0.03	N/A	80	N/A	If exceeded
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	N/A	665	N/A	N/A	N/A
Hydrogen sulfide	H_2S	1 hour	0.03	N/A	42	N/A	If equaled or exceeded	N/A
Vinyl chloride	C_2H_3Cl	24 hours	0.010	N/A	26	N/A	If equaled or exceeded	N/A
Inhalable particulate matter	PM_{10}	Annual arithmetic mean	N/A	N/A	20	N/A	N/A	If exceeded
		24 hours	N/A	N/A	50	150	N/A	If exceeded on more than 1 day per year
Fine particulate matter	$PM_{2.5}$	Annual arithmetic mean	N/A	N/A	12	15	N/A	If exceeded
		24 hours	N/A	N/A	N/A	35	N/A	If exceeded on more than 1 day per year
Sulfate particles	SO_4	24 hours	N/A	N/A	25	N/A	If equaled or exceeded	N/A
Lead particles	Pb	Calendar quarter	N/A	N/A	N/A	1.5	N/A	If exceeded no more than 1 day per year
		30 days	N/A	N/A	1.5	N/A	If equaled or exceeded	N/A

Source: California Air Resources Board, *Ambient Air Quality Standards, 2007*.

Notes: All standards are based on measurements at 25°C and 1 atmosphere pressure.
National standards shown are the primary (health effects) standards.
N/A = not applicable.

Ozone

State and federal standards for ozone have been set for a one-hour averaging time. The state one-hour ozone standard is 0.09 parts per million, not to be exceeded. The federal one-hour ozone standard is 0.12 parts per million, not to be exceeded more than three times in any three-year period. A new federal standard for ozone was issued by the federal government in July 1997. The new ozone standard has been set at a concentration of 0.08 parts per million measured over eight hours. Currently, the San Joaquin Valley Air Basin is classified a severe nonattainment area for the state standards and a severe nonattainment area for the one-hour federal ozone standard.

Ozone is not emitted directly into the air but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include reactive organic gas and nitrogen oxide, react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Once formed, ozone remains in the atmosphere for one or two days. It is then eliminated through chemical reaction with plants and by rainout and washout.

Particulate Matter

State and federal standards for particulate matter 10 microns in diameter or smaller (inhalable particulate matter) are based on micrograms per cubic meter for a 24-hour average and as an annual geometric mean. Federal particulate matter 10 microns in diameter or smaller standards are 150 micrograms per cubic meter 24-hour average and 50 micrograms per cubic meter annual mean. State standards are 50 micrograms per cubic meter 24-hour average and 30 micrograms per cubic meter annual geometric mean.

Federal standards for particulate matter less than 2.5 microns in diameter (fine particulate matter) were issued in July 1997 by the federal government. The particulate matter less than 2.5 microns in diameter standards have been set at concentrations of 15 micrograms per cubic meter annually and 65 micrograms per cubic meter daily. The federal standards for particulate matter 10 microns in diameter or smaller are being maintained so that relatively larger, courser particulate matter continues to be regulated. However, as with the new federal ozone standard, enforcement of the particulate matter 2.5 microns in diameter or smaller standards has been delayed by litigation. The California Air Resources Board and local air quality management districts in California have developed a particulate matter less than 2.5 microns in diameter monitoring network. The new network will collect data for various purposes including particulate matter less than 2.5 microns in diameter attainment/nonattainment designations, development and tracking of implementation plans, and assistance in health studies and other research activities.

Particulate matter 10 microns in diameter or smaller and particulate matter less than 2.5 microns in diameter can reach the lungs when inhaled, resulting in health concerns related to respiratory disease. Suspended particulate matter can also affect vision or contribute to eye irritation.

Particulate matter 10 microns in diameter or smaller can remain in the atmosphere for up to seven days before removal by gravitational settling, rainout and washout. Currently, the San Joaquin Valley Air Basin is in nonattainment under state standards for particulate matter 10 microns in diameter or smaller and serious nonattainment under federal standards for particulate matter 10 microns in diameter or smaller and particulate matter less than 2.5 microns in diameter.

Emissions Inventory

Tables 2-27 and 2-28 present emissions currently generated in Tulare and Fresno counties, respectively. The information presented in these tables is divided into emission source categories.

Table 2-27. Tulare County Emissions Inventory for 2005

Emissions Category	Carbon Monoxide (Tons per Day)	Reactive Organic Gases (Tons per Day)	Nitrogen Oxides (Tons per Day)	Inhalable Particulate Matter[1] (Tons per Day)	Fine Particulate Matter[2] (Tons per Day)
Fuel Combustion	2.35	0.71	4.05	0.32	0.31
Waste Disposal	0.00	0.06	0.01	0.00	0.0
Cleaning & Surface Coatings	0.00	1.78	0.00	0.00	0.00
Petroleum Production & Marketing	0.00	1.09	0.00	0.00	0.00
Industrial Processes	0.04	1.01	0.24	3.22	2.49
Solvent Evaporation	0.00	7.00	0.00	0.00	0.00
Miscellaneous Processes	575.70	56.26	13.31	90.42	62.36
On-Road Motor Vehicles	114.67	11.04	24.63	0.72	0.52
Other Mobile Sources	38.26	5.67	17.61	1.13	1.02
Natural Sources	295.85	82.13	8.95	29.89	25.36
Total					

[1] Inhalable Particulate Matter = Particulate matter 10 microns in diameter or smaller
[2] Fine Particulate Matter = Particulate Matter less than 2.5 microns in diameter
Source: www.arb.ca.gov
Note: 2005 is the latest emissions inventory available from the California Air Resources Board.

Table 2-28. Fresno County Emissions Inventory for 2005

Emissions Category	Carbon Monoxide (Tons per Day)	Reactive Organic Gases (Tons per Day)	Nitrogen Oxides (Tons per Day)	Inhalable Particulate Matter[1] (Tons per Day)	Fine Particulate Matter[2] (Tons per Day)
Fuel Combustion	9.05	0.79	13.20	1.28	1.20
Waste Disposal	0.04	1.37	0.01	0.00	0.00
Cleaning & Surface Coatings	0.00	6.74	0.00	0.00	0.00
Petroleum Production & Marketing	0.03	4.23	0.01	0.00	0.00
Industrial Processes	0.26	3.68	4.72	2.48	1.25
Miscellaneous Processes	51.62	17.29	3.47	68.26	21.13
On-Road Motor Vehicles	197.87	19.63	43.41	1.43	1.02
Other Mobile Sources	87.42	11.34	28.75	2.03	1.82
Natural Sources	14.63	63.94	0.46	1.49	1.26
Total					

[1] Inhalable Particulate Matter = Particulate matter 10 microns in diameter or smaller
[2] Fine Particulate Matter = Particulate Matter less than 2.5 microns in diameter
Source: www.arb.ca.gov
Note: 2005 is the latest emissions inventory available from the California Air Resources Board.

Air Quality Monitoring

Table 2-29 presents air quality monitoring data for three pollutants: carbon monoxide, ozone, and particulate matter 10 microns in diameter or smaller. The data presented in Table 2-29 are for the latest three years. Currently the California Air Resources Board is in the process of updating the annual data, but no new information is available at this time. The monitoring stations shown in the table are those closest to the project site for each of the three pollutants.

The area in the vicinity of the project site has been designated an attainment area for the carbon monoxide air quality standards. As shown in Table 2-29, the carbon monoxide monitoring stations closest to the project site have not exceeded carbon monoxide air quality standard for the three year period.

The area in the vicinity of the project site is considered a severe nonattainment area for ozone because concentrations of this pollutant sometimes exceed the standards. As shown in Table 2-29, both the federal and the state ozone standards are exceeded at the stations closest to the project site.

The area in the vicinity of the project site is considered a nonattainment area for particulate matter 10 microns in diameter or smaller because concentrations of this pollutant sometimes exceed the standards. Table 2-29 shows the particulate matter 10 microns in diameter or smaller standard has been exceeded during the three-year period at the stations closest to the project site.

Table 2-29. Summary of Carbon Monoxide, Ozone, and PM_{10} Monitoring Data

Station Location	Yearly Monitoring Data 2003	2004	2005
Carbon Monoxide			
Visalia - N Church Street			
Highest 8-hour concentration (ppm)[1]	3.03	2.24	2.61
Days above standard (a)	0	0	0
Clovis - N Villa Avenue			
Highest 8-hour concentration (ppm)	2.18	1.68	2.30
Days above standard (a)	0	0	0
Fresno - 1st Street			
Highest 8-hour concentration (ppm)	3.56	2.85	2.95
Days above standard (a)	0	0	0
Ozone			
Visalia - N Church Street			
1st High (ppm)	0.124	0.133	0.117
2nd High (ppm)	0.122	0.115	0.114
Days above standard (b)	43	17	27
Parlier			
1st High (ppm)	0.152	0.120	0.125
2nd High (ppm)	0.139	0.119	0.124
Days above standard (b)	103	23	36
Hanford - S Irwin Street			
1st High (ppm)	0.120	0.121	0.120
2nd High (ppm)	0.113	0.106	0.112
Days above standard (b)	19	7	6
PM_{10}			
Visalia - N Church Street			
Highest 24-hour concentration (ug/m3)[1]	100	82	122
Geomentric mean (ug/m3)	43.0	41.1	44.5
Arithmetic mean (ug/m3)	42.6	41.2	44.3
Calculated days above standard (c)	108	91	146
Hanford - S Irwin Street			
Highest 24-hour concentration (ug/m3)	140	123	117
Geomentric mean (ug/m3)	47.5	43.6	41.0
Arithmetic mean (ug/m3)	46.7	43.1	40.3
Calculated days above standard (c)	149	101	110

[1] PM_{10} = Particulate matter 10 microns in diameter or less ppm = parts per million, $\mu g/m^3$ = micrograms per cubic meter,
(a) Days above standard = days above state 8-hour standard of 9 parts per million.
(b) Days above standard = days above state 1-hour standard of 0.09 parts per million.
(c) Calculated days above standard = days above state 24-hour standard of 50 ug/m3
Source: California Air Resources Board - http://www.arb.ca.gov

2.2.5.5 Impacts to Air Quality

Inhalable and Fine Particulate Matter

Caltrans has developed interim particulate matter 10 microns in diameter or smaller qualitative hot-spot guidance that can be used to evaluate the significance of a project's particulate matter 10 microns in diameter or smaller impacts on regional and local air quality (2002, *Interim PM_{10} Qualitative Hot-Spots Guidance*). At the regional scale, this project is included in the approved Regional Transportation Plan and Transportation Improvement Program. Regional particulate matter 10 microns in diameter or smaller State Implementation Plan budget compliance was accounted for during the Regional Transportation Plan and Transportation Improvement Program conformity determinations. Consequently, the project would not have significant regional particulate matter 10 microns in diameter or smaller impacts.

Recent work by University of California, Davis and others suggests that microscale or local particulate matter 10 microns in diameter or smaller impacts are insignificant beginning a short distance downwind of the project. A qualitative consideration was given to the build alternatives' effect on existing and new particulate matter 10 microns in diameter or smaller violations at the microscale level. Given the build alternatives' characteristics and location as well as efforts and plans to attain the particulate matter 10 microns in diameter or smaller standard, the project would not worsen any existing particulate matter 10 microns in diameter or smaller violation nor create a new particulate matter 10 microns in diameter or smaller violation.

Tulare County Association of Governments completed a memorandum entitled *Consultation on PM-10 and PM-2.5 Hot-Spot Conformity Assessment for the Avenue 416 Widening Project (TUL-00-103)* (2006). The project is not a project of air quality concern based on the traffic counts, level of service and annual average daily traffic projections. A hot spot analysis is not necessary for particulate matter 10 microns in diameter or smaller and particulate matter less than 2.5 microns in diameter (Tulare County Association of Governments 2006). The Environmental Protection Agency and FHWA concur on these findings (see memorandum and correspondence Appendix G).

For a detailed description of the methods, assumptions, computer models and data used for this analysis, refer to the technical study referenced at the beginning of this subsection.

Local Carbon Monoxide Impact Analysis

Ambient carbon monoxide concentrations associated with a proposed project are the sum of background carbon monoxide levels and the project contribution from vehicular emissions. Background carbon monoxide is attributable to a variety of emission sources that exist locally, outside of the highway network being specifically modeled in the microscale analysis.

Computer simulation models were used to estimate project-related carbon monoxide concentrations for the air quality report. The air quality microscale dispersion model used for this air quality report, CALINE4, is a line source model developed by Caltrans (California Department of Transportation 1989). CALINE4 can predict pollutant concentrations for

receptors located within 1,500 feet of the roadway. The CALINE4 model was used to estimate one-hour average carbon monoxide concentrations at receptor locations.

The analysis of carbon monoxide concentrations conducted for the air quality report was conducted according to methods described in the following documents:

- *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) (San Joaquin Valley Unified Air Pollution Control District 2002);
- *Transportation Project-Level Carbon Monoxide Protocol* (Institute of Transportation Studies, University of California, Davis 1996); and
- *Air Quality Technical Analysis Notes* (California Department of Transportation 1988).

The CALINE4 modeling analysis conducted for the air quality report used peak hour traffic data from the traffic analysis conducted for the proposed project (*Transportation Technical Report Mountain View Avenue/Avenue 416 [El Monte Way] from Bethel Avenue in Fresno County to Road 92 in Tulare County, California* (Y&C Transportation Consultants, Inc., June 2002). The traffic data included peak hour volumes, intersection geometrics, and intersection operational characteristics.

High concentrations of carbon monoxide are typically a localized occurrence. High concentrations of carbon monoxide due to on-road vehicles are associated with high traffic volumes and heavily-congested roadway facilities. The carbon monoxide analysis conducted for this air quality report focused on the location considered to have the greatest potential for experiencing high carbon monoxide concentrations.

The intersection of El Monte Way and Alta Avenue (Road 80) was identified as the intersection that would consistently experience the highest vehicle delay and the highest volume of traffic. Therefore, this intersection was used in the carbon monoxide analysis conducted for the air quality report.

The intersection of El Monte Way and Alta Avenue is in the portion Segment F portion of the project corridor. Intersections in other segments of the project corridor were not specifically analyzed. However, since the other intersections and other segments would experience less vehicle delay and lower traffic volumes, receptors at these other locations would experience carbon monoxide concentrations lower than those at the intersection of El Monte Way and Alta Avenue.

At the intersection of El Monte Way and Alta Avenue, the build alternatives do not differ in their alignments, therefore the CALINE4 modeling analysis presented in this Environmental Impact Report analyzes the following conditions:

- Existing Conditions
- 2030 No Project
- 2030 With Project

On-road motor vehicle emission rates were used in the analysis of carbon monoxide concentrations. The estimate of motor vehicle emission rates takes into account the combined effects of vehicle operating mode, types of vehicles, temperature, vehicle speed, year, and altitude. Motor vehicle emission rates used for this report were generated from the Air Resources Board emission factor model EMFAC7F (Version 1.1)[9].

Receptor Locations

The CALINE4 model estimates carbon monoxide concentrations at specific locations. These locations are referred to as "receptors," and represent specific locations in the study area. For the air quality report, receptors were located at the following locations (locations are depicted in Figure 2-23):

1. Residence on the east side of Alta Avenue/Road 80, north of Avenue 416;
2. Chevron Station on the northeast corner of the intersection;
3. Residence on the north side of Avenue 416, east of Alta Avenue/Road 80;
4. Carwash on the south side of Avenue 416, east of Alta Avenue/Road 80;
5. Commercial building on the southeast corner of the intersection;
6. Office on the east side of Alta Avenue/Road 80, south of Avenue 416;
7. Veteran's Memorial on the west side of Alta Avenue/Road 80, south of Avenue 416; Texaco Station on the southwest corner of the intersection;
8. Restaurant on the south side of Avenue 416, West of Alta Avenue/Road 80;
9. Residence on the north side of Avenue 416, West of Alta Avenue/Road 80;
10. Coffee shop on the northwest corner of the intersection;
11. Residence on the west side of Alta Avenue/Road 80, north of Avenue 416; and
12. Relocated Residence on the west side of Alta Avenue/Road 80, north of Avenue 416.

It should be noted that the residence on the west side of Alta Avenue, north of Avenue 416, would only remain in place under the No-Build Alternative and, as a result, was not analyzed under conditions including the proposed build alternatives. Conversely, if the residence was relocated as a result of the project, it would only exist with implementation of the proposed project and, as a result, was not analyzed under Existing and 2030 No-Build Alternative.

Criteria for Evaluating Impacts

Project-related conditions that would result in carbon monoxide concentrations exceeding state or national air quality standards are considered to have a substantial adverse effect.

[9] The air quality analysis for carbon monoxide was conducted prior to the issuance of the United States Environmental Protection Agency's Notice of availability for EMFAC2002. Vehicle emission rates used for the EMFAC2002 are lower than those used in EMFAC7 v. 1.1; emissions calculated using the newer version would be lower than the emissions shown here. Use of the older version of EMFAC over-estimates the 2030 carbon monoxide concentrations, therefore recalculation with the newer version is not necessary

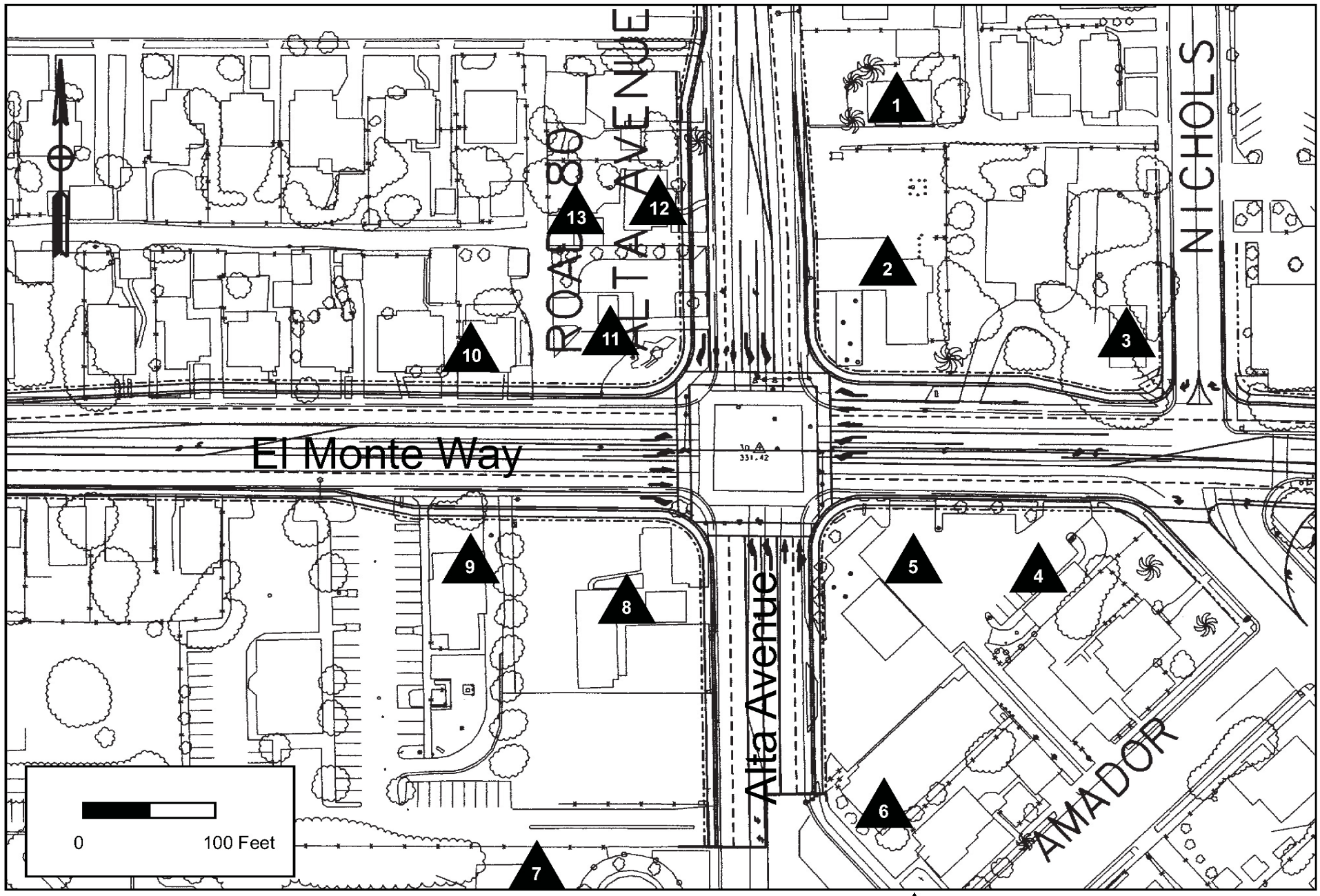


Figure 2-23. CO Modeling (CALINE4) Receptor Locations

1 CO Modeling (CALINE4) Receptor Location

Table 2-30. Carbon Monoxide Concentrations at the Intersection of Avenue 416 and Road 80

Receptor	Existing Conditions		2030 No Project		Both Build Alternative	
	1 Hour Average	8 Hour Average	1 Hour Average	8 Hour Average	1 Hour Average	8 Hour Average
Residence on the East Side of Road 80, North of Avenue 416	5.2	3.6	4.7	3.3	4.5	3.2
Chevron Station on the Northeast Corner of the Intersection	5.9	4.1	5.6	3.9	4.6	3.2
Residence on the North Side of Avenue 416, East of Road 80	5.4	3.8	4.8	3.4	3.9	2.7
Carwash on the South Side of Avenue 416, East of Road 80	5.7	4.0	5.5	3.9	4.7	3.3
Commercial Building on the Southeast Corner of the Intersection	5.4	3.8	5.5	3.9	4.9	3.4
Office on the East Side of Road 80, South of Avenue 416	5.4	3.8	5.0	3.5	4.9	3.4
Veteran's Memorial on the West Side of Road 80, South of Avenue 416	5.1	3.6	4.1	2.9	3.6	2.5
Texaco Station on the Southwest Corner of the Intersection	5.6	3.9	5.2	3.6	4.2	2.9
Restaurant on the South Side of Avenue 416, West of Road 80	5.7	4.0	5.8	4.1	4.7	3.3
Residence on the North Side of Avenue 416, West of Road 80	5.8	4.1	5.8	4.1	4.4	3.1
Coffee Shop on the Northwest Corner of the Intersection	5.5	3.9	5.2	3.6	4.7	3.3
Residence on the West Side of Road 80, North of Avenue 416	5.3	3.7	5.3	3.7	N/A	N/A
Relocated Resid. on the West Side of Road 80, North of Avenue 416	N/A	N/A	N/A	N/A	4.6	3.2

Notes:
All values are in parts per million of carbon monoxide.
State one-hour standard for carbon monoxide is 20 parts per million. State eight-hour standard for carbon monoxide is 9 parts per million.
"N/A" indicates receptor would not be present under this scenario.
Source: CALINE4 microscale air quality dispersion model.

Results

A summary of the results of the CALINE4 carbon monoxide analysis is presented in Table 2-30. Estimated carbon monoxide concentrations at each of the receptor locations are presented. The summary shows the analysis results for the following:

- Existing Conditions
- 2030 No Project
- 2030 with Project

For each condition, both one-hour average and eight-hour average carbon monoxide concentrations are presented.

Under Existing Conditions, the highest one-hour value is 5.9 parts per million and the highest eight-hour value is 4.1 parts per million. These concentrations are estimated to occur at the Chevron station on the northeast corner of the intersection. Both the one-hour value and the eight-hour value under Existing Conditions are below the carbon monoxide air quality standard.

With the 2030 No-Build Alternative, the highest one-hour value is 5.8 parts per million and the highest eight-hour value is 4.1 parts per million. These concentrations are estimated to occur at two locations: the restaurant on the south side of Avenue 416, west of Alta Avenue/Road 80; and the residence on the north side of Avenue 416, west of Alta Avenue/Road 80. Both the one-hour value and the eight-hour value at both locations under 2030 No-Build Alternative are below the carbon monoxide air quality standard. Since carbon monoxide concentrations under 2030 No-Build Alternative are lower than the air quality standard, the impact is considered less than significant.

In 2030 with either build alternative, the highest 1-hour value is 4.9 parts per million and the highest eight-hour value is 3.4 parts per million. These concentrations are estimated to occur at two locations: the commercial building on the southeast corner of the intersection; and the office on the east side of Road 80, south of Avenue 416. Both the one-hour value and the eight-hour value at both locations in 2030 with either build alternative are below the carbon monoxide air quality standard.

Since carbon monoxide concentrations under 2030 With Project Conditions are lower than the air quality standard, the impact is considered less than significant.

With either build alternative, the project would not create a new violation or worsen an existing violation for carbon monoxide.

2.2.5.6 Construction Impacts

Implementation of the proposed project would result in construction activity, which would generate air pollutant emissions. The San Joaquin Valley Air Pollution Control District has determined that the construction-related pollutant of concern is primarily particulate matter 10 microns in diameter or smaller. As noted in *Guide for Assessing and Mitigating Air Quality Impacts* (San Joaquin Valley Air Pollution Control District 2002), "although the impacts from

construction-related air pollutant emissions are temporary in duration, such emissions can still represent a significant air quality impact. In some cases, construction impacts may represent the largest air quality impact associated with a proposed project. Construction activities such as grading, excavation and travel on unpaved surfaces can generate substantial amounts of dust, and can lead to elevated concentrations of particulate matter 10 microns in diameter or smaller."

According to the *Guide for Assessing and Mitigating Air Quality Impacts*, the San Joaquin Valley Air Pollution Control District emphasizes the implementation of measures to control construction-related emissions, rather than the preparation of detailed quantification of construction-related emissions. The San Joaquin Valley Air Pollution Control District has determined that implementation and enforcement of specified dust control measures would reduce construction-related air quality impacts to a less-than-significant level. Consistent with the San Joaquin Valley Air Pollution Control District emphasis, this study does not present quantification of construction emissions related to the placement and assembly of new structures, but does recommend specific construction-related mitigation measures.

Criteria for Evaluating Impacts

As noted above, the San Joaquin Valley Air Pollution Control District emphasizes the implementation of measures to control construction-related emissions, rather than the preparation of detailed quantification of construction-related emissions. The *Guide for Assessing and Mitigating Air Quality Impacts* does not present detailed quantified significance thresholds for construction-related particulate matter 10 microns in diameter or smaller air quality impacts. Rather, the San Joaquin Valley Air Pollution Control has determined that construction-related impacts will be considered less than significant with the implementation of certain mitigation measures. These mitigation measures are described in more detailed later in this section. This air quality study applies the approach presented in the *Guide for Assessing and Mitigating Air Quality Impacts* to determine the significance of construction-related air quality impacts.

Construction Impacts

It is expected that the proposed project would be constructed in phases. Construction activity would not occur along the entire project alignment at any single point in time. The phasing of construction is not precisely known at this time. The following is the current estimate of how the construction phasing would occur. However, it should be noted that the following sequence may be adjusted in the future:

- Phase 1: El Monte Way between Road 72 and Road 92. This phase is primarily within Dinuba and includes the Alta Avenue intersection.
- Phase 2: Avenue 416 between the Tulare County Line and Road 72. This phase is primarily within Tulare County and includes the Kings River Bridge.
- Phase 3: Mountain View Avenue between Bethel Avenue and the Fresno County/Tulare County line. This phase is entirely within Fresno County.

The Kings River Bridge portion of the proposed project would require construction of bridge support structures. As a result, this portion of the proposed project may require more construction activity than other portions of the project. However, occupied dwelling units are

sparse in the vicinity of the bridge. The two nearest dwelling units are approximately 800 feet away from the bridge, and the next two nearest dwelling units are approximately 0.25 mile away. Construction of the proposed project would result in the generation of air pollutant emissions. The primary pollutant associated with construction activity is particulate matter 10 microns in diameter or smaller, with the primary source of particulate matter 10 microns in diameter or smaller being entrainment of fugitive dust from demolition, land clearing, earth moving, and wind erosion of exposed soil. The San Joaquin Valley Air Basin is a nonattainment area for particulate matter 10 microns in diameter or smaller, and additions to the particulate matter 10 microns in diameter or smaller problem may be considered an adverse impact.

Consistent with the approach presented by the San Joaquin Valley Air Pollution Control District in the *Guide for Assessing and Mitigating Air Quality Impacts*, this air quality study does not quantify emissions related to the placement and assembly of new structures. However, the generation of construction-related emissions is considered a short-term significant impact. This impact would be reduced to a less-than-significant level with implementation of the mitigation measures listed in Section 2.2.4.

2.2.5.7 Mobile Source Air Toxics

The FHWA issued interim guidance on how Mobile Source Air Toxics should be addressed in National Environmental Policy Act documents for highway projects, which consists of a tier approach. Depending on the specific project circumstances, FHWA had identified three levels of analysis:

1. No analysis for exempt projects with no potential for meaningful Mobile Source Air Toxics Effects;
2. Qualitative analysis for projects with low potential Mobile Source Air Toxics effects; or
3. Quantitative analysis to differentiate alternatives for projects with higher potential Mobile Source Air Toxics.

Projects in the category of exempt with no meaningful potential Mobile Source Air Toxics effects include the following:

1. Projects qualifying as a categorical exclusion under 23 Code of Federal Regulations 771.117 (c);
2. Projects exempt under the Clean Air Act conformity rule under 40 Code of Federal Regulations 93.126; or
3. Other projects with no meaningful impacts on traffic volumes or vehicle mix.

Based on FHWA guidance, this project is considered a “Project With No Meaningful Potential Effects” because it has less than 140,000 Annual Average Daily Traffic in the design year. This will ultimately reduce emissions of the Volatile Organic Compound-based Mobile Air Toxics (acetaldehyde, benzene, formaldehyde, acrolein, and 1,3 -butadeine). The project will not significantly increase vehicle miles traveled.

The purpose of this project is to improve the safety and operations of Mountain View Avenue/Avenue 416/El Monte Way by constructing approximately 12 miles of four-lane roadway with median and/or median lane. Each alternative proposed for this project would not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. As such, FHWA has determined that both project alternatives would generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special Mobile Source Air Toxic concerns. Consequently, this effort is exempt from analysis for Mobile Source Air Toxics.

Moreover, the United States Environmental Protection Agency regulations for vehicle engines and fuels will cause overall Mobile Source Air Toxics to decline significantly over the next 20 years. Even after accounting for a 64 percent increase in vehicle miles traveled, FHWA predicts Mobile Source Air Toxics will decline in the range of 57 percent to 87 percent, from 2000 to 2020, based on regulations now in effect, even with a projected 64 percent increase in vehicle miles traveled. This will both reduce the background level of Mobile Source Air Toxics as well as the possibility of even minor Mobile Source Air Toxic emissions from this project.

2.2.5.8 Cumulative Impacts on Air Quality

Transportation projects have the potential to affect air quality on a regional level. The regional air quality pollutants most likely to be affected by transportation projects are ozone and particulate matter 10 microns in diameter or smaller. Because ozone is formed over time by a chemical reaction involving precursor emissions, its concentration is distributed over a geographically regional area. Particulate matter 10 microns in diameter or smaller is often considered a regional pollutant, although it can have effects on both the local or microscale levels. This project's effects on microscale particulate matter 10 microns in diameter or smaller concentrations are discussed above.

The Mountain View Avenue/Avenue 416/El Monte Way Widening Project is expected to result in a reduction in vehicle delay and increase in average vehicle speed. However, the project is not expected to result in a substantial redistribution of vehicle travel as there are no alternate routes in the region, nor is the project expected to result in a change in the number of vehicle trips. Therefore, project-related changes in ozone precursors and particulate matter 10 microns in diameter or smaller emissions were not quantified in the air quality analysis for the draft Environmental Impact Report/Environmental Assessment.

Both build alternatives are expected to have approximately the same effect on regional travel. Therefore, differences in how the build alternatives affect regional ozone precursor and particulate matter 10 microns in diameter or smaller emissions are not expected to occur.

Since the Mountain View Avenue/Avenue 416/El Monte Way Widening Project would not generate additional vehicle trips and would not substantially redistribute vehicle travel, the project is not expected to result in a substantial net change in vehicle travel and, thus, is not expected to have a substantial effect on regional ozone precursor or particulate matter 10 microns in diameter or smaller emission levels. Therefore, the proposed project is not expected to contribute to cumulative adverse effects on regional air quality.

2.2.5.9 Avoidance, Minimization and/or Mitigation Measures

The following measures, which are from tables 6-2 and 6-3 of *Guide for Assessing and Mitigating Air Quality Impacts*, should be implemented to reduce construction-related impacts to a less-than-significant level:

1. All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, vegetative ground cover, or chemical stabilizer/suppressant that is certified or "pre-certified" by the California Environmental Protection Agency.
2. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
3. All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
4. When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained.
5. All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
6. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
7. Limit traffic speeds on unpaved roads to 15 miles per hour (mph); and
8. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.

2.2.6 Noise and Vibration

Technical Study Reference: *Environmental Noise Analysis, Mountain View Avenue/Avenue 416/El Monte Way Widening Project From Bethel Avenue in Fresno County to Road 92 in Tulare County, California*. Brown-Buntin Associates Inc./PAR Environmental Services, Inc., January 21, 2005.

2.2.6.1 Regulatory Setting

The National Environmental Policy Act of 1969 and the California Environmental Quality Act provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between the National Environmental Policy Act and the California Environemenal Quality Act.

California Environmental Quality Act

The California Environmental Quality Act requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under the California Environmental Quality Act, then the California Environmental Quality Act dictates that mitigation measures must be incorporated into the project unless such measures are not feasible. The rest of this section will focus on the NEPA-23 CFR 772 noise analysis; please see Chapter 3 for further information on noise analysis under the California Environmental Quality Act.

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA (and the Department, as assigned) involvement, the federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). The following table lists the noise abatement criteria for use in the NEPA-23 CFR 772 analysis.

Table 2-31. Activity Categories and Noise Abatement Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level, dBA $L_{eq}(h)$[1]	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to service its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties or activities not included in Categories A or B above.
D	---	Undeveloped lands.
E	52 Interior	Residences, motels, hotel, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

[1]The unit of noise (sound) level measurement employed in this report is the A-weighted sound pressure level, denoted in decibels (dBA). For an explanation of these terms, see Appendix E, "Glossary of Technical Terms" under "Acoustical Terminology."

In accordance with Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, October 1998*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the Noise Abatement Criteria. Approaching the Noise Abatement Criteria is defined as coming within one dBA of the Noise Abatement Criteria.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible

at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum five dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in

Table 2-32. Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock Band
Jet Fly-over at 300m (1000 ft)		
	100	
Gas Lawn Mower at 1 m (3 ft)		
	90	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)		Food Blender at 1 m (3 ft)
	80	Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime		
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime		
		Library
Quiet Rural Nighttime	30	Bedroom at Night, Concert Hall (Background)
	20	Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans 2007

determining whether a proposed noise abatement measure is reasonable include: resident's acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, newly constructed development versus development pre-dating 1978 and the cost per benefited residence.

2.2.6.2 Affected Environment

The proposed project is located in the rural areas of unincorporated Fresno and Tulare counties on Mountain View Avenue/Avenue 416 between Bethel Avenue and Road 72. There are single-family homes, mobile homes, farm-related industry (cold storage, packing houses and green houses), farm residences, barns and equipment sheds located in this area.

Between Road 72 and Road 93 on El Monte Way in the City of Dinuba, there is a mix of urban uses. This area includes single-family homes, apartments, an auto dealership, convenience markets, service stations, grocery stores, drug stores, government offices, school district offices, churches and parks.

2.2.6.3 Impacts to Noise and Vibrations

Year 2030 Exterior Traffic Noise Impacts

Table 2-33 shows the results of the traffic noise modeling for the Year 2030 for the No-Build Alternative and both build alternatives. The No-Build Alternative condition assumes that the roadway improvements will not occur. Receptors listed in Table 2-33 were chosen as a representative sample of Category B uses in the project area (for receptor locations see Appendix I). At most locations, existing traffic noise levels approach or exceed the FHWA/Caltrans Noise Abatement Criteria of 67 dBA, $L_{eq.}$

No-Build Alternative

With the No-Build Alternative, future (2030) traffic noise levels will approach or exceed the FHWA/Caltrans Noise Abatement Criteria at all receptors except for three receptors in the City of Dinuba.

Both Build Alternatives

Fresno County and Tulare County. Both build alternatives would result in similar traffic noise impacts. Future (2030) traffic noise levels would approach or exceed the FHWA/Caltrans Noise Abatement Criteria at all receptors in the project corridor. Therefore, the project will result in a *traffic noise impact*; and reasonable and feasible noise abatement measures must be considered.

Table 2-33. Year 2030 Traffic Noise Levels, Comparison of No-Build and Build Alternatives

	Receptor No. and Location	Existing Nose Level (dBA)	Predicted Noise Level with Project (dBA)		Predicted Noise Level without Project (dBA)	Predicted Noise With Abatement (dBA)				Reasonable and Feasible
			Alt. 1	Alt. 2		6 ft Barrier	8 ft Barrier	10 ft Barrier	12 ft Barrier	
Fresno County Segments A, B	R1	67	68	68	70					No
	R2	67	69	69	71					No
	R3	64	67	67	67					No
	R4	63	68	68	67					No
Tulare County Segments C-E	R5	71	72	72	75					No
	R6	70	72	72	74					No
	R7	67	72	71	72					No
	R8	66	74	75	72					No
	R9	68	73	73	74					No
	R10A	*	74	74	76	69	66	64	---	No
	R10B	69	74	74	76	68	66	64	---	No
	R10C	*	74	74	76	71	71	70	---	No
	R11	66	72	72	72					No
City of Dinuba Segment F	R12A	*	70	70	69	70	68	65	63	Yes
	R12B	64	69	69	69	69	68	66	64	Yes
	R12C	*	70	70	69	70	68	66	64	Yes
	R13	69	74	74	74					No
	R14	71	74	74	74					No
	R15	73	77	77	77					No
	R16	69	73	73	73					No
	R17	67	71	69	70					No
	R18	68	**	70	72					No

Table 2-33. Year 2030 Traffic Noise Levels, Comparison of No-Build and Build Alternatives (*concluded*)

	Receptor No. and Location	Existing Nose Level (dBA)	Predicted Noise Level with Project (dBA)		Predicted Noise Level without Project (dBA)	Predicted Noise With Abatement (dBA)				Reasonable and Feasible
			Alt. 1	Alt. 2		6 ft Barrier	8 ft Barrier	10 ft Barrier	12 ft Barrier	
City of Dinuba Segment F	R19	61	65	**	64					No
	R20	68	**	70	72					No
	R21	60	65	**	64					No
	R22	68	73	72	72					No
	R23	63	67	67	67					No
	R24	63	67	67	66					No
	R25	61	65	65	64					No
	R26	66	68	72	69					No
	R27	63	65	68	66					No
	R28	71	71	**	74					No
	R29	68	73	73	72					No
	R30	68	72	72	72					No

* Invalid data
** Not applicable to the Alternative

1. Receptors R1 through R9 and R11.
Rural residences adjacent to the project are scattered and have private access drives onto Mountain View Avenue. Sound walls are not considered feasible for these homes since they would have to include access gaps, nor are they considered reasonable in cost for one or two homes.

Locations where noise abatement must be considered in Fresno County and Tulare County are:

2. Receptors R10A, R10B and R10C.
A sound wall was analyzed for the mobile home park located in Segment E on the north side of Avenue 416 between Road 64 and Road 68 (Receptors R10A, 10B & 10C). Construction of a sound wall was found feasible, however it would not be reasonable based on the cost of the sound wall. The analysis for reasonableness and feasibleness for sound walls is provided later in this section.

City of Dinuba. At most locations in Segment F, both alternatives would result in traffic noise levels that exceed the FHWA/Caltrans Noise Abatement Criteria. Therefore the project will result in a *traffic noise impact*; therefore, reasonable and feasible noise abatement measure must be considered.

Locations where noise abatement must be considered in the City of Dinuba are:

1. Receptors 12A, 12B, and 12C.
There is a single-family development located on the north side of El Monte Way between the apartments (on the north side of El Monte Way, east of Alice Avenue) and Road 72. Currently, there is a 6-foot concrete block wall along the rear property line of the lots backing onto El Monte Way. Even with the wall, these homes will be exposed to traffic noise levels exceeding the FHWA/Caltrans Noise Abatement Criteria. Sound walls were analyzed for this location. It was determined that a noise barrier would reasonable based on cost; however, other factors may influence reasonableness, as discussed later in this section.

2. Receptors 13 and 14.
The apartment buildings both west and east of Alice Road on the north side of El Monte Way. Sound walls were not considered feasible in front of these apartments because they would block pedestrian access and eliminate street parking. Parking for the apartments is currently inadequate.

3. Receptor 15.
The remaining single-family residence is located at the northeast corner of El Monte Way and Arkona Avenue and would not be relocated. Sound walls for this house are not feasible or reasonable in cost.

4. Receptors 16 through 30.
The residences, school and church on both the north and south sides of El Monte Way between Alta Avenue and Crawford Road. Continuous sound walls constructed along El Monte Way would block alleys, which are used for refuse

collection and emergency service access. Gaps in sound walls for alley access would compromise sound reduction effectiveness and block sight distance for vehicles attempting to turn onto El Monte Way. Therefore, sound walls are not feasible between Alta Avenue and Crawford Road.

Construction Equipment Noise Impacts – Both Build Alternatives

During the construction phases of the project, noise from construction activities would dominate the noise environment in the immediate area. Activities involved in construction would generate noise levels, as indicated in Table 2-34, ranging from 85 to 88 dBA at a distance of 50 feet. Construction activities would be temporary in nature, typically occurring during normal working hours. Construction noise impacts could be significant, if nighttime operations or use of unusually noisy equipment resulted in annoyance or sleep disruption for nearby residences.

Construction noise is regulated by Caltrans standard specification Section 7-1.01I "Sound Control Requirements." These requirements state that noise levels generated during construction shall comply with applicable local, state and federal regulations, and that all equipment shall be fitted with adequate mufflers according to the manufacturers specifications.

During construction, traffic noise generated by approaching traffic would be reduced due to a reduction in speed required by working road crews. Conversely, traffic noise levels of vehicles leaving the construction area would be slightly higher than normal due to acceleration. The net effect of the accelerating and decelerating traffic upon noise would not be appreciable. The most important project-generated noise source would be truck traffic associated with transport of heavy materials and equipment. This noise increase would be of short duration and limited primarily to daytime hours.

Table 2-34. Construction Equipment Noise

Type of Equipment	Maximum Level, dBA at 50 feet
Scrapers	88
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85

Source: *Environmental Noise Pollution, Patrick R. Cunniff*, 1997.

2.2.6.4 Avoidance, Minimization, and/or Noise Abatement

Barrier Analysis

The Sound2000 model and barrier profile analyses were used to determine appropriate barrier heights and barrier configurations that would reduce traffic noise levels at the two locations where barriers appear to be feasible. These are described as Barrier B-1 (at Receptor 10A, B and C) and Barrier B-2 (at Receptor 12A, B and C).

Barrier B-1 must be at least 10 feet high to reduce noise by five dBA and intercept line-of-sight from truck exhaust stacks. This applies to either segment design option E1 or E3. The easternmost, first-row mobile home (Receptor 10C) will receive little benefit from the barrier because the barrier must end at the driveway immediately east of the mobile home.

Barrier B-2 must be at least 12 feet high to reduce noise by five dBA and intercept line-of-sight to truck exhaust stacks. A wing wall would need to be constructed along the west side of the residential subdivision and would need to be six feet tall and 100 feet long. The existing six-foot wall on the east side of the subdivision would remain in place and act as a wing wall. This applies to both build alternatives in Segment F. It is assumed that the existing six-foot wall would be demolished and the new, higher wall would be constructed in the same location.

Benefited Residences and Reasonable Allowances for Barriers

The first barrier that was evaluated is labeled B-1 (in Segment E). This barrier is located along the mobile home park on the north side of Avenue 416 between Roads 64 and 68. The main wall extends from the west side of the mobile home park to the mobile home park driveway (approximately from Station 914+70 to Station 917+30). The wing wall west of the mobile homes is about 96 feet long. Both the main and wing wall must be 10 feet high to achieve a minimum five dBA reduction in traffic noise at the residences and block line-of-sight to trucks. Five of the six first-row mobile homes will benefit from the wall.

Based on the *Traffic Noise Analysis Protocol* worksheets, the reasonable allowance per benefitted residence for B-1 is $35,000. Assuming five residences would benefit from the sound wall, the reasonable allowance for the wall B-1 is $175,000.

The second barrier configuration that was evaluated is labeled B-2 (in Segment F), and is located on the north side of El Monte Way west of Lille Avenue (approximately from Station 1012+50 to 1018+90). The barrier extends for 640 feet west from Lillie Avenue and a wing wall would extend 100 feet along the west side of the residential subdivision. There are nine residences that are expected to benefit from the barrier. Based upon the analysis, a barrier height of 12 feet would be required along El Monte Way with a six-foot-tall wing wall on the west side of the subdivision. The existing six foot wall on the east side of the subdivision (along Lillie Avenue) would function as a wing wall as well. These barriers are needed to achieve a minimum five dBA reduction in traffic noise at the identified receivers, and to block line-in-of-sight to trucks.

Based on the *Traffic Noise Analysis Protocol* worksheets, the reasonable allowance per benefitted residence is $33,000. Assuming nine residences would benefit from sound wall B-2, the reasonable allowance for the wall is $297,000.

Table 2-35 summarizes the reasonable cost allowance for each proposed noise barrier and the engineer's cost estimate for the barriers. Table 2-34 shows that the proposed noise Barrier B-1 is not reasonable in cost since the reasonable allowance is less than the estimated cost. The high cost of proposed Barrier B-1 is due to the relocation cost of Alta Irrigation District facilities at the Sand Ridge Canal. Proposed noise barrier B2 is reasonable in cost since the reasonable allowance is greater than the estimated cost.

Table 2-35. Reasonable Cost Assessment

Barrier No.	Reasonable Allowance	Estimated Cost*	Cost Reasonable/Unreasonable
B1	$175,000	$202,805	Unreasonable
B2	$297,000	$168,720	Reasonable

*Source: *Quincy Engineering*

A "preliminary determination of reasonableness" was made for each barrier using the methodology provided in the *Traffic Noise Analysis Protocol*. It was determined that noise Barrier B-2 (Segment F) would be reasonable based on cost. This barrier is assumed to be constructed at the location of the existing wall on private property. It is assumed that the existing wall will be demolished. Since the wall would be constructed on private property, Caltrans requires a permanent easement to be secured from 100 percent of the affected properties to construct and maintain the wall. Each affected property owner must enter into an agreement with the City of Dinuba that allows access, accepts aesthetic maintenance of the wall, and agrees to not remove the wall without consent of the other affected property owners and the City of Dinuba.

Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of barriers at: Receptors 12A, B and C, with respective lengths and average heights of 12 feet high. Calculations based on preliminary design data indicate that the barriers will reduce noise levels by a minimum of 5 dBA for 9 residences at a cost of $168720. If during final design conditions have substantially changed, noise abatement may not be necessary. The final decision of the noise abatement will be made upon completion of the project design and the public involvement processes.

2.3 Biological Environment

Field studies were conducted in October 2001, January and December 2003, September and October 2006 and January and April 2007. Field reviews included surveys for special-status plant species and habitat for those species known to occur in the project vicinity, wetland delineations of the project area, a valley elderberry longhorn beetle survey and reconnaissance-level wildlife surveys to assess the potential of the study area to support special-status wildlife species. Based on these field surveys, a Natural Environment Study (PAR Environmental Services Inc. 2007b), which evaluated the proposed project's effects on vegetation, wildlife and fisheries resources, was prepared. A Wetland Delineation Report (PAR Environmental Services, Inc. 2007d), which evaluated the proposed project's effects on wetland and water of the United States, and a Biological Assessment (PAR Environmental Services, Inc. 2007a), which evaluated the proposed project's effects on federally listed plant and animal species, were also prepared.

2.3.1 Natural Communities

2.3.1.1 Regulatory Setting

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are

areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.
Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below in Section 2.3.5, Threatened and Endangered Species. Wetlands and other waters are also discussed below in Section 2.3.2.

2.3.1.2 Affected Environment

The information presented in this section is summarized from the biological resources technical study prepared for this project in June 2007: *Natural Environment Study for Mountain View Avenue/Avenue 416 Widening Project Fresno and Tulare Counties, California* (PAR Environmental Services, Inc. 2007b) and the *Draft Mitigation Plan* (PAR Environmental Services, Inc. 2007c).

The majority of land within the project area is under longstanding agricultural use as vineyards, orchards, row crops, or fallow fields. Non-native annual grasslands can be found throughout the project area, with heavy concentration near the Kings River and the 15 irrigation canals or drainages traversing the project area. Natural communities of special concern within the project area are associated with the Kings River, and include willow riparian forest, and freshwater marsh/wetlands. Suburban/urban land uses are found within the City of Dinuba.

Willow Riparian

A continuous, dense willow riparian forest flanks the sandy braided channel of the Kings River (Figure 2-24). Scour from high flows has created channels and depressions in the upland riparian community that support wetlands adjacent to the channel. Black and Goodding's valley willow are dominant with a few Oregon ash, and escaped garden fig and mulberry also present. The invasive weed, giant reed, has created impenetrable thickets in several locations. Native shrubs are also present and include buttonwillow and, in two locations, elderberry.

The Kings River willow riparian corridor is a valuable wildlife resource. The tree willows within this corridor could support nesting Cooper's hawks, red-shouldered hawks, violet-green swallows, Nuttall's woodpeckers, western scrub jays, western kingbirds, Bullock's orioles, and many other species.

2.3.1.3 Impacts on Natural Communities

Activities associated with construction of the new bridge and demolition of the existing structure will not result in impacts to willow riparian habitat along the Kings River.

To provide access for heavy equipment and materials for construction, temporary roads and vehicle turnaround areas will be established on both the west and east sides of the banks of the Kings River. Work areas will also extend under the bridge and to the south to accommodate equipment needed to remove the existing bridge. These activities will not result in temporary impacts to willow riparian forest habitat along both sides of the Kings River because construction is not anticipated to occur within the willow riparian forest. Therefore, no permanent impacts to willow riparian forest habitat would occur.

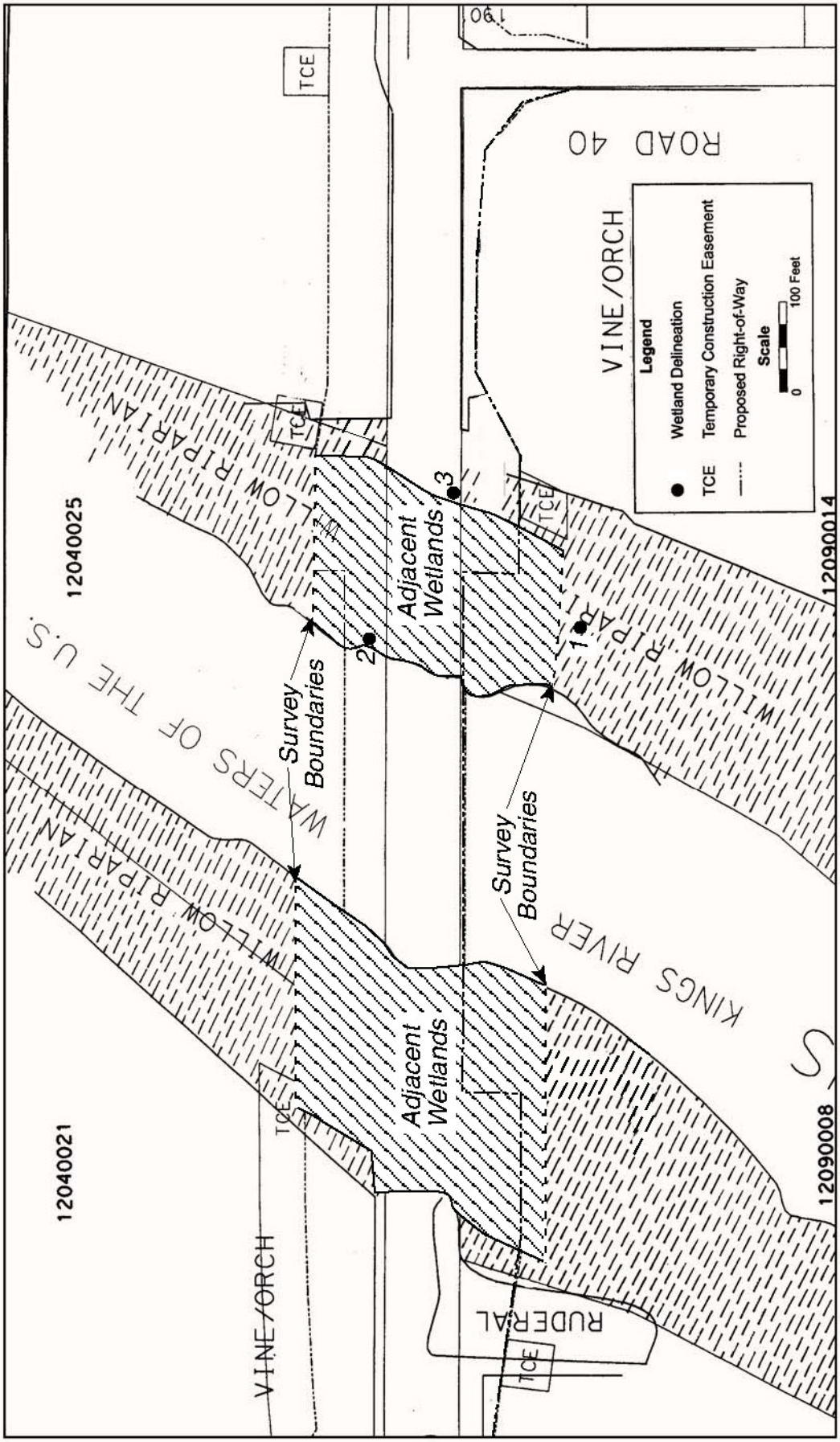


Figure 2-24. Habitat Types in the Vicinity of the Kings River

2.3.1.4 Avoidance, Minimization and/or Mitigation Measures

No impacts are anticipated during construction of the project. If it is found later that, during construction, willow riparian forest habitat will be impacted, the effects can be minimized by keeping the road access and vehicle turnaround areas as small as possible within this sensitive habitat type and by establishing the habitat as an Environmentally Sensitive Area. The boundaries of the Environmentally Sensitive Area will be marked in the field with temporary orange mesh safety fencing and with the assistance of a qualified biologist.

A Habitat Restoration Plan shall be prepared and implemented to restore or create riparian habitat at a ratio greater than 1:1. The final mitigation ratio shall be established after consultation with the California Department of Fish and Game, United States Fish and Wildlife Service and United States Army Corps of Engineers. To partially achieve the goal of riparian mitigation/compensation, the disturbed riparian habitat on the site will need to be restored after construction. In addition, riparian mitigation credits shall be purchased in a regional mitigation bank because any ratios greater than 1:1 cannot be achieved in the limited area at the bridge site. The basic elements of this Habitat Restoration Plan and the mitigation bank purchase are discussed in more detail below.

2.3.2 Wetlands and Other Waters of the United States

2.3.2.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the United States Army Corps of Engineers with oversight by the Environmental Protection Agency.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as the Federal Highway Administration, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game and the Regional Water Quality Control Board. Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Game before beginning construction. If the California Department of Fish and Game determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. California Department of Fish and Game jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the United States Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Game.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The Regional Water Quality Control Board also issues water quality certifications in compliance with Section 401 of the Clean Water Act. Please see the Water Quality section for additional details.

2.3.2.2 Affected Environment

The information presented in this section is summarized from the *Natural Environment Study Report for Mountain View Avenue/Avenue 416 Widening Project, Fresno and Tulare Counties, California* (PAR Environmental Services, Inc. 2007b), the *Draft Mitigation Plan* (PAR Environmental Services, Inc. 2007c), the *Wetland Delineation Report* (PAR Environmental Services, Inc. 2007d) and the *Biological Assessment for Mountain View Avenue/Avenue 416Widening Project, Fresno and Tulare Counties, California* (PAR Environmental Services, Inc. 2007a). All reports were completed in June 2007.

A total of 1.25 hectares (3.1 acres) of potentially jurisdictional wetlands were identified, delineated and mapped adjacent to the channel of the Kings River in scoured depressions and seasonally saturated stream banks within the project area (PAR Environmental Services, Inc. 2007a and 2007d).

Within the Kings River Drainage, 0.47 hectares (1.17 acres) of potential waters of the United States were identified, delineated and mapped within the boundaries of the proposed project (PAR Environmental Services, Inc. 2007d).

Fifteen irrigation or drainage ditches occur in the project area, nine of which meet the waters of the United States criteria because they begin and terminate in Waters of the United States, either the Kings or Tule rivers. These irrigation and drainage ditches include the Ward Irrigation Canal, Caesar Clark Ditch, Traver Canal, Travers Creek, McBriar Ditch, Buttonwillow Ditch, Sand Ridge Ditch, Horseman Ditch and Dinuba Town Ditch. Table 2-36 notes the location, origin, terminus and status of these drainages as water of the United States.

Six of the canals are not considered waters of the United States: the Unnamed Branch Selma Colony Ditch, the Kingsbury Branch Canal, the Santa Fe Canal, the Cole Slough Canal, an unnamed ditch that parallels the southeast side of Road 48 and the Smith Mountain Ditch. These drainages serve as irrigation water conveyances and end in farmland. They do not reenter the

natural regional drainage and flow through canals constructed in uplands. They are not considered waters of the United State by the Army Corps of Engineers (Hirkala pers com).

2.3.2.3 Impacts on Wetlands and other Waters of the United States

At this stage in the environmental document, a preferred alternative has not been identified; however, Alternative 1 has been identified as the environmentally superior alternative. Chapter 1, Section 1.5 Alternatives considered but Eliminated from Further Discussion, describes and compares all project alternatives and their environmental affects.

The Kings River

At the Kings River Bridge, both build alternatives would have identical impacts on wetland areas and waters of the United States.

The proposed project would result in 0.88 hectares (2.18 acres) of temporary impacts and in 0.004 hectares (0.01 acres) of permanent impacts to waters of the United States within the Kings River drainage. Temporary impacts to wetlands would be 0.004 hectares (0.01 acres) and permanent impacts to wetland would be 0.65 hectares (1.61 acres). Table 2-37 summarizes the temporary and permanent impacts from the Kings River Bridge construction.

Variations in the amount of temporary impacts to waters of the United States within the Kings River channel is due to construction methods rather than alternative. The maximum impacts would occur if trestles had to be constructed in the river to support construction equipment and supplies. Both the wetlands on the west and east banks of the Kings River would be affected by construction activities because of their location immediately under the existing bridge.

Table 2-36. Status as Waters of the United States for Drainages and Canals within the Mountain View Avenue 416/Avenue 416/El Monte Way Widening Project Area

Drainage Name (west to east)	Location	Source	End	Jurisdictional Status
Unnamed Branch Selma Colony Ditch	Approx. 0.25 mile east of Bethel Avenue T16S R22E Sec 10 and 15	Kings River via the Consolidated Canal	Ends in farmland south of Avenue 416 in T16S R22E Sec 15	Not a waters of the United States
Ward Drainage Canal	Approx. 0.25 mile west of Academy Avenue T16S R22E Sec 10 and 15	Kings River via the Consolidated Canal	Kings River via Cole Slough T17S R22E Sec 17	Waters of the United States
Kingsburg Branch	Approx. 0.25 mile west of Academy Avenue T16S R22E Sec 10 and 15	Kings River via the Consolidated Canal	Ends in Farmland north of Cole Slough T17S R22E Sec 3	Not a waters of the United States
Cole Slough Canal	Parallels south side Avenue 416 east of Road 32-Smith Avenue T16S R23E Sec 8 and 18	Kings River via the Consolidated Canal	Splits into North and South Branch Island Canal and ends in farmland T17S R22E Sec 18 and 20	Not a waters of the United States
Santa Fe Canal	Parallels south side of Avenue 416 Approx. 0.25 mile east of Madsen Avenue	Kings River via the Consolidated Canal and Cole Slough Canal	Ends in farmland approx. one mile south of Avenue 416 T16S R22E Sec 13	Not a waters of the United States
Kings River	T16 S R23E Sec 8 and 17	Natural drainage with headwaters in the Sierra Nevada	Ends in Tulare Lake, an occasional tributary to the San Joaquin River	Waters of the United States
Ceasar Clark Ditch	0.25 mile east of the Kings River Bridge T16S R23E Sec 9 and 16	Kings River via Alta Main Canal	Kings River via McClanahan Ditch and Traver Canal	Waters of the United States
Ditch	Parallel southeast side of Road 48	Begins at Avenue 416	Unknown	Not a waters of the United States
Mc Briar Ditch	Along Road 52 T16S R 23E Sec 10 and 15	Kings River via Alta Main Canal	Kings River via Traver Canal	Waters of the United States
Buttonwillow Ditch	Along Road 56 T16S R23E Sec 11 and 14	Natural Drainage beginning in T14S R24E NW 1/4 Sec 9	Kings River via Traver Canal	Waters of the United States

Table 2-36. Status as Waters of the United States for Drainages and Canals within the Mountain View Avenue 416/Avenue 416/El Monte Way Widening Project Area *(Concluded)*

Drainage Name (west to east)	Location	Source	End	Jurisdictional Status
Traver Canal	Parallels south side of Avenue 416 from east of Road 64 to Road 52 T16S R23E Sec 12, 14, and 15	Natural drainage beginning T14S R24E SE1/4 SE1/4 Sec32	Kings River at Burris Park	Waters of the United States
Travers Creek	North side of Avenue 416 east of Road 64 turn into Traver Canal on south side of road T16S R23E Sec 12, 14 and 15	Natural drainage beginning in T14S R24E SE1/4 SE1/4 Sec32	Kings River at Burris Park via Tower Canal	Waters of the United States
Sand Ridge Ditch	0.25 mile east of Travers Creek T16S R23E Sec 12	Kings River via Alta Main Canal and Alta East Branch Canal	Tule River via Kennedy Wasteway and Banks Ditch	Waters of the United States
Horseman Ditch	Along Road 72 T16S R23E Sec 12 and 13	Kings River via Alta Main Canal and Alta East Branch Canal	Tule River via Kennedy Wasteway and Banks Ditch	Waters of the United States
Dinuba Town Ditch	Near Southern Pacific Railroad crossing T16S R24E Sec 7 and 18	Kings River via Alta Main Canal and Alta East Branch Canal	Tule River via Banks Ditch	Waters of the United States
Smith Mountain Ditch	Along Crawford Avenue in Dinuba T16S R24E Sec 8 and 17	Kings River via Alta Main Canal and Alta East Branch Canal	Ends at Southern Pacific Railroad in Dinuba	Not a waters of United States

Table 2-37. Impacts to Waters of the United States, Wetlands and Willow Riparian Habitat

Cover Type	Impact Area[1]			
	Temporary		Permanent	
Willow Riparian	0	0	0	0
Other Waters of the United States	95,000 ft^2	2.18 acres	400 ft^2	0.01 acres
Wetlands	500 ft^2	0.01 acres	70,350 ft^2	1.61 acres

[1] ft^2=square feet

Jurisdictional Irrigation Canals or Drainages

All alternatives will require relocation of canals, some of which are considered jurisdictional waters of the United States. The amount of waters of the United States within jurisdictional canals that would be permanently impacted due to encasement/culverting is 1.38 hectares (3.41 acres).

Work in or near the waters of the Kings River, irrigation canals or drainages could result in increased sediment loads, turbidity and siltation if soils or equipment entered the water, adversely affecting fish and other aquatic resources downstream. The accidental introduction of washwater, solvents, oil, chemical wastes, cement, or other pollutants could also adversely affect aquatic life. These potential water quality impacts will be avoided or minimized by implementing mitigation measures described below.

Cumulative Impacts on Wetlands and Other Waters of the United States

With implementation of the mitigation measures, no cumulative impacts to wetlands will occur.

2.3.2.4 Avoidance , Minimization and/or Mitigation Measures

Tulare County will implement measures to avoid or reduce construction impacts on stream, irrigation and drainage canals and wetlands. These measures will be incorporated into the project design as conditions of a California Department of Fish and Game 1600 Streambed Alteration Agreement, a Regional Water Quality Control Board 401 and United States Army Corps of Engineers 404 permit under the Clean Water Act. Specific requirements for reducing impacts would be coordinated with the California Department of Fish and Game, the Regional Water Quality Control Board and the United States Army Corps of Engineers during the agreement process. The 1600 Agreement will also require compensation for loss of riparian vegetation, usually at a ratio of 3:1.

Tulare County will obtain and implement conditions in the Clean Water Act Section 401 Water Quality Certification. This permit will require compensation for fill of waters of the United States, including wetlands, and loss of riparian vegetation.

Permanent impacts to wetlands and waters of the United States exceed 0.2 hectares (0.5 acre). Typically, when impacts permanent impacts to wetlands or waters of the United States exceed 0.2 hectares (0.5 acre), and United States Army Corps of Engineers Individual Permit under

Section 404 of the Clean Water is required. Tulare County will obtain the required United States Army Corps of Engineers Section 404 permit.

In addition, the following avoidance, minimization, and mitigation measures will be implemented by Tulare County.

1. Minimize Impacts to Riparian Habitat and Waters of the United States.

    a. To compensate for temporary and permanent impacts to wetlands, a Habitat Restoration Plan shall be implemented that will restore or create habitat at a ratio greater than 1:1 to be established by the California Department of Fish and Game and the United States Army Corps of Engineers.

    b. Establish Environmentally Sensitive Areas near the Kings River wetlands and stream channels to preclude access to the stream channels and riparian habitat and limit construction access. The Environmentally Sensitive Areas shall be shown on plans and specifications, and shall be delineated on the ground with the assistance of a biologist, prior to construction. Orange fencing or other barriers shall remain in place until all construction and restoration work is complete. Environmentally Sensitive Area pre-construction training shall be conducted.

2. Prepare and Implement Riparian and Wetland Restoration Plan

    a. A Habitat Restoration Plan shall be prepared by a qualified restoration ecologist. The riparian/wetland restoration plan shall be reviewed by Tulare County and shall conform to United States Army Corps of Engineers December 30, 2004 guidelines for Mitigation and Monitoring Plans.

3. Purchase Credits in Regional Mitigation Bank for Riparian/Wetland Compensation

Wetland/riparian restoration on site cannot achieve a 2:1 mitigation ratio (i.e., replacing every acre of wetland impacted with two acres of restored wetland) because of insufficient space in the project area right-of-way along the Kings River. To fully offset the loss of riparian and wetland habitat to a 2:1 ratio or higher, credits shall be purchased in a regional riparian/wetland mitigation bank approved by the California Department of Fish and Game and the United States Army Corps of Engineers.

4. Implement Water Quality Protection Measures Consisting of the State Standard Specifications for Avoidance of Water Pollution (Section 7-1.01 G) and Best Management Practices:

    a. Protect River from Toxic Discharge.
    b. Control Erosion.
    c. Build Cofferdams.
    d. Avoid Direct Discharge of Roadway Runoff.

2.3.3 Plant Species

2.3.3.1 Regulatory Setting

The United States Fish and Wildlife Service and California Department of Fish and Game share regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special-status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act and/or the California Endangered Species Act. Please see the Threatened and Endangered Species section (2.3.5) in this document for detailed information regarding these species.

This section of the document discusses all the other special-status plant species, including California Department of Fish and Game fully protected species and species of special concern, United States Fish and Wildlife Service candidate species, and non-listed California Native Plant Society rare and endangered plants.

The regulatory requirements for the Federal Endangered Species Act can be found at U.S.C 16, Section 1531, et. seq. See also 50 Code of Federal Regulations Part 402. The regulatory requirements for the California Endangered Species Act can be found at California Fish and Game Code, Section 2050, et. seq. Caltrans projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act, Public Resources Code, Sections 2100-21177.

2.3.3.2 Affected Environment

Surveys for special-status plant species and habitat for those species known to occur in the project area were conducted on October 21 and 22, 2001, January 13 and December 13, 2003 and April 30, 2007. A comparison of the California Natural Diversity Database, the California Native Plant Society species list and the U.S. Fish and Wildlife Service Species list for the Reedley, Orange Cove and Selma United States Geological Survey 7.5-minute quadrangles resulted in one special-status plant species with potential to occur in the project area, Sanford's arrowhead (*Sagitarria Sanfordii).* Many of the special-status plant species referenced on the above lists do not occur in the project area because they are only found at higher elevations, or are restricted to very specific soil or hydrologic settings such as vernal pools, alkali playa or clay soils. For many of the United States Fish and Wildlife Service list of potential species in the region, the project area is out of the known or likely range of the plants. The disturbed nature of habitats along the route leaves little opportunity for special-status plants to persist. Those plant species that have any potential to occur in the project area are discussed below. Special-status plant species listed under the Federal Endangered Species Act and California Endangered Species Act as Threatened or Endangered are discussed in subsection 2.3.5, Threatened and Endangered Species.

Sanford's Arrowhead

Sanford's arrowhead is a perennial forb found in sluggish waterways, ditches and margins of slow flowing streams. This species is considered rare and endangered in California by the California Native Plant Society (California Native Plant Society 2001).

During the October 2001 field surveys, a small population of Sanford's arrowhead was discovered in the Dinuba Town Ditch on the west end of Dinuba.

2.3.3.3 Impacts on Plant Species

The proposed project has the potential to adversely affect a small population of Sanford's arrowhead by widening Del Monte Way in the City of Dinuba, at Dinuba Town Ditch. The plant has no state or federal status; however, the California Environmental Quality Act guidelines and the Native Plant Protection Act require an assessment of impacts to any regionally or locally rare species of plants or animals and their habitat, whether or not that species is listed.

2.3.3.4 Avoidance, Minimization and/or Mitigation Measures

- Pre-construction surveys: In the spring, prior to construction, a survey of the project area shall be conducted for Sanford's arrowhead to determine species presence.
- Transplanting: Transplant or relocate the Sanford's arrowhead that will be affected by the project away from the project impact area.
- Mitigation Plantings: In coordination with the California Department of Fish and Game and the United States Fish and Wildlife Service, develop a Mitigation and Monitoring Plan for Sanford's arrowhead. Impacts to Sanford's arrowhead will be mitigated at a ratio agreed upon by the United States Fish and Wildlife Service and California Department of Fish and Game in the newly created wetlands along the Kings River. The backwater pools on the west bank of the river would provide suitable habitat for this species, and would be an appropriate component of a wetland restoration palette.

2.3.3.5 Cumulative Impacts to Sanford's Arrowhead

With implementation of compensatory mitigation and other measures described, no cumulative impacts will occur to Sanford's arrowhead.

2.3.4 Animal Species

2.3.4.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The United States Fish and Wildlife Service, the National Marine Fisheries Service and the California Department of Fish and Game are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5 below. All other special-status animal species are discussed here, including California Department of Fish and Game fully protected species and species of special concern, and United States Fish and Wildlife Service or National Marine Fisheries Service candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1601 – 1603 of the Fish and Game Code
- Section 4150 and 4152 of the Fish and Game Code

2.3.4.2 Affected Environment

Most of the special-status wildlife of Tulare and Fresno counties are associated with particular habitat types that are absent from the project area. A number of regional special-status wildlife species can persist in areas subject to considerable disturbance, and have managed to sustain themselves in highly modified environments such as agricultural lands. The Kings River Bridge and adjacent willow riparian woodland provides habitat for several migratory bird species, cliff swallow and a diverse bat population.

The following list of wildlife species with potential to occur in the project area resulted from a comparison of the California Natural Diversity Database, and the United States Fish and Wildlife Service species list for the Reedley, Orange Cove and Selma United States Geological Survey 7.5-minute quadrangles:

- Cooper's hawk
- Loggerhead shrike
- Swainson's hawk
- White-tailed kite
- Western burrowing owl
- Pacific western big-eared bat
- Pale big-eared bat
- Greater western mastiff-bat
- Pallid bat
- Spotted bat
- Small-footed myotis bat
- Yuma myotis bat
- Long-legged myotis bat
- Western pond turtle
- Fringed myotis bat

The waterways within the Biological Study Area do not provide suitable habitat for special-status fish species including delta smelt, Sacramento splittail, Kern brook lamprey, and longfin smelt.

As described above, the California Environmental Quality Act and other state and federal laws require an assessment of potential impacts to the above listed migrating birds and colony of bats. Table H-2 in Appendix H (Biology) describes the listed, proposed, candidate, and special concern wildlife species that have been recorded in the region, and describes these species' habitat preferences and potential occurrence at the project site. Wildlife species listed under the Federal Endangered Species Act and the California Endangered Species Act that have any potential to occur in the project area are discussed below.

2.3.4.3 Bats

The United States Fish and Wildlife Service special-status list identified ten bat species that could occur in the project vicinity. Bat surveys were conducted in October 2001. The Kings River Bridge supports a large and diverse bat population. Six of seven bridge expansion joints were surveyed, and contained roosting bats. An approximate count of individuals by species observed was as follows: 1,020 Brazilian free-tailed bats; 120 pallid bats; 55 *Myotis* (presumed *yumanensis*), and; 10 *Myotis* spp (possibly *Myotis thysanodes,* although this species has not yet been recorded in the San Joaquin Valley).

Myotis yumanensis and *Myotis thysanodes* are considered a Species of Concern by the United States Fish and Wildlife Service. The pallid bat is considered a Species of Concern by the United States Fish and Wildlife Service and a California Species of Special Concern by the California Department of Fish and Game. The Kings River Bridge provides significant day and night-roosting areas, as well as, maternity roast habitat.

Impacts to Bats

Demolition or rehabilitation of the Kings River Bridge could cause roost abandonment or direct mortality of bat adults or young. Construction during the day in spring and summer could adversely affect bat nursery colonies at a critical phase of breeding, resulting in significant impacts to this diverse breeding colony of bats. Impacts to night roosting individuals and colonies could occur in the form of habitat loss from project activities, including bat eviction, or disturbance if construction was to occur at night. Adverse impacts could also occur even if demolition/construction occurred outside of the breeding season because not all bat species migrate. Some species may overwinter on a bridge structure, exposing them to risk of mortality during construction projects.

Long-term impacts to the bat colony on the Kings River Bridge would occur if the bridge replacing the existing structure did not provide roost habitat. Loss of the Kings River Bridge, as a suitable bat roost site, would be a substantial impact.

Avoidance, Minimization and/or Mitigation Measures

To avoid significant affects to the roosting bats at the Kings River Bridge, a detailed Bat Mitigation and Monitoring Plan will be prepared and implemented prior to construction. The plan will be developed in cooperation with a bat expert, the California Department of Fish and Game and the United States Fish and Wildlife Services. The plan will assess current status of the

bat populations on the bridge and provide detailed specifications on measures to protect bats during bridge demolition and removal. The plan will also provide details on how to replace the breeding and roosting habitat offered by the existing bridge. The mitigation recommendations contained in Appendix H of this Environmental Impact Report/Environmental Assessment (letter report dated December 14, 2004 by Greg Tartanian of Wildlife Research Associates) will be used as guidance in developing the mitigation plan. The plan will be reviewed and approved by California Department of Fish and Game, Caltrans and Tulare County prior to any construction activities on the existing bridge. The Bat Mitigation and Monitoring Plan will include some of the following measures:

- Pre-construction surveys;
- Bats exclusionary measures prior to April 15 of the construction year; and
- Bat eviction measures if bats are found to be present.
- Construction of a 'bat friendly' bridge design that incorporated bat habitat into the new bridge design

Compensation for Loss of Bat Habitat

The new Kings River Bridge with its 'bat friendly design' will provide suitable habitat to accommodate the existing bat colony. An off-structure mitigation roost, such as free-standing bat houses, is unlikely to adequately mitigate for the loss of the bridge roost habitat; off-structure mitigations for bats on bridges have been marginally or not at all effective (Wildlife Research Associates, 2004).

2.3.4.4 Western Pond Turtle

The western pond turtle is listed as a Species of Concern under the Federal Endangered Species Act and a California Species of Special Concern under the California Endangered Species Act. Pond turtles require fairly deep fresh water with ample vegetative cover and secure basking spots, with a diverse invertebrate macrofauna forage base.
Herpetologist Sean Barry surveyed the project area for Western pond turtles on 26, 27 and 28 October 2001. During surveys no sign of Western pond turtle was observed. The Kings River and the canals in the project area may offer marginal aquatic habitat to Western pond turtle, while only the upland areas adjacent to the Kings River may offer upland habitat to Western pound turtle.

Impacts to Western Pond Turtle

Direct impacts to western pond turtles could occur as a result of instream construction in the Kings River or in the project area canals. Construction activities near the river could also temporarily reduce the availability of upland retreat sites for turtles. If pond turtles are present in the river in the immediate vicinity of construction, they can usually disperse away from such disturbance without difficulty.

Widening the Kings River Bridge would result in the permanent loss or disturbance of 0.003 hectares (0.009 acres) waters of the United States in the Kings River and a permanent loss of 0.65 hectares (1.6 acres) of wetlands adjacent to the Kings River.

Avoidance, Minimization and /or Mitigation Measures

To avoid impacts to western pond turtles, a qualified biologist will conduct pre-construction surveys for pond turtles of the Kings River and the canals within the project area. Surveys shall be conducted no more than 24 hours prior to onset of construction. If a turtle is located within the construction area, a qualified biologist shall capture the turtle and relocate it to appropriate habitat a safe distance from the construction site.

Wetland mitigation and riparian vegetation replanting will recreate any western pond turtle habitat lost during construction.

2.3.4.5 Migratory and Special-Status Bird Species

Regulatory Setting

Migratory birds, including raptors such as Cooper's hawks, red-shouldered hawks, white-tailed kites or red-tailed hawk, could nest in the riparian corridor along the Kings River. Tree removal or nearby construction could adversely affect raptors and other nesting migratory birds, and bridge reconstruction or demolition could affect nesting swallows. While these species are not protected under federal or state endangered species acts, California Department of Fish and Game codes (Sections 3503, 3513, and 3800) do protect them from harassment or harm, and also protect their eggs and nestlings. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered a "take" by the California Department of Fish and Game. The federal Migratory Bird Treaty Act (15 U.S.C 703-711), 50 Code of Federal Regulations Part 21, and 50 Code of Federal Regulations Part 10, prohibits killing, possessing or trading in migratory birds. Executive Order 13186 (January 11, 2001) also requires that any project with federal involvement address impacts of federal actions on migratory birds. Protections for nesting and migratory birds are described in the Draft Mitigation Plan (PAR Environmental Services, Inc. 2007c).

2.3.4.6 Burrowing Owl

The western burrowing owl is considered a Species of Concern by the United States Fish and Wildlife Service and a California Species of Special Concern by the California Department of Fish and Game. The burrowing owl is a ground-dwelling bird of prey that lives in arid, open habitats throughout the western hemisphere (Grinnell and Miller 1944).
The California Natural Diversity Data Base does not reveal any records for burrowing owls near the project area. No burrowing owls were observed during wildlife surveys of the project area, however ground squirrel burrows on the banks of canals could provide burrow sites. Ruderal and fallow fields within the project area offer only marginal potential foraging habitat for burrowing owl

Impacts to Burrowing Owl

Some areas of the project area may provide potential foraging habitat to burrowing owls. Construction noise or human disturbance may temporarily prevent burrowing owls to forage in areas adjacent to the project area. No permanent impacts to burrowing owls are expected.

Avoidance, Minimization and/or Mitigation Measures

- Pre-construction Surveys: A qualified wildlife biologist shall conduct preconstruction surveys no more than 14 days prior to construction. Preconstruction surveys shall consist of checking all potential habitat within 250 feet of construction activities. Preferred survey time is from two hours before sunset to one hour after, or from one hour to two hours after sunrise. Survey methodology shall be consistent with accepted burrowing owl survey protocol (California Burrowing Owl Consortium 1993).
- If no burrowing owls are found during pre-construction surveys, no further avoidance, minimization or mitigation measures are required.
- If burrowing owl nests are detected within the project impact or disturbance area, the California Department of Fish and Game shall be contacted immediately to develop and implement a mitigation plan to protect owls and their nest sites. Such a mitigation plan is likely to include establishment of a 250-foot buffer zone around the active burrow. No construction activities shall be permitted within the specified buffer zone until after the breeding season, between February 1 and August 31, or until it is determined that young have fledged.

Cumulative Impacts to Burrowing Owls

With implementation of measures described above, no cumulative impacts to burrowing owls are anticipated.

2.3.4.7 White-Tailed Kite and Cooper's Hawk

The white-tailed kite is considered a Species of Concern by the United States Fish and Wildlife Service and a California Species of Special Concern by the California Department of Fish and Game. White-tailed kites inhabit open cultivated and marshy bottomlands with scattered tall trees, savannah, and grassy foothill slopes interspersed with oaks (Beedy and Granholm 1985). This species breeds from February to October, with a peak from May to August.

The Cooper’s hawk is considered a California Species of Special Concern by the California Department of Fish and Game. Cooper's hawks breed in dense-canopied trees from foothill pine-oak woodlands up to the ponderosa pine forest (Zeiner et al. 1990). No White-tailed Kite or Cooper’s hawk was observed during field surveys, however, the riparian corridor along the Kings River provides potential nesting habitat for these species.

Impacts to White-Tailed Kite and Cooper's Hawk

Cooper's hawks, white-tailed kites, and other migratory birds could nest in the riparian corridor along the Kings River, and tree removal or nearby construction during the nesting season from February 15 to September 1 could adversely affect nesting efforts for these species. Even if direct impacts to the nests are avoided, construction disturbance near the nest sites could cause abandonment of the nests by the adults, resulting in death of eggs or young.

Avoidance, Minimization and/or Mitigation Measures

If construction or tree removal will occur between February 15 and September 1, a qualified biologist shall conduct pre-construction surveys each year in all potential nest sites for nesting birds. Surveys shall be conducted no more than 14 days prior to the initiation of construction activities, and the surveyor shall inspect all trees in the impact footprint and within a 492-foot radius for raptor and other nests. If the surveyor verifies that a nest is empty and young are no longer in the vicinity of the nest tree, tree removal may occur immediately. If the surveyor deems that an active bird nest is within 328 feet of the construction area, the biologist shall contact with California Department of Fish and Game to determine the extent of the construction-free buffer zone to be established around the nest.

Cumulative Impacts to White-Tailed Kite and Cooper's Hawk

With implementation of measures described above, no cumulative impacts to Cooper's hawk and white-tailed kite are anticipated.

2.3.4.8 Cliff Swallows

Hundreds of cliff swallow nests were observed on the underside of the Kings River Bridge during the field survey. Nests were also observed on the underside of box culverts where the Traver Canal and other waterways crossed under roads. Although not considered a special-status species, cliff swallows, the occupied nests and their eggs are protected by both federal and state laws, including the Migratory Bird Act and the California Fish and Game Code Sections 3503, 3513 and 3800.

Impacts to Cliffs Swallows

Construction activities due to demolition or rehabilitation of the existing bridge and culvert replacement could destroy occupied cliff swallow nests, eggs or young. Even if direct impacts to the nests were avoided, construction disturbance near the nest sites could cause abandonment of the nests by the adults, resulting in death of eggs or young.

Avoidance, Minimization and /or Mitigation Measures

To avoid impacts to swallows nesting on the Kings River Bridge and on canal culverts in the project area, contractors conducting work between February 15 and September 1 will take such measures as necessary to prevent nesting on portions of the structures that will cause a conflict between performing necessary work and nesting swallows. These measures are described in detail in the *Draft Mitigation Plan* (PAR Environmental Services, Inc. 2007c) prepared for this project.

Cumulative Impacts to Swallows

With implementation of measures described above, no cumulative impacts to swallows are anticipated.

2.3.5 Threatened and Endangered Species

2.3.5.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: U.S.C., Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the United States Fish and Wildlife Service and the National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of the Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code, Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to off-set project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Game is the agency responsible for implementing the California Endangered Species Act. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. "Take" is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by California Department of Fish and Game. For projects requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, California Department of Fish and Game may also authorize impacts to the California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

2.3.5.2 Affected Environment

A Biological Assessment (PAR Environmental Services, Inc. 2007 a) was prepared to assess effects of the proposed project on listed species that have the potential to occur in the project area. In June 2007 the FHWA initiated Section 7 consultation with the United States Fish and Wildlife Service for the following listed species:

- San Joaquin kit fox
- Valley elderberry longhorn beetle

2.3.5.3 San Joaquin Kit Fox

The San Joaquin kit fox has endangered status under the Federal Endangered Species Act and threatened status under the California Endangered Species Act. The San Joaquin kit fox typically occurs in grassland or mixed shrub/grassland habitats in low, rolling hills or flatlands (United States Fish and Wildlife Service 1998). Its diet consists of California ground squirrels, black-tailed hares, California kangaroo rats, rabbits and insects (United States Fish and Wildlife Service 1998). Kit foxes will forage in some types of agricultural lands where uncultivated land is maintained that can provide denning sites and a suitable prey base. Kit foxes also den on small parcels of native habitat surrounded by intensively managed agricultural lands (United States Fish and Wildlife Service 1998).

Breeding occurs from December through February and the pups generally are born in February and March. San Joaquin kit fox require underground dens and often excavate existing ground squirrel burrows or coyote dens (United States Fish and Wildlife Service 1998). Dens are usually located on loose-textured soils on slopes less than 40 degrees; however, kit fox can also make dens in manmade structures such as culverts, abandoned pipelines and banks in roadbeds (United States Fish and Wildlife Service 1998).

Affected Environment

Tulare and Fresno counties in the vicinity of the project area are within the historic range of the San Joaquin kit fox, but there are no current or historical records for this species within or near the project area. The California Natural Diversity Data Base notes that San Joaquin kit fox have been sighted in the three United States Geological Survey quadrangles searched for this project (Reedley, Orange Cove South, and Selma), but no specific location information is provided. Spotlighting surveys for the San Joaquin kit fox were conducted to the California Department of Fish and Game Region 4 Approved Survey Methodologies for Sensitive Species Protocol on September 26-29 and October 2-3, 2006.

Impacts to San Joaquin Kit Fox

A determination of "may affect, not likely to adversely affect" has been proposed for San Joaquin kit fox based on the following determinations:

- No kit foxes, dens, denning habitat or other San Joaquin kit fox signs were observed during protocol level surveys.
- No historic or current San Joaquin kit fox sightings indicate kit fox presence.
- The Biological Study Area is located outside of the current kit fox range.
- The Biological Study Area provides marginal, low quality, foraging habitat with a high level of disturbance and a limited prey base.
- There are no natural lands located adjacent to the Biological Study Area.

Avoidance, Minimization and/or Mitigation Measures

1. Although kit foxes are not expected to occur in the project area, implementation of the San Joaquin kit fox Contract Special Provisions (Appendix H) listed below will prevent impacts to any San Joaquin kit fox that may traverse the project area during construction.

    a. No more than 30 days prior to construction, a qualified biologist (as defined by the United States Fish and Wildlife Service 1999) shall conduct systematic searches for kit fox dens in all suitable habitat in the proposed work area and in a 200-foot wide buffer around the area. If a den is found, biologists will measure the size, evaluate the shape of the den entrances, and note tracks, scat, prey remains, or recent excavations at the site. Dens shall be classified in one of four den status categories, consistent with those defined by the United States Fish and Wildlife Service:

        - **Potential Den:** any burrow that has an entrance typically five to eight inches in diameter for its entire visible length; a collapsed den will not be considered a potential den site.
        - **Known Den:** any den or artificial structure that is being used or has been used at any time in the past by a San Joaquin kit fox for any activity other than whelping and/or rearing pups. Fresh excavation alone will not be considered adequate sign to classify a den as "known."

        - **Natal or Pupping Den**: any den or artificial structure that is being used or has been used at any time in the past by a kit fox to whelp and/or rear pups.

        - **Atypical Den:** any man-made structure that could become occupied by a San Joaquin kit fox, including pipes, culverts, and diggings beneath slab and buildings.

    b. All dens shall be assigned a number and mapped. Den sites shall be flagged in the field with pin flags marked with the den number. Potential, known, and natal or pupping dens shall be distinguished from each other in the field by the pin flag color.

Information on the size and number of openings, signs of activity, surrounding terrain and habitat type, and distance to concentrations of small mammal prey and other den sites shall be recorded.

c. Disturbance and destruction of dens shall be avoided where possible. However, if potential dens are located within the proposed work area and cannot be avoided during construction, a qualified biologist shall remove these dens by carefully hand excavating them following the procedures described by the United States Fish and Wildlife Service.

d. If a natal or pupping den is found in the survey area, the USWS shall be notified immediately. The United States Fish and Wildlife Service shall also receive notification of the results of preconstruction den searches and den excavations within five days after these activities are completed and before construction begins in the area. The United States Fish and Wildlife Service shall receive written notification of the results within 30 days after these activities are completed.

e. Following preconstruction kit fox den searches and den excavations and before construction, biologists shall establish exclusion zones around the remaining dens following the procedures described by the United States Fish and Wildlife Service. Exclusion zones shall be marked in the field with stakes and flagging. The radius of these zones:

- Potential Den or Atypical Den: 50 feet
- Known Den: 100 feet
- Natal or Pupping Den: To be determined after consultation with United States Fish and Wildlife Service

f. Construction-related activities shall be prohibited or greatly restricted within these zones. Essential vehicle operation on existing roads and foot travel shall be permitted. All other construction activities, vehicle operation, material and equipment storage, and other surface-disturbing activities shall be prohibited within the exclusion zone.

Cumulative Impacts to San Joaquin Kit Fox

With implementation of the measures described above, no impacts will occur to San Joaquin kit fox.

2.3.5.4 Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle is listed as threatened under the Federal Endangered Species Act. These beetles are pith-borers on elderberry shrubs of the Central Valley and foothills up to about 3,000 feet (California Department of Fish and Game 1984). Adult beetles have usually been observed in areas where other riparian vegetation is available.

Frequently, the only exterior evidence of use by valley elderberry longhorn beetle in an elderberry shrub is the exit hole created by the larvae prior to the pupal stage. The beetle has been found in elderberry plants with stems possessing a diameter of one inch or greater. The California Natural Diversity Data Base notes a 1991 record for a valley elderberry longhorn beetle exit hole on the west bank of the Kings River, just north of Dinuba Avenue.

On October 8, 2001 and January 23, 2007 surveys were conducted for valley elderberry longhorn beetles and their host plant in accordance with United States Fish and Wildlife Service guidelines (United States Fish and Wildlife Service 1999). A total of 26 elderberry shrubs were identified within the Biologically Sensitive Area (Figure 2-25) along the east bank of the Kings River in a willow riparian setting. No evidence of the valley elderberry longhorn beetle (i.e., exit holes) was observed on any of the shrubs during the surveys in 2001 and 2007.

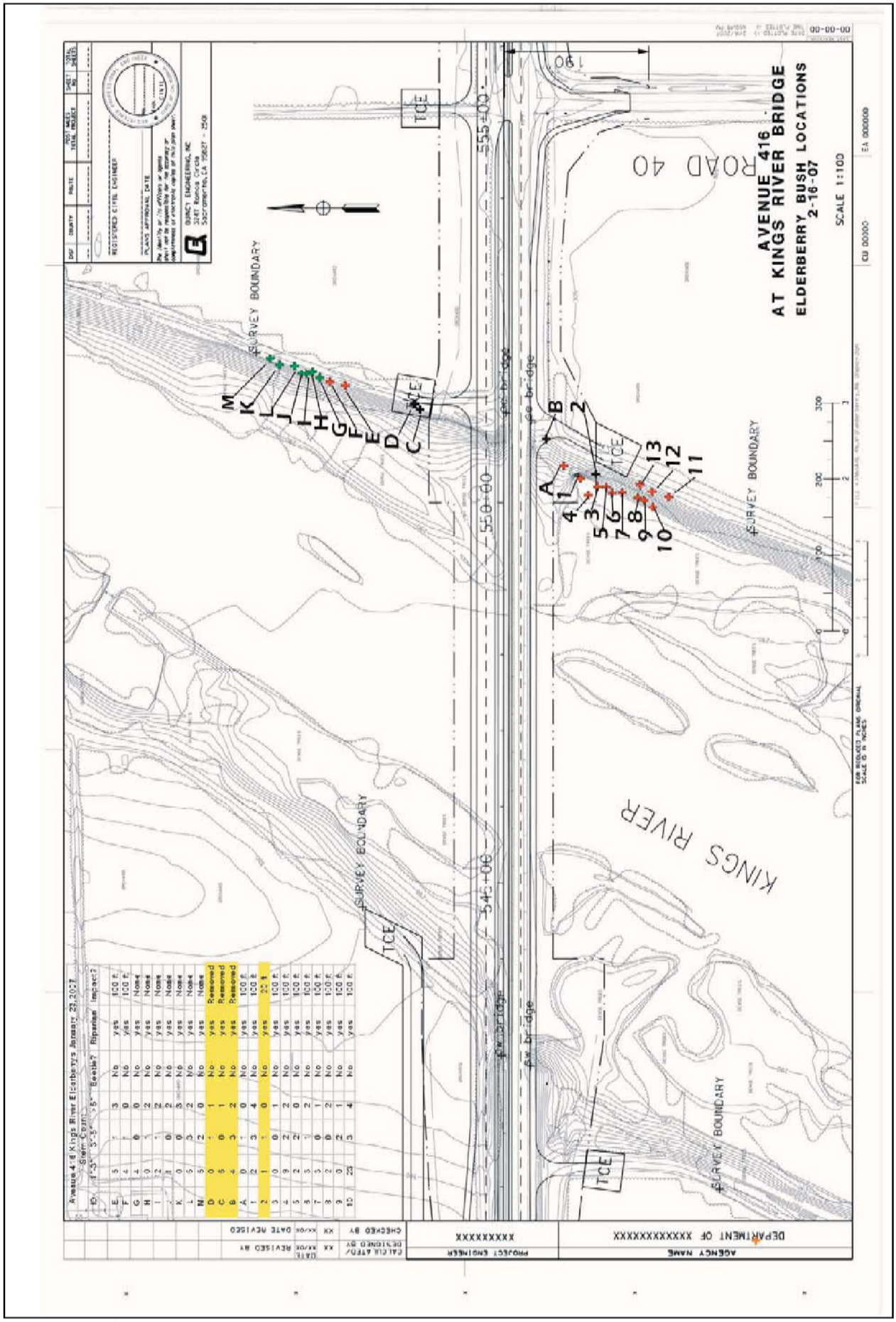


Figure 2-25. Elderberry Shrub Location

Impacts to Valley Elderberry Longhorn Beetle

A determination of "may affect, likely to adversely affect" is proposed for the valley elderberry longhorn beetle because a total of three shrubs will be removed from the Biologically Sensitive Area and one shrub is located within 20 feet of project activities, totaling 19 stems at or over one inch in diameter at ground level.

An additional 15 shrubs are found between 20 and 100 feet from the project area and will be provided with additional mitigation measures to ensure protection during construction.

Avoidance, Minimization and/or Mitigation Measures

Avoidance

The project was modified during the design phase to reduce the potential for construction impacts on elderberry shrubs. The three shrubs that will be removed are immediately adjacent to the existing bridge and are within the construction footprint, which cannot be avoided.

Minimization

Environmentally Sensitive Area Fencing: The establishment of a fenced and signed buffer zone in the form of an Environmentally Sensitive Area prior to onset of construction will minimize potential impact to the elderberry shrubs that are found within the Biologically Sensitive Area greater than 20 feet (Figure 2-26).

Mitigation

Mitigation includes:

- Conducting valley elderberry longhorn beetle pre-construction training;
- Obtaining a biological monitor;
- Transplanting elderberry plants and planting additional seedlings or cuttings at a mitigation ratio determined by the United States Fish and Wildlife Service. Transplant procedures shall follow the recommendations provide in the United States Fish and Wildlife Service guidance letter (1999a).

Cumulative Impacts to the Valley Elderberry Longhorn Beetle

No cumulative impacts to the valley elderberry longhorn beetle will occur with the implementation of the avoidance, minimization and mitigation measures.

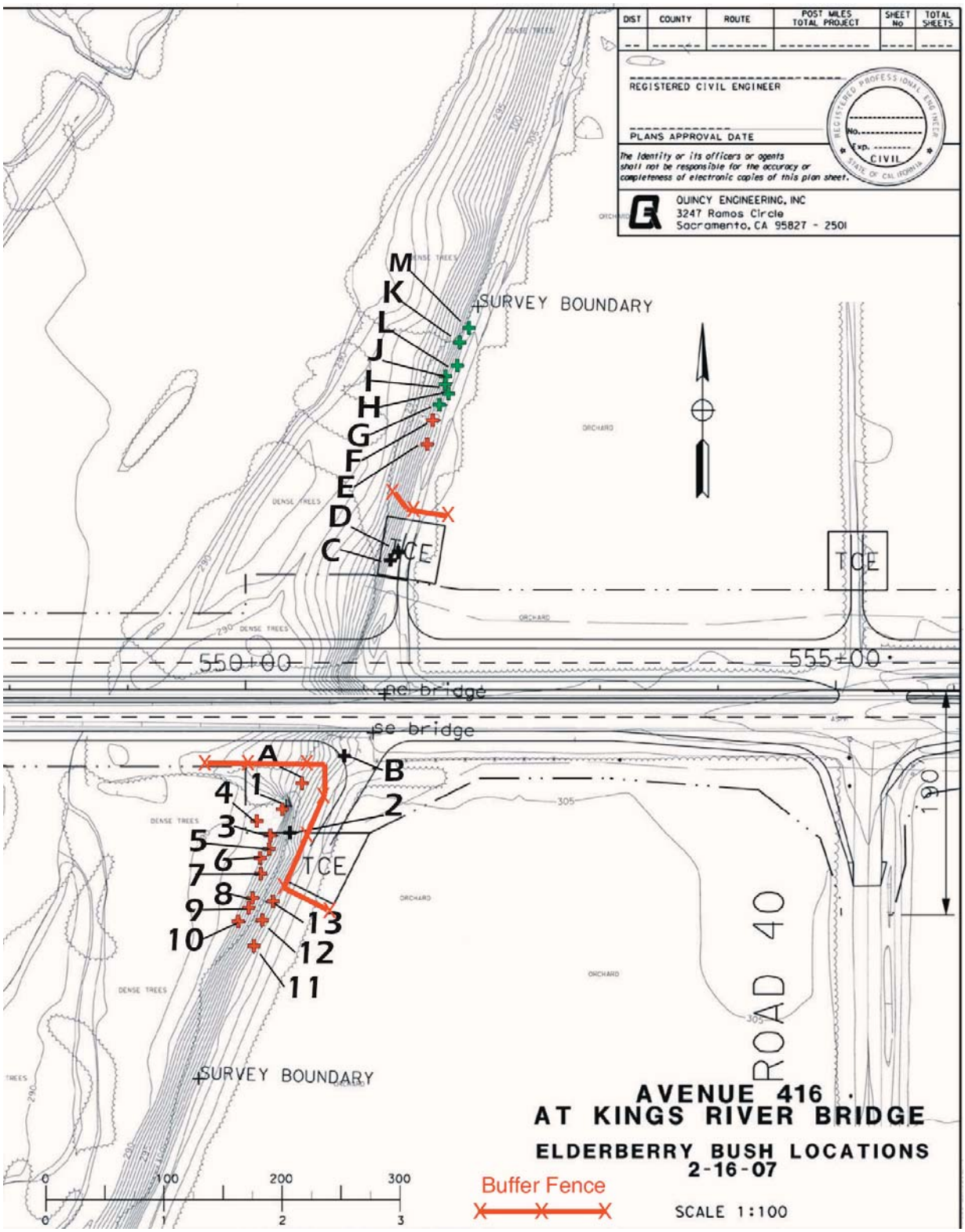


Figure 2-26. Fencing for Environmentally Sensitive Areas for the Elberberry Shrubs

2.3.5.5 Swainson's Hawk

Swainson's hawks are listed as threatened under the California Endangered Species Act. In California, Swainson's hawks have become almost entirely dependent on annual grassland and crops such as alfalfa for foraging habitat. Agriculture and urbanization have eliminated most of the native grasslands that formerly provided foraging habitat for this species.

In the Central Valley, Swainson's hawks typically nest in oaks or cottonwoods in or near riparian habitats (Schlorff and Bloom 1984). Swainson's hawks, which are only summer residents in California, prefer nesting areas that provide nearby foraging grounds of grasslands, irrigated pasture, alfalfa, hay and wheat crops (Bloom 1980).

The California Natural Diversity Data Base did not indicate any records for Swainson's hawk nests in the United States Geological Survey quadrangles in or near the study area. The known nesting sites for this species are more than 12 miles from the study area. While there are no historical or current records for this species nesting within or near the project area, the Kings River riparian woodland could provide nesting sites for this species, with adjacent row crops or fallow fields providing marginal foraging habitat.

Impacts to Swainson's Hawk

If Swainson's hawks are nesting in or near the project area, construction during the breeding season could disturb nesting activities, possibly resulting in loss of young, reduced health and vigor of eggs and/or nestlings.

Row crops in the project area could provide marginal foraging grounds for Swainson's hawks. A maximum of 23.67 acres of ruderal and row crop habitat will be paved and made unavailable for foraging.

Avoidance, Minimization and/or Mitigation Measures

Conduct pre-construction surveys for active Swainson's hawk nests prior to the Swainson hawk nesting season (late March to late August).

If Swainson's hawks are found nesting within 0.5 mile of the project area, implement one the following mitigation measures:

- Avoid construction during the nesting season (late March through late August, or until the young have fledged); or
- Consult with the California Department of Fish and Game.

The California Department of Fish and Game typically requires mitigation for the loss of foraging habitat for Swainson's hawks if the habitat occurs within ten miles of an active nest tree. There are no records for Swainson's hawks nesting within ten miles, but if an active nest is found during pre-construction surveys, mitigation for loss of foraging habitat shall be developed in consultation with the California Department of Fish and Game.

Cumulative Impacts to Swainson's hawk

No cumulative impacts to Swainson's hawk will occur with the implementation of the avoidance, minimization and mitigation measures.

2.3.6 Invasive Species

2.3.6.1 Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem, whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued August 10, 1999 directs the use of the state's noxious weed list to define the invasive plants that must be considered as part of the National Environmental Policy Act analysis for proposed projects.

2.3.6.2 Affected Environment

Some of the noxious weeds that occur in the project area include yellow star thistle, puncture vine, Himalayan blackberry, and arundo. All but one of these weeds (puncture vine) is classified as List A-1 – Most Invasive Wildland Pest by the California Exotic Plant Pest Council. Arundo and star thistle are on the Tulare County list of most invasive weeds (http://cetulare.ucdavis.edu).

2.3.6.3 Impacts to Invasive Species

Construction activities and movement of heavy equipment could promote the spread of these weeds. Weed seed can be carried in soil on tires or under-carriages of vehicles and dropped in disturbed areas predisposed to their establishment. Construction within stands of arundo on the banks of the Kings River could also spread this plant downstream because fragments of this plant can readily reroot and reproduce vegetatively.

2.3.6.4 Avoidance, Minimization and/or Mitigation Measures

In accordance with the Executive Order of Invasive Species, Executive Order 13112, and subsequent guidance from the FHWA, the landscaping and erosion control included in the project shall not use species listed as noxious weeds. Additional precautions to be taken are listed below.

a. To avoid the introduction on new weeds in the project area, only certified weed-free imported material will be used for temporary erosion control, such as sterile straw-wattles or weed-free, sterile rice straw.

b. To avoid the spread of giant reed in the Kings River streambed, all stands of this invasive species within the project impact area will be removed prior to construction.

CHAPTER 3 – CALIFORNIA ENVIRONMENTAL QUALITY ACT EVALUATION

3.1 Determining Significance under the California Environmental Quality Act

The project is subject to federal, as well as county and state environmental review requirements because the County of Tulare proposes the use of federal funds and/or the project requires a federal approval action. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act and the National Environmental Policy Act. The County of Tulare is the project proponent and the lead agency under the California Environmental Quality Act. FHWA's responsibility for environmental review, consultation, and any other action required in accordance with the National Environmental Policy Act and other applicable Federal laws for this project is being, or has been, carried out by the Department under its assumption of responsibility pursuant to 23 U.S.C. 327.

One of the primary differences between the National Environmental Policy Act and the California Environmental Quality Act is the way significance is determined. Under the National Environmental Policy Act, significance is used to determine whether an Environmental Impact Statement, or some lower level of documentation, will be required. The National Environmental Policy Act requires that an Environmental Impact Statement be prepared when the proposed federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under the California Environmental Quality Act may not be of sufficient magnitude to be determined significant under the National Environmental Policy Act. Under the National Environmental Policy Act, once a decision is made regarding the need for an Environmental Impact Statement, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. The National Environmental Policy Act does not require that a determination of significant impacts be stated in the environmental documents.

The California Environmental Quality Act, on the other hand, does require Caltrans to identify each "<u>significant effect on the environment</u>" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report must be prepared. Each and every significant effect on the environment must be disclosed in the Environmental Impact Report and mitigated if feasible. In addition, the California Environmental Quality Act Guidelines list a number of <u>mandatory findings of significance</u>, which also require the preparation of an Environmental Impact Report. There are no types of actions under the National Environmental Policy Act that parallel the findings of mandatory significance of the California Environmental Quality Act. This chapter discusses the effects of this project and the California Environmental Quality Act significance.

3.2 Discussion of Significant Impacts

3.2.1 Significant Environmental Effects of the Proposed Project

The following briefly describes significant impacts that would occur in accordance with the California Environmental Quality Act, but which can be mitigated. Feasible mitigation measures are available that would reduce these effects to a less than significant level. Refer to Chapter 2 for detailed description of the project effects and avoidance and minimization and/or mitigation measures.

3.2.1.1 Significant Effects on Parks and Recreation

Appendix G of the California Environmental Quality Act Guidelines indicates that a significant affect to government facilities (including parks) occurs when a project results in substantial adverse physical impacts associated with altering or constructing governmental facilities. The construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives for any public service.

Both build alternatives would have a significant impact on parkland in the City of Dinuba. Both alternatives would acquire right-of-way from Rose Ann Vuich Park; however, Alternative 1 would require substantially more than Alternative 2 (refer to Parks and Recreation under Subsection 2.1.1, Land Use). The impacts of each Alternative on Rose Ann Vuich Park are depicted in Figures 2-4 and 2-6 in Chapter 2.

In addition to Rose Ann Vuich Park, both build alternatives would affect a triangular-shaped parcel on the south side of El Monte Way at Merced Avenue (shown as Parcel Remnant Merced West in Figures 2-5 and 2-7 in Chapter 2).

3.2.1.2 Significant Effects on Agricultural Resources

Appendix G of the California Environmental Quality Act Guidelines indicates that a significant impact to agricultural resources may occur when a project conflicts with existing zoning for agricultural use or a Williamson Act contract or involves other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use.

Both build alternatives would convert farmland to non-farm uses by acquiring land for road right-of-way. Both build alternatives would require relocation of a portion of the Traver Canal, which would require conversion of adjacent orchards in order to reconstruct the canal; Alternative 1 would relocate 3,805 linear feet of Traver Canal and Alternative 2 would relocate 2,500 linear feet of the canal.

3.2.1.3 Significant Effects to Population and Housing

Appendix G of the California Environmental Quality Act Guidelines indicates that a significant impact to population and/or housing would occur when a project would displace substantial numbers of existing housing or population, necessitating the construction of replacement housing elsewhere.

Both build alternatives would result in residential and business displacement. Refer to Subsection 2.1.4, Community Impacts, for detailed discussion of impacts to population, housing and relocation effects.

Alternative 1

Alternative 1 would require relocation of a total 62 residences, 44 of these within the City of Dinuba, and the remaining 18 residences located in the rural areas of Tulare and Fresno counties. Alternative 1 would require relocation of a total 10 businesses, seven of these within the City of Dinuba, and the remaining three are located in the rural areas of Fresno County.

Alternative 2

Alternative 2 would require relocation of a total 57 residences, 36 of these within the City of Dinuba, and the remaining 21 residences located in the rural areas of Tulare and Fresno counties. Alternative 2 would require relocation of a total seven businesses and two churches; four of the business and the two churches are located within Dinuba. The remaining three businesses are located in the rural sections of the project.

3.2.1.4 Significant Effects on Visual Resources (Aesthetics)

Appendix G of the California Environmental Quality Act Guidelines indicates that a significant impact to Visual Resources (aesthetics) would occur when a project substantially degrades the existing visual character or quality of the site and its surroundings.

Both build alternatives would have the same level of impacts to visual resources. Widening of Mountain View Avenue/Avenue 416 within the rural environment would result in impacts to vineyards, orchards, and row crops, but would not substantially alter the overall character of the visual environment, as agricultural lands would still border the road. However, the removal of vegetation screens at rural residences and businesses would affect visual quality at some locations.

The visual environment within the City of Dinuba would be affected by this project. In some instances, structures that are currently adjacent to El Monte Way would be removed. In other instances, vegetation screening and landscaping would be removed. This would give neighbors a direct view of El Monte Way and in some cases would create new neighbors with a view of the roadway, which did not previously exist. Travelers on El Monte Way would also notice a change in the visual environment. Structures and landscaping would be removed, and the paved area would be wider.

Alternative 1

Under Alternative 1, approximately 60 feet of frontage at Rose Ann Vuich Park would be required for the north side widening. This widening would remove the first tier of mature trees and landscaping. This would substantially change the visual quality in the vicinity of Rose Ann Vuich Park. This impact would be reduced to a less than significant level with the incorporation of mitigation measures.

Alternative 2

Alternative 2 widens to the south and would require removal of the former Maya Theater (now a church) and the landscaped island in front of the theater at the intersection of El Monte Way and Tulare Avenue. This alternative would also remove Christ Believers Church. The removal of the structure would result in a substantial change in visual quality in this location.

3.2.1.5 Significant Effects on Cultural Resources

Appendix G of the California Environmental Quality Act Guidelines indicates that there would be a significant impact to cultural resources if it would cause a substantial adverse change in the significance of a historical resource as defined in 15064.5.

As described in Chapter 2, Subsection 2.1.8.5, there are six properties eligible for the National Register of Historic Places that would be affected by the project. These impacts are considered significant impacts under the California Environmental Quality Act.

There are five additional properties that qualify as historical resources only for the purposes of the California Environmental Quality Act; these properties include a Tudor Revival-style house (Resource No. 17), Colonial Revival-style house (Resource No. 139), Spanish Eclectic-style residence (Resource No. 158), a Folk Victorian-style house (Resource No. 233) and a Prairie-style residence (No. 259). Resource No.'s 17, 139, 158 and 259 meet the California Environmental Quality Act Guidelines Section 15064.5a3C for their architecture. Resource No. 233 is considered an historical resource under the California Environmental Quality Act Guidelines Section 15064.5a3B for its association with Dr. William Whittington, distinguished lung doctor and a leader in the local Dinuba community.

Table 3-1. Impacts to Historical Resources for the Purposes of the California Environmental Quality Act – Alternatives 1 and 2

Ref. No.	Name/Address	APN[1]	Segment	Impacts (ft^2)[2]
139	Olson Estate (Colonial Revival-style house) 12408 E. Mountain View Avenue, Kingsburg	393-072-20	A	7,750
158	McNab Residence (Spanish Eclectic-style house) 15468 E. Mountain View Avenue, Kingsburg	393-090-65	B	43,220 (complete take)
17	Giuste Residence (Tudor Revival-style house) 1496 East El Monte Way, Dinuba	018-023-025	F	876
233	Whittington House (Folk Victorian-style house) 395 East El Monte Way, Dinuba	014-163-012	F	763 Alt 1 742 Alt 2 (complete take)
259	Bolinger House (Prairie-style house) 1375 East El Monte Way, Dinuba	014-243-015	F	2,130

[1]APN= Assessor's Parcel Number
[2]ft^2= square feet, Alt= Alternative

Project effects to properties considered historical resources for the purposes of the California Environmental Quality Act are identical for Alternatives 1 and 2 (see Table 2.27). Widening the road under either alternative would result in a zero setback or actual removal of two properties: the McNab Residence in Fresno County and the Whittington House within the City of Dinuba. The loss of these two California Register historical resources would constitute a significant impact under the California Environmental Quality Act.

The Olsen Estate in Fresno County is set back from Mountain View Avenue. The loss of square footage to accommodate the road widening would result in the removal of a small portion of the orchard that fronts the property, but would not affect characteristics of the historic resource that contribute to its status as an historical resource for the purposes of the California Environmental Quality Act. Therefore, the impacts would be less than significant.

The Guiste Residence within the City of Dinuba would lose a small linear strip of its front yard under both alternatives. The area to be acquired presently contains a lawn. The mature trees and palms associated with the property and the house and garage would not be affected. The loss of a small strip of lawn is not a significant impact.

The Bolinger house is also within the City of Dinuba. Widening of East El Monte Way in front of the house would result in removal of a portion of a decorative iron fence that defines the property boundary. This fence contributes to the setting of the property and its loss would be considered a significant impact under the California Environmental Quality Act.

All of the properties would experience temporary construction easements at the merging of the driveways with Mountain View Avenue/Avenue 416/El Monte Way. These impacts are temporary in nature and would not affect the setting, design, vegetation or other elements that contribute to California Register eligibility. These temporary construction impacts would result in less-than-significant impacts under the California Environmental Quality Act.

3.2.1.6 Significant Effects on Water Quality

Appendix G of the California Environmental Quality Act Guidelines indicates that a significant impact to water quality would occur when a project violates water quality standards or waste discharge requirements. Construction work in or near the waters of the Kings River could result in increased sediment loads, turbidity, and siltation if soils entered the water, or if heavy equipment operates in the stream channel. Increased sedimentation could adversely affect fish and other aquatic resources, as could the accidental introduction of washwater, solvents, oil chemical wastes, cement or other pollutants. These potential impacts are essentially the same for both build alternatives. In addition to construction-related impacts, water quality in Kings River could be adversely affected if additional untreated roadway runoff flows directly to the river. Adverse water quality impacts could also occur in the course of construction within the irrigation canals, as many of these canals flow to the Kings River. Minimization measures are required to ensure procedures are followed to avoid or minimize impacts to water quality.

3.2.1.7 Significant Effects to Hazardous Materials

Appendix G of the California Environmental Quality Act Guidelines indicates that a significant impact related to hazardous materials would potentially occur when a project is located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

The project effects on hazardous materials sites are similar for both build alternatives since there are properties with hazardous materials concerns on both sides of the road. Known, potential and historic hazardous materials sites are present within the project boundaries. The differences between the alternatives are related to which sites are affected and the extent of right-of-way take for those sites. Refer to subsection 2.2.3.4 for the discussion on project effects on hazardous materials sites.

3.2.1.8 Significant Effects on Air Quality

Appendix G of the California Environmental Quality Act Guidelines indicates that a significant impact related to air quality would occur if a project violates any air quality standard or contributes substantially to an existing or projected air quality violation; or results 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 that exceed quantitative thresholds for ozone precursors).

Construction of the proposed project under both build alternatives would result in the generation of air pollutant emissions. The primary pollutant associated with construction activity is particulate matter 10 microns in diameter or smaller, with the primary source of particulate matter 10 microns in diameter or smaller being entrainment of fugitive dust from demolition, land clearing, earth moving, and wind erosion of exposed soil. The San Joaquin Valley Air Basin is a nonattainment area for particulate matter 10 microns in diameter or smaller, and

additions to the particulate matter 10 microns in diameter or smaller problem may be considered an adverse affect.

The generation of construction-related emissions is considered a short-term significant effect. Mitigation measures are required in order to reduce this impact to a less-than-significant level.

3.2.1.9 Significant Effects on Biological Resources

Appendix G of the California Environmental Quality Act Guidelines indicates that there would be a significant impact related to biological resources 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 United States 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 United States 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.

Refer to subsection 2.3 Biological Resources in Chapter 2 for a detailed description of the project's effects on the following biological resources.

The proposed project will result in significant effects to natural communities of special concern associated with the Kings River. There would be no difference between the bridge design options, since they both would have a similar footprint. The habitats of concern are willow riparian habitat and wetlands. Significant effects to Waters of the United States would also result from bridge replacement at the Kings River and from canal relocations in other segments of the project.

The proposed project would potentially result in significant effects to a special-status plant species, Sanford's arrowhead, listed by the California Native Plant Society as rare and endangered.

The proposed demolition and replacement of the Kings River Bridge would have a significant impact on the large bat colony that occupies the existing bridge. If the newly constructed bridge is designed to provide the same resources for bats as the existing bridge, then effects would be reduced to less than significant.

The project has the potential to result in significant effects to raptors, including the white-tailed kite and Cooper's hawk, which nest along the Kings River; significant effects to cliff swallows could also result from demolition and replacement of the Kings River Bridge since these birds nest on the bridge. Construction activities may have a significant impact on burrowing owls; nesting owls might be disturbed, or burrows could be crushed as a result of ground disturbance.

The western pond turtle, if present at the Kings River Bridge site, would be adversely affected by demolition and construction activities.

The proposed project would potentially have significant effects to species listed under the Federal Endangered Species Act and the California Endangered Species Act as threatened or endangered, including the San Joaquin kit fox, Swainson's hawk, California red-legged frog, and the valley elderberry longhorn beetle.

The project would result in significant effects due to dispersal of invasive plant species, which are of special concern along the Kings River.

3.2.2 Unavoidable Significant Environmental Effects

3.2.2.1 Unavoidable Significant Effects on Cultural Resources

Alternative 2 would affect the Maya Theater. The Maya Theater appears to meet Criteria A and C for eligibility to the National Register of Historic Places at a local level for its association with important events in Dinuba's regional history and for its architecture. Under Alternative 2, the Maya Theater would be acquired and removed. Loss of the Maya Theater would be considered an Adverse Effect under Section 106 of the National Historic Preservation Act. To mitigate for the impacts to the former Maya Theater, mitigation measures require that the Tulare County and the City of Dinuba, as project proponents, explore moving the Maya Theater to another location. The structure should be rehabilitated following *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (United States Department of the Interior, National Park Service, 1983; hereafter *Standards and Guidelines*) using the State Historic Building Code (Title 24), in consultation with the State Historic Preservation Officer, Caltrans and FHWA for use as a community center or public information center, or for resale as a community-oriented structure. If this measure is not feasible, the impact would be significant and unavoidable.

3.2.2.2 Unavoidable Significant Noise Effects

Appendix G of the California Environmental Quality Act Guidelines indicates that significant noise impacts occur when the project exposes people to noise levels in excess of standards established in local noise ordinances or general plan noise elements, or causes a substantial permanent or temporary increase in noise levels above levels existing without the project. The local standards for noise are discussed in Chapter 2, subsection 2.2.5 of this Environmental Impact Report/Environmental Assessment.

Based on Table 3-2, a substantial increase in traffic noise levels due to the project is predicted to occur at Receptor R8 for both build alternatives and at Receptors R26, R27 under Alternative 2 (refer to Table 2-46). When compared with the Year 2030 No-Build Alternative noise levels, the noise increase at these receptors with the project would be considered a significant adverse environmental effect in accordance with the California Environmental Quality Act, based on the methodology described below. Mitigation by sound walls is not feasible at these locations because sound walls would block access requirements. Other means of mitigation that have been previously discussed are also not feasible at these locations.

The California Environmental Quality Act does not define what constitutes a "substantial" increase in noise levels. Some guidance is provided by the 1992 finding of the "Federal Interagency Committee on Noise," which assessed changes in ambient noise levels resulting from aircraft operations. The committee's recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. The rationale for the Federal Interagency Committee on Noise recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of the L_{dn} or Community Noise Equivalent Level[10]. Annoyance is a summary measure of the general adverse reaction of people to noise that generates speech interference, sleep disturbance, or interference with the desire for a tranquil environment. Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis for all transportation noises that are described in terms of cumulative noise exposure metrics such as the L_{dn} or Community Noise Equivalent Level. These metrics define noise exposure to terms of average noise exposure during a 24-hour period with penalties added to noise that occurs during the nighttime or evening. Table 3-2 summarizes the FICON recommendations.

Table 3-2 Substantial Increases for Transportation Noise Exposure

Ambient Noise Level Without Project (L_{dn} or CNEL)	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels By:
<60 dB	+5 dB or more
60-65 dB	+3 dB or more
>65 dB	+2 dB or more

Sources: *FICON as applied by Brown-Buntin Associates, Inc.*

3.2.3 Growth Inducing Impacts

Growth-inducing impacts are discussed in Subsection 2.1.3

3.3 Mitigation Measures for Significant Impacts Under the California Environmental Quality Act

CALIFORNIA ENVIRONMENTAL QUALITY ACT MITIGATION MEASURES

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	LAND USE
	PARKS AND RECREATIONAL FACILITIES/ COMMUNITY COHESION
ALTERNATIVE 1	Project proponents will be responsible for replacing approximately 34,990 square feet of parkland acquired from Rose Ann Vuich Park and 1,380 square feet acquired from the landscaped open space area[1] at Mariposa and J Street. The actual replacement requirement should be determined upon final project design since the amount of right-of-way needed may change. 1. Proponents shall incorporate into Rose Ann Vuich Park the remainder of two adjacent

[10] CNEL= Community Noise Equivalent Level (See Appendix E, Page E-3)
L_{dn} = Day/Night Average Sound Level (See Appendix E, Page E-3)

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	parcels along El Monte Way to the east of the park, which would be acquired for road-widening purposes; 2. Proponents shall prepare a landscape plan Subject to the review and approval of the City of Dinuba Parks and Recreation Director, that at a minimum, provides new landscaping in the new park addition area and replaces the landscape along the entire El Monte Way park frontage with similar plantings as those that have been removed. Size of replacement trees shall be twenty-four-inch-box size for trees six inches or larger in diameter at breast height (diameter measured 4.5 feet above ground), and 15-gallon size container for trees smaller than six inches diameter at breast height. 3. A remainder parcel and abandoned portion of Mariposa Avenue, at Mariposa Avenue and El Monte Way, shall be used to construct a park with appropriate landscaping and amenities (e.g., picnic areas and/or limited play equipment) subject to the approval of the City of Dinuba Parks and Recreation Director. The open space parcel at Merced and El Monte Way shall be re-landscaped to restore shade trees, sidewalk and lawn. 4. The balance of the parkland shall be compensated for by purchase of additional parkland at other park locations within the City of Dinuba or improvement of park facilities, either at Rose Ann Vuich Park or other parks within the city. The amount of compensation shall be determined during the appraisal process. 5. Provide landscaping, including shade trees, on the small reminder parcel at Merced Avenue.
ALTERNATIVE 2	Project proponents will be responsible for replacing approximately 3,799 square feet of parkland acquired from Rose Ann Vuich Park and 3,920 square feet acquired from the landscaped open space area located at Mariposa and J Street. The actual replacement requirement should be determined upon final project design since the amount of right-of-way needed may change. 1. Proponents shall prepare a landscape plan Subject to the review and approval of the City of Dinuba Parks and Recreation Director that at a minimum, replaces the landscape along the entire El Monte Way park frontage with similar plantings as those that have been removed. Size of replacement trees shall be twenty-four inch box size for trees six inches or larger in diameter, measured 4.5 feet above ground, and 15-gallon-size container for trees smaller than six inches diameter. 2. The remainder parcel and abandoned portion of Mariposa Avenue, at Mariposa Avenue and El Monte Way, shall be used to construct a park with appropriate landscaping and amenities (e.g., picnic areas and/or limited play equipment) subject to review and approval by the City of Dinuba Parks and Recreation Director. The remnant parcels at I Street and on the east side of the Merced Avenue cul-de-sac, landscaped, provide small open space areas with shade trees and other landscaping as appropriate.
	FARMLANDS
ALTERNATIVE 1 AND ALTERNATIVE 2	Remnant properties shall be sold back to adjacent farm owners. Access to adjacent farm fields shall be maintained for farm equipment. The project shall be designed and constructed to minimize impacts to farm operations.
	RELOCATION EFFECTS/LOW-INCOME POPULATIONS/BUSINESSES AND INSTITUTIONS
ALTERNATIVE 1 AND	<u>Residential Displacement</u> 1. Tulare County and Fresno County as project proponent(s) shall provide standard

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
ALTERNATIVE 2	relocation assistance to both tenants and owner occupants in compliance with Caltrans Relocation Assistance Program and the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Replacement housing must be decent, safe, and sanitary, which means it must meet all of the minimum requirements established by federal regulations and conforms to applicable housing and occupancy codes. (Refer to Appendix D Summary of Relocation Benefits) 2. According to the Uniform Relocation Assistance Program, owner occupants and tenants may be eligible for rental assistance payments of up to $5,250 if rent for comparable housing is higher than the tenant's existing rent. Owner occupants may be eligible for supplemental payments of up to $22,500 in addition to fair market value of their property if comparable housing is not available at a similar cost. If comparable housing is not available, or it is not available within the maximum limits described above, it must be provided before the resident is required to move. The project proponent (s) may : a) Purchase existing comparable residential property and make it available; or b) Relocated and rehabilitate dwellings purchased within the project area and make them available to the displaced residents; or c) Purchase, rehabilitate or construct additions to existing dwellings to make them comparable to a particular displacement property; or d) Compensate for property acquisition in accordance with fair market values based on appraisals. <u>Business Displacement</u> 3. All real property transactions shall comply with the property acquisition and relocation standards of the State of California, the Caltrans Relocation Assistance Program and the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. 4. Property owners shall be compensated in accordance with fair market values based on appraisals. Business owners shall be compensated based on an assessment of the value of the business and any loss of goodwill. 5. All efforts shall be made to identify relocation opportunities for affected businesses and institutions that would reduce the loss of goodwill and historic patronage. Wherever feasible, assistance shall be made available in identifying suitable relocation sites within the service area of existing businesses and institutions.
	VISUAL RESOURCES
ALTERNATIVE 1	

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
AND ALTERNATIVE 2	1. Expansion of the road right-of-way will remove existing landscaping located along Avenue 416. The project proponent shall compensate private property owners for property damages resulting from the removal of landscaping as a result of the project. This would give property owners the option to re-install landscaping if desired. 2. The Habitat Restoration Plan required for the Kings River Bridge area will reduce the adverse visual effects due to disturbance of vegetation at the bridge. Required contents of the plan are described in the Biological Resources section of the Environmental Impact Report. 3. A landscape plan shall be prepared as part of the project design in the City of Dinuba (refer to Avoidance, Minimization and/or Mitigation Measures for Parks and Recreation Facilities). 4. The landscape plan shall be consistent with the following: a) The City of Dinuba General Plan Open Space, Conservation and Recreation Element requires that any trees removed within the City of Dinuba be replaced with tree species specified on the City's Street Tree Master Plan. b) Landscaping added to areas considered gateways into the City of Dinuba shall help to enhance these gateways. One such gateway is the El Monte Way/Alta Avenue intersection, which is identified in the City of Dinuba General Plan Urban Boundary Element. The Community Development Element provides guidelines for these gateways which shall be followed. i) Gateway treatments should include some or all of the following elements: structures, special landscaping and signs. The City of Dinuba and the County of Tulare shall cooperate in designing Gateway treatments. ii) Gateways to the downtown area shall be well marked. c) The Community Design Element of the City of Dinuba General Plan gives guidelines to landscaping along the city's streets. The following guidelines shall be followed: i) Tree wells should be located and designed to maintain views for traffic and pedestrian safety. ii) All signs shall be compatible with the overall streetscape design including the redesign/removal of signs that are disruptive elements. iii) No new outdoor advertising shall be allowed on Alta Avenue or El Monte Way within the limits of the urban area boundary. iv) Establish coordinated and distinctive signage, accent plantings and paving materials for entries into the city at Alta Avenue and El Monte Way. 5. Within the City of Dinuba the landscape plan shall provide for landscaping in medians where median widths can accommodate landscaping and on remnant parcels that remain in public ownership.
	CULTURAL RESOURCES
	ARCHITECTURAL AND HISTORIC RESOURCES
ALTERNATIVE 1	<u>Levis House</u> The Levis House is eligible for its architectural merit. Under Alternatives 1 and 2 the road would be widened to the house, resulting in its acquisition and removal. 1. Prior to demolishing the house, Caltrans shall ensure, in consultation with FHWA and the State Historic Preservation Officer, that the Tulare County Resource Management Agency provide documentation of the structure for the historical record, using a modified Historic American Building Survey/Historic American Engineering Record format. At minimum, the documentation shall include clear photographs using 35 mm black and white film printed in 4-inch by 6-inch format of all sides of the structure, details of unique or representative construction features, interior detailing, and written account of any history of the structure. Overviews of the property capturing its setting and vegetation shall also be provided. Upon approval by the State Historic Preservation Officer, the documentation shall be filed with the State Office of Historic Preservation, Southern

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	San Joaquin Valley Information Center of the California Historical Resources Information System (CHRIS), the Fresno County Library's California History and Genealogy Room in Fresno, the California State University's Henry Madden Library, Special Collections in Fresno, the Annie Mitchell Room of the Tulare County Public Library in Visalia, the California Room of the California State Library in Sacramento, and California Department of Transportation, District 06, Fresno. <u>Nichols House</u> The setting of the Nichols house has already been compromised. Widening of the road would retain the horseshoe shape of the driveway, although a portion of the lawn would be removed. 1. If existing vegetation that contributes to the setting of the property, other than the lawn, is removed then new vegetation should be planted within the new parcel boundary. This vegetation should be the same species as that removed and planted in a one to one ratio. <u>Nelson Estate</u> 1. Removal of the modern row of evergreen trees is not a significant impact. If project plans change and historical vegetation within the fenced area surrounding the house is compromised, then Mitigation Measure 1, described above for the Nichols House should be implemented.
ALTERNATIVE 2	Under Alternative 2 impacts to the Levis House, Nichols House and Nelson Estate are the same as that described for Alternative 1 and mitigation measures described for Alternative 1 apply. In addition, Alternative 2 would result in a loss of the former Maya Theater, a National Register of Historic Places property eligible under Criteria A and C. <u>Maya Theater</u> 1. To mitigate for the loss of local Hispanic history (Criterion A) associated with the former Maya Theater, the project proponent should prepare a three-fold or similar pamphlet, in consultation with the State Historic Preservation Officer, Caltrans and FHWA, describing the history of the Maya Theater, illustrated with contemporary and historic photographs. This pamphlet should focus on the importance of the theater to the Hispanic community and should be produced in both English and Spanish. A minimum of 2,500 copies of the pamphlet should be produced for distribution at City of Dinuba public offices, local libraries, Hispanic organizations, the Alta Historical Society, Annie Mitchell Room of the Tulare County Public Library in Visalia, and the local Chamber of Commerce. The pamphlet shall also be provided in electronic format at appropriate World Wide Web addresses associated with the City of Dinuba and its historical resources. One copy of the pamphlet in each language shall be filed with the State Historic Preservation Officer, the Southern San Joaquin Valley Information Center, the California History Section of the State Library, the Bancroft Library at University of California, Berkeley, Special Collections at California State University Fresno, and Caltrans. 2. Prior to demolishing the theater, Caltrans shall ensure, in consultation with FHWA and the State Historic Preservation Officer, that the project proponent provide documentation of the structure for the historical record, using a modified Historic American Building Survey/Historic American Engineering Record format. At minimum, the documentation shall include clear photographs using 35 mm black and white film printed in 4-inch by 6-inch format of all sides of the structure, details of unique or representative construction features (for example, the marquee and ticket booth), interior detailing and seating arrangements, and a written account of the history of the structure. Upon approval by the State Historic Preservation Officer, the documentation shall be filed with the State Office of Historic Preservation, Southern San Joaquin Valley Information Center of the California Historical Resources Information System (CHRIS), the California State University's Henry Madden Library, Special Collections in Fresno, the Alta Historical Society, the local library in the City of Dinuba, the Annie Mitchell Room of the Tulare County Public Library in Visalia, the

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	California History section in the Tulare County Library, Visalia, the California Room of the California State Library in Sacramento, and California Department of Transportation, District 06, Fresno.
ALTERNATIVE 1 AND ALTERNATVE 2	<u>McNab Residence</u> 1. Both alternatives would result in the road being widened to the front of the McNab Residence, resulting in a zero setback and complete take of the McNab Residence, a property important for its architecture. Project proponent shall complete mitigation measures 1, 2, and 3, described above for the Levis House. Because the McNab Residence is important only under the California Environmental Quality Act, consultation with FHWA is not required prior to removal. <u>Whittington Residence</u> 1. Mitigation measure 1, described above for the Levis House, shall be applied to this property. In addition the following measure is provided to mitigate for the loss of Dr. Whittington affiliated property. 2. To mitigate for the loss of Dr. Whittington's history (Criterion 2) associated with the property, the project proponent should prepare a pamphlet, in consultation with the State Historic Preservation Officer and Caltrans, describing the role Dr. Whittington played in the development of medicine in Dinuba, illustrated with contemporary and historic photographs of the man and his house. A minimum of 500 copies of the pamphlet should be produced for distribution at City of Dinuba public offices, local libraries, the Alta Historical Society, Tulare Public Library History Section in Visalia, and the local Chamber of Commerce. The pamphlet shall also be provided in electronic format at appropriate World Wide Web addresses associated with the City of Dinuba and its historical resources. One copy of the pamphlet in shall be filed with the State Historic Preservation Officer, the Southern San Joaquin Valley Information Center, the California Section of the State Library, the Bancroft Library at University of California, Berkeley, Special Collections at California State University Fresno, and Caltrans. <u>Bolinger House</u> 1. The project proponent shall relocate the iron fence along the new property boundaries, in consultation with the State Historic Preservation Officer and Caltrans. If the existing fence cannot be reused, then the removed section of the iron fence shall be replaced with identical fencing to retain the setting of the landscaping. 2. Vegetation removed along the fence within the exiting property shall be replanted in association with the property fence along the new parcel boundary. If this is not possible, then the trees and shrubs that are removed from the proposed right-of-way will be replaced in kind using a four-to-one replacement ratio.
	ARCHAEOLOGICAL RESOURCES
ALTERNATIVE 1 AND ALTERNATIVE 2	1. If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. 2. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission who will then notify the Most Likely Descendent. At this time, the person who discovered the remains will contact Tulare County so that they may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	5097.98 are to be followed as applicable. 3. A qualified archaeologist will be present during preconstruction geophysical testing of the Kings River riverbank to determine if buried cultural deposits lie within the area of direct impact. If testing demonstrates there is a likelihood of buried archeological deposits, archaeological and Native American monitoring will be conducted during construction of the bridge abutments and all other ground disturbing work along the riverbanks.
	WATER QUALITY AND STORM WATER RUNOFF
ALTERNATIVE 1 AND ALTERNATIVE 2	Potential in-stream impacts to the Kings River water quality can be minimized by adherence to State Standard Specifications for avoidance of water pollution (Section 7-1.01G) and by implementing Best Management Practices. These measures include detailed recommendations for keeping heavy machinery out of the water, limiting the amount of material (excavated or construction materials) that enter the stream, and maintaining flows at all times. The State Standard Specifications require the contractor to prepare a plan to control water pollution during construction. The following measures are recommended to minimize water quality impacts: a. **Protect River from Toxic Discharge.** The contractor shall be required to follow pertinent paragraphs of the California Department of Transportation (Caltrans) manual, California Standard Specifications, Section, 7 – 1.01G which begins, "The contractor shall exercise every reasonable precaution to protect streams . . . from pollution with fuels, oils, bitumen, calcium chloride, and other harmful materials . . ." Construction byproducts and pollutants such as oil, cement, and washwater shall be prevented from discharging into the stream and shall be collected and removed from the site. No equipment may be parked within the immediate watershed of the stream channel. Equipment may be refueled and serviced at an "equipment laydown" area out of the immediate watershed of the Kings River or the canals that drain to a river. b. **Control Erosion.** Silt fencing (or filter fabric) shall be used to catch any short-term erosion or sedimentation that may inadvertently occur. Measures may include but not be limited to the use of sediment basins, hay bales and/or silt fences. This requirement corresponds to California Standard Specifications, Section 7-1.01G, "Where working areas encroach on live streams, barriers to adequately protect the flow of muddy water into streams shall be constructed and maintained between working areas and streams . . ." Ditches should be installed at the top of the cut/toe of fill areas and the bare slopes should be revegetated with non-invasive, native vegetation found within the project study area. c. **Build Cofferdams.** Using non-erodable, clean materials, cofferdams or temporary berms shall be built to keep construction activities out of the live stream. Water from these construction envelopes shall be transported off-site or pumped to sediment or percolation basins. The dams or berms shall not impede the movement of fish at any time. Before the first heavy rains, sediment basins shall be cleaned of accumulated debris and the debris transported outside the area for disposal. d. **Avoid Direct Discharge of Roadway Runoff.** To minimize water quality impacts to the Kings River after the project is complete, no direct discharge of runoff from newly constructed roadways will be allowed to flow to the Kings River or its tributaries. If discharge to the Kings River cannot be avoided, then the runoff should be directed through grassy swales or storm water interceptors constructed at discharge points. These interceptors will remove oil, sediment, and other pollutants that might otherwise flow to the river.

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	HAZARDOUS MATERIALS
ALTERNATIVE 1 AND ALTERNATIVE 2	Avoidance and minimization measures are required for this project. The following mitigation measures shall be followed: 1. Soil will be tested at known and potential hazardous material sites where any right-of-way, permanent or temporary, will be acquired. This especially pertains to Dinuba Exxon and Gas-N-Save where active status and the amount of acquisition proposed make the site directly affected. Groundwater levels need to be established in areas of known hazardous material sites that require right-of-way acquisition. When groundwater levels are confirmed, groundwater testing may be necessary based on depth of construction excavation. 2. Any structures to be demolished will be tested for asbestos containing materials. If asbestos containing materials are found, they must be properly removed prior to demolition. The procedures for inspection, notification, and abatement must be in compliance with San Joaquin Valley Air Pollution Control Board Asbestos Requirements for Demolitions and Renovations and are as follows: b. Inspection (i) An asbestos inspection must be performed prior to any regulated demolition. (ii) California-Occupational Safety and Health Act regulations in California Labor Code requires asbestos consulting services be done by or under the direction of a California-Occupational Safety and Health Act certified consultant. (iii) The San Joaquin Valley Air Pollution Control Board requires inspection reports to include: • A schematic showing the location of all tested materials • The following data for all asbestos-containing material: • The amount and description of each material • Percent asbestos content • Whether or the not the material is friable • A report of the asbestos inspection must be received with each demolition notification. c. Notification i) An asbestos notification must be submitted to San Joaquin Valley Air Pollution Control Board at least 10 working days prior to any regulated demolition. d. Asbestos Abatement i) Asbestos containing materials discovered during the inspection process must be removed properly prior to demolition. Employees engaged in asbestos abatement work must be properly trained and equipped for this work in accordance to California-Occupational Safety and Health Act regulations. The California-Occupational Safety and Health Act and National Emission Standards for Hazardous Air Pollution regulations have specific work practice requirements that must be followed during the removal of these materials, waste handling, transportation, and disposal.

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	3. Any structure to be demolished will be tested for lead-based paints. If these materials are found within the structure, transportation and disposal will be determined based on lead concentration as mandated in California's Health and Safety Code 25157.8. b) Health and Safety Code 25157.8 states that all types of waste, including demolition debris, with a total lead concentration greater than 350 parts per million disposed of in California must be disposed of at a Class 1 hazardous waste landfill or at other landfills which have specific permits to accept these wastes. The waste is not considered hazardous in California unless it measures 1,000 parts per million total threshold limit concentration and 5 parts per million soluble threshold limit concentration. Therefore, waste which does not meet the hazardous threshold but does measure 350 parts per million for total lead concentration would not require a hazardous waste manifest or registered hazardous waste transporter when transporting for disposal to a Class 1 landfill. 4. Pavement striping subject to construction disturbance or removal will be tested for lead-based paints. If these materials are found within the pavement, transportation and disposal will be determined based on lead concentration as mandated in California's Health and Safety Code 25157.8. See discussion above on California's Health and Safety Code. 5. All unauthorized dumping shall be cleaned in conjunction with construction of the project. 6. Any right-of-way acquisition of current (in Fresno and Tulare counties) or past, undeveloped (in the City of Dinuba) agricultural land must be investigated through the county's Agricultural Commissioner's office for types of pesticides/herbicides used and method of application prior to construction. The need for soil testing for residuals will be based on those investigations (see discussion under Materials of Concern-Pesticides/Herbicides). If all three of the following conditions are present, then soil testing shall take place: 1) historic use indicates probable presence in the right-of-way; 2) the pesticide/herbicide used has a long life; 3) the pesticide/herbicide used has a low water solubility. In addition, soil testing must be completed on properties that have either agricultural-related structures near the roadway or are near to or include drainage channels and canals. If soils are found to be contaminated following testing, then the provisions from the certified soil tester and the Department of Toxic Substance Control guidelines on pesticides/herbicides concentrations will be followed and carried out when handling the contaminated soils.
	AIR QUALITY
	CONSTRUCTION EFFECTS
ALTERNATIVE 1 AND ALTERNATIVE 2	1. All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, vegetative ground cover or chemical stabilizer/suppressant that is certified or "pre-certified " by the California Environmental Protection Agency. 2. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. 3. All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. 4. When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained. 5. All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.) 6. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. 7. Limit traffic speeds on unpaved roads to 15 miles per hour (mph); and 8. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
	BIOLOGICAL RESOURCES
	WILLOW RIPARIAN WOODLAND
	No impacts are anticipated during construction of this project. If, during construction, willow riparian forest habitat is impacted, keeping the road access and vehicle turnaround areas as small as possible within this sensitive habitat type can minimize the effects. A Habitat Restoration Plan shall be prepared and implemented to restore or create riparian habitat at a ratio greater than 1:1. The final mitigation ratio shall be established after consultation with the California Department of Fish and Game, United States Fish and Wildlife Service and United States Army Corps of Engineers. To partially achieve the goal of riparian mitigation/compensation, the disturbed riparian habitat on the site will need to be restored after construction. In addition, riparian mitigation credits shall be purchased in a regional mitigation bank because any ratios greater than 1:1 cannot be achieved in the limited area at the bridge site. The basic elements of this Habitat Restoration Plan and the mitigation bank purchase are discussed in more detail below.
	WETLANDS AND OTHER WATERS OF THE UNITED STATES
ALTERNATIVE 1 AND ALTERNATIVE 2	1. Minimize Impacts to Riparian Habitat and waters of the United States. a. To compensate for temporary and permanent impacts to wetlands, a wetland restoration/compensation plan shall be implemented that will restore or create habitat at a ratio greater than 1:1 for the wetlands that are lost. The final mitigation ratio shall be established after consultation with the California Department of Fish and Game, United States Fish and Wildlife Service, and United States Army Corps of Engineers. To achieve this goal of wetland mitigation/compensation, a Habitat Restoration Plan should be prepared and implemented to restore the disturbed riparian habitat on the site after construction. In addition, because ratios greater than 1:1 cannot be achieved in the limited area at the bridge site, wetland credits shall be purchased in a regional mitigation bank. The main components of this Habitat Restoration Plan and the mitigation bank purchase are summarized below b. Establish Environmentally Sensitive Areas to limit work areas near Kings River willow riparian habitat and stream channel to the minimum possible area. The Environmentally Sensitive Areas shall preclude access to the stream channel and riparian habitat along the Kings River except as necessary for construction access. The boundaries of the Environmentally Sensitive Areas shall be marked in the field with the assistance of a biologist or environmental monitor. Boundaries shall be shown on plans and specifications, and shall also be delineated on the ground prior to construction with temporary orange safety fencing. Fencing or other barriers shall remain in place until all construction and restoration work involving heavy equipment is complete. Pre-construction training shall be conducted to inform work crews about required measures for protection of Environmentally Sensitive Areas. 2. Prepare and Implement Riparian and Wetland Restoration Plan a. To restore disturbed habitat at the site of the newly constructed Kings River

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	Bridge, a Habitat Restoration Plan be prepared by a qualified restoration ecologist and shall adopt an adaptive management approach to allow improvements to the plan as more information is available. The riparian/wetland restoration plan shall be reviewed by Tulare County and shall conform to United States Army Corps of Engineers December 30, 2004 guidelines for Mitigation and Monitoring Plans, and should include at least the following elements: • Project Description • Goal of Mitigation • Final Success Criteria • Proposed Mitigation Site • Implementation Plan • Maintenance During Establishment Period • Monitoring Plan b. The restoration plan shall be developed in consultation with the California Department of Fish and Game and the United States Army Corps of Engineers as this plan will be a necessary element of the California Department of Fish and Game Streambed Alteration Agreement and the United States Army Corps of Engineers Section 404 permit. 3. Purchase Credits in Regional Mitigation Bank for Riparian/Wetland Compensation The wetland/riparian restoration mitigation ratio will be determined in consultation with the California Department of Fish and Game and the United States Army Corps of Engineers. In the past, a minimum ratio of 2:1 has been required; however, a ratio of 3:1 is common. Wetland/riparian restoration on site cannot achieve a 2:1 mitigation ratio (i.e., replacing every acre of wetland impacted with two acres of restored wetland) because of insufficient space in the project area right-of-way along the Kings River. To fully offset the loss of riparian and wetland habitat to a 2:1 ratio or higher, credits shall be purchased in a regional riparian/wetland mitigation bank approved by The California Department of Fish and Game and the United States Army Corps of Engineers. The mitigation ratio and amount of credit needed shall be established after consultation with California Department of Fish and Game and the United States Army Corps of Engineers. The amount of credits to be purchased shall be the difference between the total impact and the amount that is slated for on-site revegetation in the restoration plan. Prior to the project proponent's participation on the mitigation bank, the bank must meet the approval of California Department of Fish and Game and the United States Army Corps of Engineers. 4. Implement Water Quality Protection Measures Potential instream impacts to the Kings River aquatic resources and fisheries can be minimized by adherence to State Standard Specifications for avoidance of water pollution (Section 7-1.01G) and by implementing Best Management Practices. The following measures are recommended to minimize water quality impacts, and are discussed in more detail in the Draft Mitigation Plan (PAR Environmental Services, Inc. 2007c): a. Protect River from Toxic Discharge. The contractor shall be required to follow pertinent paragraphs of the Caltrans manual, California Standard Specifications, Section, 7 – 1.01G). b. Control Erosion. Silt fencing (or filter fabric) shall be used to catch any short-term erosion or sedimentation that may inadvertently occur. Measures may include use of sediment basins, hay bales and/or silt fences. c. Build Cofferdams. Using non-erodable, clean materials, cofferdams or temporary berms shall be built to keep construction activities out of the live

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	stream. d. Avoid Direct Discharge of Roadway Runoff. To minimize water quality impacts to the Kings River after the project is complete, no direct discharge of runoff from newly constructed roadways shall be allowed to flow to the Kings River or its tributaries.
	SPECIAL-STATUS PLANT SPECIES
ALTERNATIVE 1 AND ALTERNATIVE 2	In the spring, prior to construction, a survey of the project area shall be conducted for Sanford's arrowhead. If populations of Sanford's arrowhead are observed in canals or ditches that will be affected, this plant shall be mitigated (at a ratio agreed upon by the United States Fish and Wildlife Service and California Department of Fish and Game) in the newly created wetlands along the Kings River. The backwater pools on the west bank of the river would provide suitable habitat for this species, and would be an appropriate component of a wetland restoration palette. In addition, the local chapter of the California Native Plant Society shall be contacted to offer the option of salvaging the Sanford's arrowhead that will be affected by the project.
	WILDLIFE
ALTERNATIVE 1 AND ALTERNATIVE 2	**Bats** To avoid significant affects to the roosting bats at the Kings River Bridge, the following measures should be implemented for day and night roosts: *Day Roosts:* a. A survey by a qualified bat biologist shall be conducted before exclusion and/or eviction is performed, in order to verify that bats are not present in the expansion joint(s). b. Bats shall be excluded from directly affected work areas by a qualified biologist prior to April 15 of the construction year. Exclusion shall be done selectively and only to the extent necessary to prevent acute morbidity or mortality to the colony. c. If bats are found to be present in any expansion joints, bats shall be evicted from the crevice under supervision of the bat biologist. Eviction is accomplished by packing portions of the expansion joint, then installing one-way exits at locations determined by the bat biologist. One-way exits shall remain in place for at least seven days, then the expansion joint will be inspected to ensure bats have vacated the joint. The one-way exists shall then be removed, and the remaining openings blocked with exclusion materials. d. Exclusion is accomplished by packing the expansion joints with foam pipe insulation material, one-quarter-inch hardware cloth, or expandable foam. e. If a survey by a qualified bat biologist reveals no bats in any expansion joint, that joint must be sealed within 24 hours, as described above. f. If swallow exclusion netting is installed, it shall not be used as bat exclusion material over day roost crevices; it may entangle bats attempting to enter the roost crevice, and could provide a foothold directly beneath the crevice, which confused bats might continue to use for extended periods. g. All exclusion materials shall be removed after completion of construction activities to allow bats to reoccupy the bridge structure. *Night Roosts:* a. Work shall not occur within 100 feet of the bridge between sunset and sunrise. b. Airspace access to and from the bridge shall not be severely restricted. c. Clearing and grubbing shall be minimized where possible. d. Combustion equipment such as generators, pumps, and vehicles shall not be parked or operated under or adjacent to the structure. e. Personnel shall not be present under the colony, especially during the evening exodus.

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	f. Swallow exclusion netting shall be installed as described above, and so that it does not cover or interfere with any occupied expansion joint. g. Netting must be removed after completion of construction activities to allow bats to reoccupy the bridge structure.
ALTERNATIVE 1 AND ALTERNATIVE 2	*Compensation for Loss of Bat Habitat* The new bridge or an alternate structure needs to provide suitable habitat to accommodate the existing bat colony. An off-structure mitigation roost, such as free-standing bat houses, is unlikely to adequately mitigate for the loss of the bridge roost habitat; off-structure mitigations for bats on bridges have been marginally or not at all effective (Wildlife Research Associates, 2004). When the final bridge design is developed, a final bat mitigation plan shall be prepared to assess current status of the bat populations on the bridge and to provide detailed specifications on measures to protect bats during bridge demolition and removal. The final bat mitigation plan shall also provide details on how to replace the breeding and roosting habitat offered by the existing bridge. This bat mitigation plan shall adopt an adaptive management approach to allow improvements to the plan as more information is available. The mitigation recommendations contained in Appendix H of this Environmental Impact Report/Environmental Assessment (letter report dated 12/14/04 by Greg Tartarian) shall be used as guidance in developing the mitigation plan. This bat mitigation plan shall be reviewed and approved by California Department of Fish and Game, Caltrans Tulare County prior to any construction activities on the existing bridge. Many of the elements that need to be included in this mitigation have already been developed and are described in reports by Wildlife Research Associates (2001, 2003, 2004). The overall goal is to replace the existing bridge expansion joint with some sort of suitable crevice roost habitat. Lateral interstices between bulb-T girders, such as where girders rest on pier platforms, would create cavities similar to those found in the existing bridge. If the new bridge is a box girder design, it shall provide access openings into box cavities, although such cavities will not provide habitat for pallid bats and other crevice-roosting bats. Cavities shall limit access to humans and predators. Entrances into the cavities shall be at least four to six inches by 14 feet with a clear flight path in and out. Modifications to access doors and coverings, or utility access plates can provide suitable openings. One entrance per cell shall be provided to permit future partial exclusion if needed. Diaphragms between sections shall be modified within engineering limits to allow passage by bats between cells. The passage shall be consistent with passage used for utilities. **Western Pond Turtle** To avoid impacts to western pond turtles, a qualified biologist for western pond turtles shall conduct a preconstruction survey of the Kings River and the canals within the project area. Surveys shall be conducted no more than 24 hours prior to onset of construction. If a turtle is located within the construction area, a qualified biologist shall capture the turtle and relocate it to appropriate habitat a safe distance from the construction site.
	MIGRATORY BIRDS AND SPECIAL-STATUS BIRD SPECIES
ALTERNATIVE 1 AND ALTERNATIVE 2	**Burrowing Owls** Avoid Disturbing Active Burrowing Owl Nests and Winter Burrows a. To avoid impacts to nesting burrowing owls or winter burrows, a qualified wildlife biologist shall conduct preconstruction surveys no more than 14 days prior to construction. Preconstruction surveys shall consist of checking all potential habitat within 250 feet of construction activities. Preferred survey time is from two hours before sunset to one hour after, or from one hour to two hours after sunrise. Survey methodology shall be consistent with accepted burrowing owl survey protocol (California Burrowing Owl Consortium 1993)

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	b. If burrowing owl nests are detected within the project impact or disturbance area, California Department of Fish and Game shall be contacted immediately to develop and implement a mitigation plan to protect owls and their nest sites. Such a mitigation plan is likely to include establishment of a 250-foot buffer zone around the active burrow. No construction activities shall be permitted within the specified buffer zone until after the breeding season, between February 1 through August 31, or until it is determined that young have fledged. If construction will occur during the non-breeding season (September 1 through January 31) preconstruction surveys shall consist of visually checking all potential habitat in areas in which ground-disturbing activities will occur. **Cooper's Hawks, White-Tailed Kites, and Other Migratory Birds** If construction or tree removal will occur between February 15–September 1, a qualified biologist shall conduct pre-construction surveys each year in all potential nest sites for nesting birds. Surveys shall be conducted no more than 14 days prior to the initiation of construction activities, and the surveyor shall inspect all trees in the impact footprint and within a 492-feet radius for raptor and other nests. If the surveyor verifies that a nest is empty and young are no longer in the vicinity of the nest tree, tree removal may occur immediately. If the surveyor deems that an active bird nest is close enough to the construction area to be disturbed, he or she shall (in consultation with California Department of Fish and Game) determine the extent of the construction-free buffer zone to be established around the nest. **Swallows** To avoid impacts to swallows nesting on the Kings River Bridge and on canal culverts in the project area, contractors conducting work between February 15 and September 1 shall take such measures as necessary to prevent nesting on portions of the structures that will cause a conflict between performing necessary work and nesting swallows. These measures are described in detail in the Draft Mitigation Plan (PAR Environmental Services, Inc. 2007c) prepared for this project.
	THREATENED AND ENDANGERED SPECIES
ALTERNATIVE 1 AND ALTERNATIVE 2	**San Joaquin Kit Fox** Avoid Direct Impacts to San Joaquin kit fox with implementation of San Joaquin kit fox contract special provisions (Appendix H) and with following measures. a. No more than 30 days prior to construction, a qualified biologist (as defined by the United States Fish and Wildlife Service 1999) shall conduct systematic searches for kit fox dens in all suitable habitat in the proposed work area and in a 200-foot wide buffer around the area. If a den is found, biologists will measure the size, evaluate the shape of the den entrances, and note tracks, scat, prey remains, or recent excavations at the site. Dens will be classified in one of four den status categories, consistent with those defined by the United States Fish and Wildlife Service: • **Potential Den:** any burrow that has an entrance typically five to eight inches in diameter for its entire visible length; a collapsed den will not be considered a potential den site. • **Known Den:** any den or artificial structure that is being used or has been used at any time in the past by a San Joaquin kit fox for any activity other than whelping and/or rearing pups. Fresh excavation alone will not be considered adequate sign to classify a den as "known."

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	• **Natal or Pupping Den**: any den or artificial structure that is being used or has been used at any time in the past by a kit fox to whelp and/or rear pups. • **Atypical Den:** any man-made structure that could become occupied by a San Joaquin kit fox, including pipes, culverts, and diggings beneath slab and buildings. b. All dens shall be assigned a number and mapped. Den sites shall be flagged in the field with pin flags marked with the den number. Potential, known, and natal or pupping dens shall be distinguished from each other in the field by the pin flag color. Information on the size and number of openings, signs of activity, surrounding terrain and habitat type, and distance to concentrations of small mammal prey and other den sites shall be recorded. c. Disturbance and destruction of dens shall be avoided where possible. However, if potential dens are located within the proposed work area and cannot be avoided during construction, a qualified biologist shall remove these dens by carefully hand excavating them following the procedures described by the United States Fish and Wildlife Service. d. If a natal or pupping den is found in the survey area, the USWS shall be notified immediately. The United States Fish and Wildlife Service shall also receive notification of the results of preconstruction den searches and den excavations within five days after these activities are completed and before construction begins in the area. The United States Fish and Wildlife Service will receive written notification of the results within 30 days after these activities are completed. e. Following preconstruction kit fox den searches and den excavations and before construction, biologists shall establish exclusion zones around the remaining dens following the procedures described by the United States Fish and Wildlife Service. Exclusion zones shall be marked in the field with stakes and flagging. The radius of these zones: • Potential Den or Atypical Den: 50 feet • Known Den: 100 feet • Natal or Pupping Den: To be determined after consultation with United States Fish and Wildlife Service f. Construction-related activities shall be prohibited or greatly restricted within these zones. Essential vehicle operation on existing roads and foot travel shall be permitted. All other construction activities, vehicle operation, material and equipment storage, and other surface-disturbing activities will be prohibited within the exclusion zone. **Swainson's Hawk** 1. Conduct Preconstruction Surveys for Active Swainson's hawk Nests and Compensate for Loss of Foraging Habitat a. If construction is proposed during the Swainson's hawk nesting season (late March to late August), nesting surveys will be conducted before construction in areas that are considered potentially suitable habitat for Swainson's hawk nesting. Suitable sites contain trees large enough to support a Swainson's hawk nest and that are within 0.5 mile of the boundary of the project area. Survey protocol shall be consistent with accepted Swainson's hawk survey guidelines (Swainson's hawk TAC 2000). b. If Swainson's hawks are found to be nesting within 0.5 mile of the project area, one

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	of the following mitigation measures shall be implemented to avoid disturbance to nesting birds and young: • Avoid construction during the nesting season (late March – late August, or until the young have fledged); or • Through consultation with California Department of Fish and Game, have a biologist with Swainson's hawk or other raptor experience evaluate potential for disturbance of the pair during construction based on the level of ongoing disturbance (e.g., by farming activities or road traffic) and the observed sensitivity of the birds to ongoing activities, and establish and maintain an appropriate buffer for construction activities that can be adjusted based on changes in sensitivity exhibited by the hawks over the course of the nesting season. 2. California Department of Fish and Game typically requires mitigation for the loss of foraging habitat for Swainson's hawks if the habitat occurs within 10 miles of an active nest tree. There are no records for Swainson's hawks nesting within 10 miles, but if an active nest is found during preconstruction surveys, mitigation for loss of foraging habitat shall be developed in consultation with California Department of Fish and Game. This mitigation shall be consistent with accepted Swainson's Hawk mitigation guidelines (Swainson's Hawk TAC 2000). **Valley Elderberry Longhorn Beetle** Because work will be conducted within 100 feet of elderberry shrubs and at least three shrub will be removed, consultation with the United States Fish and Wildlife Service will be required for guidance and permitting. Incidental take permitting is required for construction related impacts to the Valley elderberry longhorn beetle or their habitat. The United States Fish and Wildlife Service has prepared the *Consultation Guidelines for the Valley Elderberry Longhorn Beetle* (1999) to assist federal agencies and non-fedral project applicants needing incidental take authorization through a Section 7 consultation or a section 10(a)(1)(B) permit in developing measures to avoid and minimize adverse effects on the Valley elderberry longhorn beetle. In addition, the following mitigation measures will be implemented: 1. Conduct pre-construction surveys for elderberry shrubs and stem counts to ensure that no new elderberry shrubs have established themselves. 2. Prior to construction, all areas to be avoided during construction activities will be fenced and flagged as Environmentally Sensitive Area. In areas where encroachment on the 100-foot buffer has been approved by the United States Fish and Wildlife Service, a minimum Environmentally Sensitive Area setback of at least 20 feet from the dripline of each elderberry plant will be provided. 3. Conduct Valley elderberry longhorn beetle pre-construction training of all work crews and contractors, instructing the contractor and all work crews on the status of the beetle and the need to protect its elderberry host plant. 4. A biological monitor should make weekly inspections of the project site to maintain fencing and signage during construction. The contractor shall be liable to repair Environmentally Sensitive Area fencing and signage if required. The contractor will provide erosion control as needed and restore, with assistance of the biological monitor, any damage done to the buffer area including weeding and trash removal during construction. 5. No construction related insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant should be used in the Environmentally Sensitive Area, or within 100 feet of any elderberry plant with one or more stems measuring one inch or greater in diameter at ground level.

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	6. No mowing of grasses/ground cover will occur within five feet of elderberry plant stems. 7. Transplant elderberry plants and plan additional seedlings or cuttings: Four elderberry shrubs will be directly affected by removal or by being located within 20 feet of the construction area. Three of the four shrubs will be transplanted to a United States Fish and Wildlife Service-approved mitigation bank. Transplant procedures shall follow the recommendations provided in the United States Fish and Wildlife Service guidance letter (1999a). The mitigation site will be approved by the United States Fish and Wildlife Service during Section 7 formal consultation. The mitigation measures are in accordance with United States Fish and Wildlife Service guidelines (United States Fish and Wildlife Service 1999a). Mitigation in the form of planting replacement elderberry seedlings or cuttings will be required for the three transplanted elderberry shrubs (shrubs B, C, and D) and for the shrub that will not be removed, but lies within 20 feet of construction activities (shrub 2). The replacement plantings will occur in conjunction with the transplanting at a United States Fish and Wildlife Service mitigation site. A total of 50 elderberry seedlings and 47 associated native riparian plants will be planted to compensate for the loss of stems over or at one inch at a location to be determined by the United States Fish and Wildlife Service during Section 7 consultation. A suitable conservation area that is 0.17 hectares (0.413 acres) in extent would be required for these plantings. This area is suitable for one transplant, five elderberry seedlings/cuttings and five native plant associates. A suitable site for transplanting would be the Kaweah Oaks Preserve managed by the Sequoia Riverland Trust in Tulare County, or the San Joaquin River Conservancy's Ball Ranch in Fresno County. Suggested native plant associates to be planted in association with elderberry transplants and seedling/cuttings include species that are present or likely to occur on the site: *Salix gooddingii, Salix lucida lasiandra, Cephalanthus occidentalis, Fraxinus latifolia, Acer negundo californica, Quercus lobata, and Carex barbarae.*
	INVASIVE PLANT SPECIES
ALTERNATIVE 1 AND ALTERNATIVE 2	In accordance with the Executive Order of Invasive Species, Executive Order 13112, and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control included in the project shall not use species listed as noxious weeds. Additional precautions to be taken are listed below. a. To avoid the introduction on new weeds in the project area, only certified weed-free imported material shall be used for temporary erosion control, such as sterile straw-wattles or weed-free, sterile rice straw. b. To avoid the spread of giant reed in the King's River streambed, all stands of this invasive species within the project impact area shall be removed prior to construction. c. Minor infestations of arundo can be eradicated by manual methods. Hand pulling works with new plants less than seven feet in height, but care must be taken that all rhizome material is removed. Stems and roots should be removed or burned on-site to avoid re-rooting. Chemical control is also necessary for complete removal. The most common herbicidal treatment against arundo is glyphosate, a primary in the form of Rodeo, which is approved for use in wetlands. Most effective application is post-flowering and pre-dormancy, usually late July to early October when plants are translocating nutrients into root and rhizomes.

CHAPTER 4-COMMENTS AND COORDINATION

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including: project development team meetings and interagency coordination communications. This chapter summarizes the results of the project proponent's efforts to fully identify, address and resolve project-related issues through early and continuing coordination.

4.1 Communications and Public Participation

A series of public newsletters and public information meetings have been and will continue to be provided for the public regarding the Mountain View Avenue/Avenue 416/El Monte Way project. The following is a list of public information newsletters, public workshops and notices that have been provided for the project to date:

- The first public newsletter was mailed to approximately 5,000 local residences and businesses in September 2001. The newsletter contained a Spanish translation of the text to proactively inform the Spanish-speaking members of the community about the project.

- The public was introduced to the project at a Public Scoping Meeting held on October 22, 2001. Approximately 50 community members attended the meeting, listened to a project presentation and viewed displays of typical sections of the proposed roadway and aerial photographs of the project limits. Questions and comments were received from the public regarding roadway design issues, environmental issues, and overall safety issues of the proposed improvements for Mountain View Avenue/Avenue 416/El Monte Way.

- A representative from Quincy Engineering met with several property owners and business owners at one-on-one meetings in early October 2001, where more specific concerns were discussed on an individual basis.

- Summaries of all questions and comments collected from the public were provided to all Project Design Team members.

- During February and March 2002, the City of Dinuba held two City Council meetings to consider the alternatives for Dinuba and to obtain public input.

- A second newsletter, also containing a Spanish translation, was distributed by mail in January 2003.

- As a follow-up to the mailer, a second public meeting was conducted on February 3, 2003. Approximately 50 community members attended the open house. Tulare County and the Planning Development Team provided handouts and gave a presentation that detailed project-specific information about the current and future traffic conditions, proposed project alignment alternatives, and general right-of-way acquisition process that the public can expect as part of this roadway improvement project.

- A Notice of Preparation in compliance with the California Environmental Quality Act was provided to local and state agencies on the distribution list (Chapter 5) in July 2003. A formal scoping meeting was held at City Hall in the City of Dinuba on July 16, 2003 from 10:00 a.m. to 12:00 p.m. An updated Notice of Preparation was circulated through the State Clearinghouse for a 30-day review period beginning on November 16, 2004. Public hearings will be scheduled before the City of Dinuba City Council and/or the Tulare County Board of Supervisors during the circulation period of this draft environmental document, and certification of the Final Environmental Impact Report will take place at a public hearing before the Tulare County Board of Supervisors.

4.2 Agency Consultation and Coordination

During the preparation of the technical studies for the project, extensive contacts, both formal and informal, were made with public agencies and local organizations with interests in the project.

4.2.1 Interagency Meeting

The United States Fish and Wildlife Service was contacted on August 17, 2001 to determine the current federally listed or proposed threatened and endangered species potentially occurring in the project. Appendix D includes this letter to the United States Fish and Wildlife Service and the response (Species List File No. 1-1-01-SP-3044). Updated letters were sent to United States Fish and Wildlife Service met with members of the project development team on May 4, 2004 and are also included in Appendix D. On December 7, 2001, Greg Van Stralen of the United States Fish and Wildlife Service met with members of the project development team to informally discuss specials-status species and other issues on this project. Appendix D provides a summary of this meeting.

Due to the potential presence of valley elderberry longhorn beetle, a federally listed species, formal consultation with the United States Fish and Wildlife Service will be required. A Biological Assessment (PAR Environmental Services, Inc. 2007a) has been prepared for this consultation and was submitted to the United States Fish and Wildlife Service by FHWA in June 2007.

The California Department of Fish and Game was contacted on August 17, 2001 to determine the current state listed or proposed threatened and endangered species potentially occurring in the project. Updated letters were sent to California Department of Fish and Game on May 4, 2004 and are also included in Appendix D. No California Department of Fish and Game response has

been received. On December 9, 2004, and February 3, 2005, a member of the project development team contacted Clarence Mayott, California Department of Fish and Game Staff Environmental Scientist, to discuss the bat colony on the Kings River Bridge and mitigation for Sanford's arrowhead. Further consultation with California Department of Fish and Game will be required due to potential presence of San Joaquin kit fox and Swainson's hawk, and to discuss conditions necessary for a Streambed Alteration Agreement.

Virginia Dains, PAR Environmental Services, Inc. wetlands specialist, contacted Mathew Hirkala with the United States Army Corps of Engineers to discuss the jurisdictional status of project area canals as waters of the United States, and Susan Sanders called Madelaine Martinez at the National Marine Fisheries Service for information on special-status fish in the project area. Wetland delineation forms for this project are included as Appendix H of this report. The United States Army Corps of Engineers has not yet verified the wetland delineations.

4.2.2 Other Agencies Contacted

The following is a list of federal, state and local agencies and organizations contacted in writing and/or by telephone/email during the preparation of this environmental document and its supporting studies.

<u>Federal Agencies</u>

USDA Natural Resource Conservation District
Fresno Service Center
4625 West Jennifer Avenue, Suite 125
Fresno, CA 93722-6424

USDA Natural Resource Conservation District
Visalia Service Center
3530 West Orchard Court
Visalia, CA 93277-7055

Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

United States Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

United States Fish and Wildlife Service
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-

United States Army Corps of Engineers
San Joaquin Valley Office

Regulatory Branch
1325 J Street
Sacramento, CA 95814-2922

State Agencies

California Department of Fish and Game, Region 4
1234 East Shaw Avenue
Fresno, CA 93710

Land Management Division
State Lands Commission
Sacramento Office
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825-8202

California Environmental Protection Agency
Department of Toxic Substances
1001 I Street
P.O. Box 806
Sacramento, CA 95812-0806

State Office of Historic Preservation
P.O. Box 942896
Sacramento, CA 94296

California Archaeological Inventory Information Center
9001 Stockdale Highway
Bakersfield, CA 93311-1099

Local Agencies

Tulare County Agricultural Commissioner
Agricultural Building
4437 S. Laspina
Tulare, CA 93274

Tulare County HHSA
Environmental Health Services Division
5957 South Mooney Blvd
Visalia, CA 93277

Tulare County HHSA
HazMat Division
5957 South Mooney Blvd
Visalia, CA 93277

Ron Lyons, Assistant Superintendent
Operational Services
Dinuba Unified School District
1327 East El Monte Way
Dinuba, CA 93618

John D. Clements, Director of Transportation
Kings Canyon Unified School District
1675 West Manning Avenue
Reedley, CA 93654

Michelle Steagall, Superintendent/Principal
Clay Joint Unified School District
12449 South Smith Avenue
Kingsburg, CA 93631

Lois Hutton
Kingsburg Joint Union Elementary School District
1310 Stroud
Kingsburg, CA 93631

Ted Dumarejo, Transportation Director
Kingsburg Joint Union High School District
1900 18th Avenue
Kingsburg, CA 93631

Cheryl Aldred
Dinuba Junior Academy
218 South Crawford
Dinuba, CA 93618

Alta Irrigation District
Chris Kapheim, General Manager
P.O. Box 715
289 North L Street
Dinuba, CA 93618

Consolidated Irrigation District
2255 Chandler Street
Selma, CA 93662-3041

Kings River Conservation District
4886 East Jensen Avenue
Fresno, CA 93725

Interested Organizations

Alta District Historical Society
P.O. Box 254
Dinuba, CA 93618

Tulare County Historical Society
P.O. Box 295
Visalia, CA 93277

CHAPTER 5 - LIST OF CONTRIBUTORS

PAR Environmental Services, Inc.

James Gary Maniery	Principal and Project Manager
Melinda Rivasplata	Environmental Impact Report/Environmental Assessment - Primary Author Community Impact Assessment - Primary Author Visual Resource Evaluation - Contributing Author
Mary Maniery	Historic Property Survey Report – Primary Author
Susan D. Sanders	Biological Resources/Natural Environment Study –Primary Author
Michelle Muller	Visual Resource Evaluation – Contributing Author Preliminary Limited Level I Initial Site Assessment – Contributing Author Environmental Impact Report/Environmental Assessment – Contributing Author
Christa Fay Redd	Visual Resource Evaluation – Primary Author Limited Level I Preliminary Initial Site Assessment – Primary Author Relocation Impact Study-Primary Author Environmental Impact Report/Environmental Assessment – Contributing Author
Jennifer Moore	Environmental Impact Report/Environmental Assessment – Contributing Author
Cindy Baker	Historic Property Survey Report – Contributing Author
John Dougherty	Archaeological Survey Report – Contributing Author
Monica Nolte	Archaeological Survey Report – Contributing Author

CCS/TyLin

Tim Rimpo	Air Quality Analysis

Brown-Buntin Associates

Bill Thiessen	Environmental Noise Analysis

Tulare County

Kunabalan Muthusamy	Tulare County Resource Management Agency
Phil Slitor	Tulare County Resource Management Agency
Jennifer Echeverria	Tulare County Planning

Caltrans District 6

Allam Alhabaly	Reviewed the Noise and Vibration section.
Javier Almaguer	Reviewed the Environmental Document. Co-wrote Hazardous Waste/Materials, Noise and Vibration, and Section 4(f) Evaluation.
Carrie Blickenstaff	Lead Biologist performing San Joaquin Kit Fox Surveys.
Randall Bonds	Reviewed the Human Environment, and the Community Impact Analysis technical study.
Christopher Brewer	Reviewed Cultural resource documents regarding architectural history.
Abdulrahim Chafi	Reviewed the Air Quality section.
Sarah Gassner	Reviewer - Archaeology.
Susan Greenwood	Reviewed the Hazardous Waste/Materials section.
Kelly Hobbs,	Reviewed HRER, HPSR and Environmental Document; Co-wrote the FOE/MOA.
Kristen Helton	Reviewed NEPA Document
Patricia Kuest	Co-wrote the Biological Environment section; Coordinated with United States Fish and Wildlife Service.
Gail Miller	Reviewed the Environmental Document.
Lisa Nishimura	Native American consultation related to cultural resources. Reviewed Archaeological technical documents.
Dr. Karen M. Nissen	Native American consultation related to cultural resources.
Zachary Parker	Reviewed the Biological Environment section.
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John Whitehouse	Reviewed the Cultural Resources section.

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CHAPTER 7-REFERENCES

Publications Cited

American Society of Landscape Architects
1980 *Visual Impact Assessment for Highway Projects.*

Archaeological Consulting and Research Services
1974 *Report of Archaeological Investigation and Historical Research of the Proposed Location of the Guardian Industries Glass Plant, Fresno County, California*. Prepared for Wilsey and Ham. On file, California Historical Resources Information System (CHRIS), Southern San Joaquin Valley Information Center (SSJVIC), Bakersfield, California.

Bakic, T., C. Baker, and M. Maniery
2004 *Historic Resources Evaluation Report for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project from Bethel Avenue in Fresno County to Road 92 in Tulare County*. On file, Caltrans District 06, Fresno, California.

Barbour, R. W. and W. H. Davis
1969 Bats of America. University of Kentucky Press, Lexington, KY.

BEARFACTS
2001 Tulare, California 1998-99 and Fresno, California 1998-99, U.S. Department of Commerce, Bureau of Economic Analysis http://www.bea.doc.gov/bea/regional/bearfacts/. Accessed November 27, 2001.

Beedy, E. C., and S. L. Granholm
1985 *Discovering Sierra Birds – Western Slope.* Yosemite Natural History Association and Sequoia Natural History Association. San Francisco, CA.

Bloom, P. H.
1980 The status of the Swainson's hawk in California, 1979. Non-game Wildlife Investigation, Project W-54-R-12, Job II-8.0. California Department of Fish and Game. Sacramento, CA.

Bowen, M.
2000 California State DPR Primary Record and Building, Structure, Object Record – Dinuba Town Ditch. *Historic Resource Evaluation Report for the Road 80 Widening Project, Tulare County, California*. Prepared for Tulare County Resource Management Agency. On file, CHRIS, SSJVIC, Bakersfield, California.

Brewer, C. D. (Vintage Resources)
1990 *Historic Property Survey Report for Proposed Widening of Alta Avenue from Kamm Avenue to El Monte Way in the City of Dinuba*. Prepared for City of Dinuba and Quad Consultants. Prepared for North State Resources. On file, CHRIS, SSJVIC, Bakersfield, California.

California Air Resources Board
2007 California Air Resources Board – 2005 Estimated Annual Average Emissions for Fresno and Tulare Counties. Accessed online at www.arb.ca.gov/app/emsinv. May.

California Association of Realtors (CAR)
2002 California Association of Realtors. Affordability Housing Index. www.car.org.

CalFlora
2002 Information on Calfornia plants for education, research, and conservation [webapplication]. Berkeley, CA. Formerly available online at http://www.calflora.org

California Burrowing Owl Consortium
1993 Burrowing Owl Survey Protocol and Mitigation Guidelines. Technical Reportt, Burrowing Owl Consortium, Alviso, California.

California Department of Fish and Game
1980 California's Wildlife, Vol. II: Birds. Sacramento, California.

1984 Guidelines for Assessing Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities. State of California, The Resources Agency. Department of Fish and Game. May 4, 1984.

2000 The Status of Rare, Threatened, and Endangered Animals and Plants of California, California Department of Fish and Game, Habitat Conservation Planning Branch.

2002a Special Animals. Wildlife and Habitat Data Analysis Branch. California Natural Diversity Data Base. July.

California Department of Food and Agriculture
1997 Census of Agriculture, Dept. of Food and Agriculture, California Agriculture Statistics Service (http://www.cdfa.ca.gov/).

2000 Census of Agriculture CDFA Statistics Service

2000-2001 Williamson Act Total Reported Enrollment (Acres). Accessed at http://conservation.ca.gov/dlrp/lca

California Department of Conservation (CDC)

2002a Farmland Security Zones. http://www.consrv.ca.gov/dlrp/lca/farmland_security_zones.htm. Accessed September 18, 2002

2002b California Farmland Conversion Report 1998-2000. December 2002.

2002c Williamson Act Total Reported Enrollment (Acres) 2000-2001. http://www.conservation.ca.gov/dlrp/lca

California Department of Toxic Substance Control (DTSC)

2000 Aerial Lead Variance No. 00-H-VAR-02. Effective September 22, 2000 expires September 22, 2005. On file, Caltrans District 6, Fresno, CA.

California Department of Transportations (Caltrans)

1986 Historical Significance – Local Bridges. In the *California Historic Bridge Inventory*, completed by the Caltrans Environmental Program. Updated August 2000. On file, Caltrans, Division of Structure Maintenance and Investigations, Sacramento (also located at www.caltrans.ca.gov/hq/structur/strmaint/historic/htm).

1988 Air Quality Technical Analysis Notes. Sacramento, CA.

1989 Revised. CALINE 4 - A Dispersion Model for Predicting Air Pollutant Concentrations Near Roadways. FHWA/CA/TL-84/15. Sacramento, CA.

1991 *Guidance for Consultants*: Procedures for the Protection of Properties – The Section 106 Process. California Department of Transportation (Caltrans), Office of Environmental Analysis, Environmental Studies Branch, Sacramento, California.

1995 *Environmental Handbook, Volume I.* Oakland, CA. March 6.

1997 Community Impact Assessment, Caltrans Environmental Handbook Volume 4, June 1997.

2000 Your Rights and Benefits as a Displace Under the Uniform Relocation Assistance Program (Brochure). Revised December 2000.

2002 *Eligible and Officially Designated Routes.* www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm. Accessed August 6.

2006 *San Joaquin Kit Fox Survey Memorandum*. Prepared by Carrie Blickenstaff. October 6, 2006.

California Natural Diversity Data Base (CNDDB)
2002 Computer printouts describing occurrences of special-status species on the Reedley, Orange Cove South, and Selma United States Geological Survey 7.5-minute topographic quadrangles. California Department of Fish and Game, Sacramento, CA.

California Native Plant Society (CNPS)
2001 *Inventory of Rare and Endangered Vascular Plants of California* (sixth edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, CA.

California Resources Agency
1997 CEQA Guidelines Section 15126.2 (d). Guidelines for Implementation of the California Environmental Quality Act as amended, 1997 and 1998.

California Department of Parks and Recreation (DPR)
2001 *Directory of Properties in the Historic Resource Inventory* (June 2001). California Department of Parks and Recreation, Sacramento.

Cantwell, R. J.
1977a *Archaeological and Historical Survey Report, Road 88, From Avenue 408 to Avenue 414.* On file, CHRIS, SSJVIC, Bakersfield, California.

1977b *Archaeological and Historical Survey Report, Signalization at Avenue 416 and Road 56*. On file, CHRIS, SSJVIC, Bakersfield, California.

1977c *Archaeological Survey Report, Road 72, From Avenue 416 to Avenue 424*. On file, CHRIS, SSJVIC, Bakersfield, California.

1977d *Archaeological Survey Report, Road 80 from Avenue 419 to Avenue 432*. On file, CHRIS, SSJVIC, Bakersfield, California.

1978 *Archaeological and Historical Survey Report, Avenue 424, From Road 64 to Road 88*. On file, CHRIS, SSJVIC, Bakersfield, California.

Central Valley Regional Water Quality Control Board (CVRWQCB)
2001 File review conducted November.

Council of Fresno County Governments
2002 2002 Air Quality Conformity Determination. Fresno, CA.

City of Dinuba
1992 *City of Dinuba Parks and Recreation Master Plan*. July 1992. Dinuba, CA.

1997 *City of Dinuba General Plan Update*. September 1997. Dinuba, CA.

1997 *City of Dinuba Circulation Element*. July 1997. Dinuba, CA.

2000 City of Dinuba Title 17, Zoning Ordinance. February 2000. Dinuba, CA.

2001 *Municipal Service Plan for the City of Dinuba.* Prepared by the City of Dinuba for the Tulare County Local Agency Formation Commission. October 2001.

Council On Environmental Quality (CEQ)

1997 Environmental Justice; Guidance Under the National Environmental Quality Act. December 10, 1997

Davis, R. and E. L. Cockrum

1963 Bridges utilized as day-roosts by bats. J. Mamm. 44(3):428-430.

Dinuba Sentinel Newspaper

2002 Article of July 4, 2002 regarding the need for Tulare County to diversify its economy and attract industry other than agriculture in the 2002 State of the County address given by Steve Worthley, Chairman of the Tulare County Board of Supervisors.

2001 Article of October 11, 2001 regarding new housing developments in the City of Dinuba.

2002 Article of August 22, 2002 regarding Dinuba Water.

Dinuba Unified School District

2002 School enrollment data. Received from Sophie Ludwig December 12.

Education Data Partnership

2002 School District Profiles. http://www.ed-data.k12.ca.us. Accessed January 2003.

2006 School District Profiles. http://www.ed-data.k12.ca.us. Accessed July 2006.

Environmental Science Associates

1996. Preliminary Review Draft Tulare County Habitat Conservation Plan. Chapters 1, 2, 4, 5 and 9 and Appendices A & B. Prepared by Environmental Science Associates, San Francisco, California. May 1996.

1997 Tulare County Habitat Conservation Plan. Preliminary Draft Review.

Erickson, G. A., E. D. Pierson, et al.

2000 Microchiropteran Bridge Utilization (Hitch Hikers' Guide to Bat Roosts), California Department of Transportation, Stockton, CA. – Unpublished Reportt.

Federal Highway Administration (FHWA)
1983 *Visual Impact Assessment for Highway Projects*. American Society of Landscape Architects, Caltrans, and FHWA.

1998 Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. December 2, 1998.

2001 www.fhwa.dot.gov/legsregs. Accessed April 24.

n.d. *Visual Values for Highway Users.*

Fenton, M. B.
1983 Just bats. University of Toronto Press, Toronto.

Fresno County
2000a October 2000. *Fresno County General Plan Policy Document*.

2000b *Fresno County General Plan Update Final Environmental Impact Report*. February 2000. Fresno, CA.

Fidelity National Information Solutions (FNIS)
2001 Database search.

Great Valley Center (GVC) 1999
1999 *Great Valley Great Issues.* Report by the Students of the Regional Planning and Analysis Laboratory, City and Regional Planning Department, California Polytechnic State University, San Luis Obispo. Fall 1999.

2001 *Economic Forecast for California's Central Valley 2001*, Great Valley Center. Tapan Monroe, John Angulano, Mark Schniepp. January 2001.

Grinnell, J., and A. H. Miller
1944 *The Distribution of the Birds of California*. Cooper Ornithological Club. Berkeley, CA.

Harris, J. H., S. D. Sanders, and M. A. Flett
1988 The Status and Distribution of the Willow Flycatcher in California. California Department of Fish and Game. Wildlife Management Division Administrative Report 88-1. 32 pp.

Harrison, C.
1978 *A Field Guide to the Nests, Eggs, and Nestlings of North American Birds*. The Stephen Greene Press, Brattleboro, VT.

Hatoff, B., B. Voss, S. Waechter, and S. V. Bente (Woodward-Clyde)
1995 *Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project*. Prepared for Mojave Pipeline Company. On file, CHRIS, SSJVIC, Bakersfield, California.

Hickman, J. C.
n.d. *The Jepson Manual - Higher Plants of California*. University of California Press, Berkeley, CA.

Holland, D. C.
1991 A Synopsis of the Ecology and Status of the Western Pond Turtle (*Clemmys marmorata*) in 1991. U.S. Fish and Wildlife Service, National Ecology Center, San Simeon, CA.

Holland, D.
1991a Status and reproductive dynamics of a population of western pond turtles (*Clemmys marmorata*) in Klickitat County, Washington in 1991. Report prepared for the Washington Department of Wildlife.

1991b A synopsis of the ecology and status of the western pond turtle (*Clemmys marmorata*) in 1991. Report prepared for the U.S. Fish and Wildlife Service, National Ecology Research Center, San Simeon Field Station. San Simeon, California, United States Fish and Wildlife Service.

Institute of Transportation Studies, University of California, Davis
1996 Transportation Project-Level Carbon Monoxide Protocol. UCD-ITS-RR-97-2 1. Davis, CA.

Jennings, M. R., and M. P. Hayes
1985 Pre-1900 overharvest of the California red-legged frog (*Rana aurora draytonii*): the inducement for bullfrog (*Rana catesbeiana*) introduction. Herpetologica 41:94-103.

1994 *Amphibian and Reptile Species of Special Concern in California*. Final Report Submitted to The California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA.

Jones & Stokes Associates, Inc.
2000 *Historic Property Survey Report for the Road 80 Widening Project, Tulare County, California*. Prepared for Tulare County Resource Management Agency. On file, CHRIS, SSJVIC, Bakersfield, California.

KEA Environmental, Inc.
1997 *Cultural Resource Survey for the Selma to Bakersfield Fiberoptic Line, Southern San Joaquin Valley, California.* Prepared for North State Resources. On file, CHRIS, SSJVIC, Bakersfield, California.

Knopf, F. L.
1996 Mountain Plover (*Charadrius montanus*). In the Birds of North America, No. 211 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadephia, PA, and the American Ornithologists Union, Washington, D.C.

Kunz, T. H.
1982 Roosting ecology of bats. Pp. 1-55, *in* Ecology of bats (ed., T. H. Kunz). Plenum Press, NY.

Legislative Council, State of California
2001 Official California Legislative Information. http://www.leginfo.ca.gov. Accessed September 5.

Local Agency Formation Commission (LAFCO)
2002. Local Agency Formation Commission Resolution No. 02-004.

Maniery M., and C. Baker
2002 *Archaeological Survey Report for the Mountain View Avenue/Avenue 416/El Monte Way Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County*. On file, Caltrans District 06, Fresno, California.

Napton, L. K.
1989 *Cultural Resource Investigation of the Proposed Quail Pointe Garden Apartments, Dinuba, Tulare County, California.* Prepared for PAM Development and California State University, Stanislaus, Institute for Archaeological Research. On file, CHRIS, SSJVIC, Bakersfield, California.

PAR Environmental Services, Inc. and Brown-Buntin & Associates (PAR/BBA)
2005a *Environmental Noise Analysis Mountain View Avenue/Avenue 416/El Monte Way Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County, California*. Prepared by Brown-Buntin Associates, Visalia. January 21, 2005.

PAR Environmental Services, Inc. and CCS Planning and Engineering (PAR/CCS)
2005b *Air Quality Analysis Mountain View Avenue/Avenue 416/El Monte Way Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County, California*. Prepared by CCS Planning and Engineering, Sacramento. January 21, 2005. Addendum Provided by PAR Environmental Services, Inc. May 9, 2007.

PAR Environmental Services, Inc. (PAR)
2007a *Biological Assessment for the Mountain View Avenue/Avenue 416/EL Monte Way Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County, California.* June 2007.

2007b *Natural Environment Study for the Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue in Fresno County to Road 92 in Tulare County, California*. June 2007.

2007c *Avenue 416 Widening, Fresno and Tulare Counties, Draft Mitigation Plan.* An appendix to the *Natural Environment Study for the Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue in Fresno County to Road 92 in Tulare County, California*. June 2007.

2007d *Wetland Delineation Report for the Mountain View Avenue/Avenue 416/El Monte Way Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County, California.* June 2007. Prepared Virginia Dains.

2006a *Community Impact Assessment for the Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue in Fresno County to Road 92 in Tulare County, California*. August 2006.

2006b *Relocation Impact Study for the Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue in Fresno County to Road 92 in Tulare County, California*. August 2006.

2005c *Visual Resource Analysis for Mountain View Avenue/Avenue 416/El Monte Way Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County, California*. January 5, 2005.

2005e *Historic Properties Survey Report for the Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue in Fresno County to Road 92 in Tulare County, California*. October 2004.

2005f *Limited Level I Preliminary Initial Site Assessment for the Mountain View Avenue/ Avenue 416/El Monte Way Widening From Bethel Avenue in Fresno County to Road 92 in Tulare County, California*. January 21, 2005. Addendum Provided by County of Tulare May 9, 2007.

Pavlik, R.

2000 Memorandum of Understanding Regarding Evaluation of Post-1945 Buildings, Moved Pre-1945 Buildings, and Altered Pre-1945 Building (MOU Short Form) as included in the *Historic Property Survey Report for the Road 80 Widening Project, Tulare County, California*. Prepared for Tulare County Resource Management Agency. On file, CHRIS, SSJVIC, Bakersfield, California.

Peak & Associates, Inc.
1987 *Cultural Resource Assessment of an Apartment Complex Site, Dinuba, Tulare County, California*. Prepared for The Alpha Group. On file, CHRIS, SSJVIC, Bakersfield, California.

Quad Consultants (Quad)
1997 *City of Dinuba General Plan Update*. October 28, 1997.

Quincy Engineering
2002 *Preliminary Drainage Report for Mountain View Avenue/Avenue 416/El Monte Way Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County, California.* Quincy Engineering 2002.

Rathbun, G., N. Siepel, and D. Holland
1992 Nesting behavior and movements of western pond turtles *Clemmys marmorata*. The Southwestern Naturalist 37:319-324.

Rincon Consultants, Inc.
1998 Preliminary Environmental Evaluation for Avenue 416 Project Study Report, Tulare County. November.

Robert Grunwald & Associates
1963 *An Area General Plan for Tulare County – California. Report II: Proposals & Tools for Achievement.* April.

San Joaquin Valley Air Pollution Control District
2002 Guide for Assessing and Mitigating Air Quality Impacts. Fresno, CA.

Sanborn Fire Insurance Company
1891 Sanborn Map and Publishing Co., New York. On File, California State Library, California Room, Sacramento.

1898 Sanborn Map and Publishing Co., New York. On File, California State Library, California Room, Sacramento.

1903 Sanborn Map and Publishing Co., New York. On File, California State Library, California Room, Sacramento.

1925-1944 Sanborn Map and Publishing Co., New York. On File, California State Library, California Room, Sacramento.

1907 Sanborn Map and Publishing Co., New York. On File, California State Library, California Room, Sacramento.

1912 Sanborn Map and Publishing Co., New York. On File, California State Library, California Room, Sacramento.

1920 Sanborn Map and Publishing Co., New York. On File, California State Library, California Room, Sacramento.

1925 Sanborn Map and Publishing Co., New York. On File, California State Library, California Room, Sacramento.

Schlorff, R. W., and P. H. Bloom
1984 Importance of riparian systems to nesting Swainson's hawks in the Central Valley in California. pp. 605-611 in R. E. Warner and K. M. Hendrix (eds.), *California riparian systems: ecology, conservation, and productive management*. University of California Press. Berkeley, CA.

Swainson's Hawk TAC
2000 Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. Swainson's Hawk Technical Advisory Committee, May 31, 2000.

Tulare County
1964 *General Plan Land Use and Circulation Element*. Visalia, CA.

1972 *Environmental Resources Management Element*. June.

1972 *Land Use and Conservation Element.*

1975 *Rural Valley Lands Plan, Amendment 94-008*. Amended May 1995.

1982 *Kings River Plan.* Visalia, CA.

1994 *Amendment 94-008, Rural Valley Lands Plan.* Visalia, CA.

1999 *Amendment 99-02, Dinuba Urban Boundaries*. Visalia, CA.

2001 Information and Overview Tulare County website (http://www.co.tulare.ca.us/)

Tulare County Environmental Health Services
2001 File review conducted in November.

United States Army Corps of Engineers
1986 Regulatory Programs of the Corps of Engineers; Final Rule, Part 328.3: Definition of Waters of The United States. *Federal Register* Vol. 51, No. 219, November 13, 1986.

1987 Corps of Engineers Wetlands Delineation Manual. Department of the Army, *Army Corps of Engineers Technical Report* Y-87-1, Waterways Experiment Station, Vicksburg, Mississippi, 100 pps and appendices.

United States Census Bureau (USCB)

2000a DP-3 Profile of Selected Economic Characteristics: 2000, Data Set: Census 2000 Summary File 3 (SF3) - Sample Data, City of Dinuba.

2000b Data Set: Census 2000 Supplementary Survey Summary Tables for Fresno County and Tulare County.

2000c Census 2000 Summary File 1 (SF1). General Profiles 1, 2 and 3.

2000d Census 2000 Summary File 1 (SF1) 100 Percent Data.

United States Department of Agriculture, Natural Resources Conservation Service

2002 Farmland Protection Policy Act. http://www.nrcs.usda.gov/programs/fppa. Accessed September 19, 2002.

United States Fish and Wildlife Service (USFWS)

1993 Federal Register. March 5, 1993, 50 CFR Part 17.

1994 Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Conservancy Fairy Shrimp, Longhorn Fairy Shrimp, and the Vernal Pool Tadpole Shrimp; and Threatened Status for the Vernal Pool Fairy Shrimp. September 19, 1994. *Federal Register* 59:48136-48153.

1997 Guidance on site assessment and field surveys for California red-legged frogs. Sacramento.

1998 Recovery plan for upland species of the San Joaquin Valley, California. Region 1, Portland, OR. 319 pp.

1999 Draft recovery plan for the giant garter snake (*Thamnophis gigas*). Portland, OR.

2001a Species List for Reedley, Orange Cove South, and Selma U.S. Geological Survey 7.5-minute topographic quadrangles, October 24 (see Appendix A).

United States Soil Conservation Service

1991 *Hydric soils of the United States*. Washington, DC.

United States Environmental Protection Agency (U.S. EPA)

2001 File review conducted in November.

2002 Frequently asked questions for asbestos and lead-based paint. http://www.epa.gov. Accessed May 24

United States Geological Society (USGS)

1923 Sultana, California, Quadrangle. On file, California State Library, Government Publications, Sacramento.

1924 Reedley, California, Quadrangle. On file, California State Library, Government Publications, Sacramento.

1924 Selma, California, Quadrangle. On file, California State Library, Government Publications, Sacramento.

1946 Selma, California, 15 minute Quadrangle. On file, California State Library, Government Publications, Sacramento.

1947 Selma, California, 7.5 minute Quadrangle. On file, California State Library, Government Publications, Sacramento.

1951 Reedley, California, 7.5 minute Quadrangle. On file, California State Library, Government Publications, Sacramento.

1964 Selma, California, 7.5 minute Quadrangle. On file, California State Library, Government Publications, Sacramento.

1966 Reedley, California, 7.5 minute Quadrangle. On file, California State Library, Government Publications, Sacramento.

1966 Reedley, California, 7.5 minute Quadrangle. On file, California State Library, Government Publications, Sacramento.

1981 Reedley, California, 7.5 minute Quadrangle. On file, California State Library, Government Publications, Sacramento.

1981 Selma, California, 7.5 minute Quadrangle. On file, California State Library, Government Publications, Sacramento.

United States Department of Housing and Urban Development
2000 Income Limits for Fiscal Year 2000. http://www.huduser.org

United States Environmental Protection Agency
1970 National Environmental Policy Act, as amended. Summary File 3 (SF3) – Sample Data. Tables P53, P63, P64, P65, P82, P92

Weinberger, G.
1988 *Archaeological Reconnaissance of Valley View Apartments in Dinuba*. Prepared for Acacia Development Inc. On file, CHRIS, SSJVIC, Bakersfield, California.

1991 *Cultural Resource Assessment of Self-Help Enterprises Project, Dinuba, California.* Prepared for Self-Help Enterprises. On file, CHRIS, SSJVIC, Bakersfield, California.

Wildlife Research Associates
2003 Kings River Bridge Bat Habitat Assessment Report, January 17, 2003.

2004 Bat Roost Mitigation Options, letter report. December 14, 2004.

Y&C Transportation Consultants (Y&C)
2002 *Transportation Technical Report for Mountain View Avenue/Avenue 416/El Monte Way Widening from Bethel Road in Fresno County to Road 92 in Tulare County, California.* June 2002. Addendum provided by the County of Tulare May 9, 2007.

Zeiner, D. C., W. F. Laudenslayer, K. W. Mayer, and M. White
1990 *California's Wildlife. Volume III: Birds*. California Statewide Wildlife Habitat Relationships System. State of California, The Resources Agency, Department of Fish and Game, Sacramento, CA.

Personal Communications

Choe, Michael. Department of Toxic Substance Control. Telephone communiation regarding the need to test for ADL on January 30, 2004. Due to low traffic volumes and the fact that the road is not a state facility, no testing is needed.

Gagliolo, Gary. Associate Planner, Caltrans Central Region Hazardous Waste Branch. Letter to Ms. Emily Messina dated October 3, 2002 regarding asbestos and pesticide residue mitigation. Phone communication regarding the need to test for ADL on May 15, 2003 and electronic mail correspondence on January 29, 2004.

Hirkala, Mathew. United States Army Corps of Engineers, Sacramento. Telephone conversation with Virginia Dains, February 1 2002. Waterways that originate in a water of the United States and terminate in a water of the United States via a gravity feed system are considered themselves waters of the United States. Those that do not reenter the natural regional drainage and flow though canals constructed in uplands are not considered to be under the Corps jurisdiction.

Magyar, Paul. City of Dinuba. Email communication regarding residential building permit activities sicne the Year 2000. April 27, 2005.

Martinez, Madelaine. Fisheries biologist, National Marine Fisheries Service. Telephone conversation with Susan Sanders, PAR Environmental Services, Inc., March 20, 2003. The Kings River is a tributary to the Tulare Lake basin, and splits into two forks, the Clarks Fork and the South Fork. The Clarks Fork goes to Fresno Slough, through the Mendota Pool, and then to the San Joaquin River. Theoretically, there is a connection with the Kings River to the San Francisco Bay. Ms. Martinez thought, however, that the water quality within the Mendota Pool was so poor that it might preclude passage of fish like Delta smelt or Sacramento splittail to the Kings River. She

recommended talking with Bob Paris at the USFWS San Luis Refuge as he had more information about this species.

Meinert, Dan. City of Dinuba. Personal communications with Melinda Rivasplata regarding housing and development in the City of Dinuba on August 22, 2001; regarding jobs major employers in Dinuba, September 10, 2002; regarding planned development in the vicinity of the waste water treatment plant, and build out of the industrial park; and regarding City of Dinuba Public Improvement Standards for Arterial Streets, April 28, 2004; and update on building and development activity on April 28, 2005 (via email). Personal communication with Christa Redd regarding updates on building and development activity and parklands on August 8, 2006 (via email). Personal communication with Jennifer Moore regarding updates on development activity and municipal services on December 3, 2007 (via email).

Nakagawa, Stan. Fresno County. Electronic communication with Ms. Melinda Rivasplata and Mr. Stan Nakagawa discussed the Fresno PPL and the dates of the PPL and the Development of Plan Lines Document.

Roth, Craig. Horizon Environmental Inc. Conversation with Ms. Emily Messina on August 22, 2002 regarding free-phase products.

Smalley, Ted. Tulare County Association of Governments. January 23, 2003 telephone conversation with Wayne Shijo, *CCS Planning and Engineering*. Sacramento, CA. April 24, 2004 conversation with Michelle Muller, PAR Environmental Services, Sacramento, CA. Mr. Smalley**,** Email to Mike Sanchez, Quincy Engineering, regarding the Regional Transportation Plan, November 10, 2004.

Tarvin, Bob. Tarvin & Associates. Personal communication with Melinda Rivasplata regarding a potential residential and business displacement.

Waters, Jim. County of Tulare, Environmental Health Services. Conversation with Ms. Christa Fay on April 16, 2002 regarding Mr. Waters' site visit to the Avenue 416 proposed project. Four leaking underground storage tank sites were identified that had wells within the City right-of-way. In addition, some markets and a site of the abandoned repair shop were identified as potential sites.

Mr. Waters also discussed Dinuba Marine, stating that marine sites have historically had no sewer connections, therefore no solvents were removed from the sites. Marine sites would historically dispose of the chemicals onsite.

In addition, Mr. Waters, after talking with Joel Martins from the County, concluded that any contaminated groundwater is deep. It was felt that construction would not reach contaminated groundwater.

APPENDICES

APPENDIX A
CEQA Checklist

APPENDIX A

CEQA Checklist Form

1. **Project title:** Mountain View Ave./Ave. 416/El Monte Way Widening Project

2. **Lead agency name and address:**
Tulare County Resource Management Agency
5961 South Mooney Boulevard
Visalia, CA 93277

3. **Contact person and phone number**: Kuna Muthusamy (559) 733-6291

4. **Project location:** From Bethel Road in Fresno County, east of SR 99 to Road 92 in the City of Dinuba in Tulare County

5. **Project sponsor's name and address:**
Tulare County Resource Management Agency
See above

6. **General plan designation:**
Agriculture/residential/commercial

7. **Zoning:**
Agriculture/residential/commercial

8. **Description of project**:
Design and construct approximately 12 miles of four-lane road w/ median. In Dinuba from Rd 72 to Rd 92, El Monte Way (Ave. 416) would be improved to four lanes with either a raised median or two-way left-turn lane. The replacement of the Kings River Bridge in Tulare County would provide for four travel lanes, with either a single or two parallel structures. Various structure types are being evaluated. Two widening alternatives are under considereation.

9. **Surrounding land uses and setting:**
In the unincorporated portions of the project the primary land use is agricutlural, agricultural related industry, irrigation canals and scattered residences and farm related structures; uses in the City of Dinuba are residential, commercial, industrial and institutional (churches, parks, schools, government buildings).

10. Other public agencies whose approval is required:
U.S. Army Corps of Engineers, Clean Water Act Seciotn 404;
Calif. Dept of Fish and Game - Streambed Alteration Agreement;
State Water Resources Control Board - NPDES permit and Stormwater Pollution Prevention Plan
State Lands Commission - Lease agreement (to be determined)
Alta Irrigation District and Consolidated Irrigation District construction easements

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

X	Aesthetics	X	Agriculture Resources	X	Air Quality
X	Biological Resources	X	Cultural Resources		Geology /Soils
X	Hazards & Hazardous Materials	X	Hydrology / Water Quality	X	Land Use / Planning
	Mineral Resources	X	Noise	X	Population / Housing
	Public Services	X	Recreation	X	Transportation/Traffic
X	Utilities / Service Systems	X	Mandatory Findings of Significance		

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

X I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

I find that the proposed project MAY have a "potentially significant impact" or "potentially

significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature — Date: 5/09/2008

Signature — Date: 5/09/2008

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA

process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

a) the significance criteria or threshold, if any, used to evaluate each question; and

b) the mitigation measure identified, if any, to reduce the impact to less than significance

ISSUES:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?		X		
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?		X		
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?		X		
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?		X		

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?		X		
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		X		
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Create objectionable odors affecting a substantial number of people?				X
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		X		

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?	X			
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?				X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?				X
VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
VII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		X		

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?		X		
d) Be located on a site 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?		X		
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?		X		

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			X	
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				X
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				X
f) Otherwise substantially degrade water quality?		X		
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			X	
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			X	
j) Inundation by seiche, tsunami, or mudflow?				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
IX. LAND USE AND PLANNING -- Would the project:				
a) Physically divide an established community?			X	
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?		X		
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X
X. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X
XI. NOISE B Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	X			
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		X		

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X
XII. POPULATION AND HOUSING -- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?		X		
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?		X		
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?		X		
XIII. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?				X
Police protection?				X
Schools?				X
	Potentially	**Less Than**	**Less Than**	**No**

	Significant Impact	Significant with Mitigation Incorporation	Significant Impact	Impact
Parks?		X		
Other public facilities?				X
XIV. RECREATION --				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?		X		
XV. TRANSPORTATION/TRAFFIC -- Would the project:				
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 a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?			X	
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Result in inadequate parking capacity?				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X
XVI. UTILITIES AND SERVICE SYSTEMS - Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?		X		
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider 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?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project=s solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XVII. MANDATORY FINDINGS OF SIGNIFICANCE --				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		X		
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

APPENDIX B

Section 4(F) Evaluation

DRAFT SECTION 4(f) EVALUATION
MOUNTAIN VIEW AVENUE/AVENUE 416/EL MONTE WAY
ROAD WIDENING
FRESNO COUNTY, TULARE COUNTY AND THE CITY OF DINUBA

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INTRODUCTION

Section 4(f) of the United States Department of Transportation Act of 1966, codified in federal law at 49 United States Code (U.S.C.) 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried-out by the California Department of Transportation (Caltrans) under its assumption of responsibility pursuant to 23 U.S.C. 327.

> Section 4(f) specifies that "the Secretary of Transportation may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of National, State or local significance, or land of an historic site of National, State or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge or site) only if:
>
> 1. There is no prudent and feasible alternative to using that land; and
> 2. The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.
>
> Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and Housing and Urban Development in developing transportation projects and programs, which use land protected by Section 4(f).

In general, a Section 4(f) "use" occurs with a Department of Transportation-approved project or program when 1) Section 4(f) land is permanently incorporated into a transportation facility: 2) when there is a temporary occupancy of Section 4(f) land that is adverse in terms of the Section 4(f) preservationist purposes as determined by specified criteria (23 Code of Federal Regulations [CFR] Section 771.135[p][7]; and 3) when Section 4 (f) land is not incorporated into the transportation project, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under section 4(f) are substantially impaired (constructive use)(23 CFR Section 771.135[p][1] and [2]).

By definition, Section 4(f) applies only to publicly owned areas, with the exception of National Register of Historic Places eligible and/or listed properties; these may be public or private. Within the project limits, both proposed project alternatives would have an adverse effect on properties eligible for the National Register of Historic Places (see concurrence letter of eligibility from the State Historic Preservation Officer in Attachment C).

Both project alternatives would have an adverse effect on significant publicly owned parkland and on historic sites of national and local significance.

PROPOSED ACTION

Tulare County, Fresno County and the City of Dinuba, propose to widen and improve Mountain View Avenue/Avenue 416/El Monte Way by designing and constructing approximately 19.3 kilometers (12 miles) of four-lane roadway with a raised median or striped median lane from Bethel Avenue in Fresno County east to Road 92 in the City of Dinuba in Tulare County (refer to Figure 1-2). Within the City of Dinuba, between Road 72 and Road 92, El Monte Way would be improved to four lanes with a combination of raised median and two-way left-turn lane. The project would link the existing four-lane sections and would result in a continuous four-lane road starting at SR 99 and continuing to the community of Cutler east of the City of Dinuba.

Two build alternatives are being considered, each with slightly different alignments that would minimize impacts to adjacent natural resources and existing land uses. The most substantial difference between the two alternatives occurs in the City of Dinuba where the alignment for Alternative 1 would widen to the north and the alignment for Alternative 2 would widen to the south.

For a detailed description of the proposed project alternatives refer, to Chapter 1 of the *Environmental Impact Report/Environmental Assessment for the Mountain View Avenue/Avenue 416/El Monte Way Widening*.

PROJECT PURPOSE AND NEED

The project purpose and need are summarized below; a detailed description is provided in Chapter 1 of the Environmental Impact Report/Environmental Assessment.

Project Need

- According to the Transportation Technical Report prepared for the project by Y&C Transportation Consultants, Inc. (June 2002), increased traffic volumes are projected over the study period (2001-2030), resulting in unacceptable Levels of Service on roadway segments and at intersections.

- Accident rates on Mountain View Avenue/Avenue 416/El Monte Way indicate that in Fresno County there is a slightly higher accident rate along Mountain View Avenue when compared to similar state roadways in the same county.

- Within the City of Dinuba, there are safety issues related to intersecting streets that are not at right angles to El Monte Way. In Dinuba, the accident rate is considerably higher than in Tulare County or Fresno County.

Project Purpose

- Improve traffic operations and reduce congestion along the Mountain View Avenue/Avenue 416/El Monte Way corridor between Bethel Avenue in Fresno County and Road 92 in Tulare County.

- Improve the regional transportation and circulation system in the northern portion of Tulare County and southern Fresno County

- Improve circulation in downtown Dinuba.

- Reduce congestion and improve safety in downtown Dinuba.

- Provide pedestrian-friendly streetscape improvements in downtown Dinuba by developing medians where feasible, and installing Americans with Disabilities Act compliant sidewalks, curb ramps, and traffic signals (where accessible pedestrian signals are warranted.

SECTION 4(f) PROPERTIES
PUBLICLY OWNED PARK LAND

ROSE ANN VUICH PARK (Assessor's Parcel Number 014-154-001)

Rose Ann Vuich Park in the City of Dinuba lies on the northeast corner of El Monte Way and McKinley Avenue (refer to Attachment A). This park is owned and operated by the City of Dinuba and is approximately 3.7 hectares (9.2 acres) in size.

Facilities in the park include family and group picnic areas, restrooms, horseshoe pits, a covered stage area, tot lot play area, a playground, exercise course and a parking lot located on the north side of the park. There are two group picnic areas; one can accommodate up to 50 people and the other can accommodate up to 100 people. Also located in the park are the City Parks division offices (323 square feet) and a utility area (3,250 square feet) (refer to Attachment A). A rock monument, dedicated to Rose Ann Vuich, is located at the southwest corner of the park, and landscaping in the park includes numerous mature trees.

The park is named for Rose Ann Vuich, California's first woman state senator, who was from Dinuba. The park is the most heavily used park in Dinuba, serving as the venue for community events including the Raisin Day Festival and Cinco de Mayo. These two events draw 20,000 to 25,000 visitors each year. Additionally, an estimated 15,000 people use the park for both formal and informal public and private celebrations.

The park is accessible to pedestrians, and striped diagonal vehicle parking spaces are provided on the north side of the park.

Impacts to Rose Ann Vuich Park

<u>Alternative 1</u>

Amount of land to be used: Alternative 1 will require approximately 3,251 square meters (34,990 square feet) from the 3.7-hectare (9.2-acre) Rose Ann Vuich Park, a loss of 8.7 percent of the park area. The depth of park frontage needed would be a strip of land approximately 18 meters (60 feet) deep (Attachment A, Figure A-1a).

Facilities, functions, and/or activities affected: This right-of-way acquisition would not affect any of the developed facilities in the park, nor would it prevent continued use of the park for community celebrations or individual and family uses such as picnics, play and passive recreational pursuits.

Accessibility: This alternative would improve accessibility in accordance with the Americans with Disabilities Act, by providing continuous sidewalks along El Monte Way and Rose Ann Vuich park frontage. Pedestrian and traffic safety along El Monte Way

would be improved by providing additional signalized intersections making pedestrian crossing of El Monte Way safer.

Visual: Under Alternative 1, approximately 60 feet of frontage would be required for the north side widening of El Monte Way. This widening would remove the first row of mature trees (approximately 13 trees) and other landscaping (see Attachment A, Figure A-1b). This would substantially change the visual qualities experienced by park users.

Noise: The nearest park facility to the roadway is the band shell; the band shell faces north with seating arranged on the north side of the shell. Under existing conditions the noise level at the first row of seating is approximately 55 dBA, Leq. The noise level calculated for the year 2030 without the project is 59 dBA, Leq. With the project under Alternative 1, the projected noise level at the nearest seating would be 58 dBA. Leq slightly less than the No-Build Alternative.

Vegetation: There are no plant communities with high habitat value or special-status plant species present on the park site. As noted under visual, this alternative would remove mature landscaping including approximately 13 trees.

Wildlife: The value of wildlife habitat in Rose Ann Vuich Park is limited due to its low level of diversity and high levels of disturbance present in the urban environment. The mature trees in the park provide roosting and nesting places for bird species tolerant of disturbance (northern mockingbird, western scrub jay and American robin). This alternative would require removal of approximately 13 mature trees, which could adversely affect nesting birds. The proposed use of the park by the proposed project would have a minor effect on wildlife so long as tree removal occurred outside of the nesting season.

Air Quality: The proposed project would not result in an increase in traffic over the No-Build Alternative, nor would it result in a redistribution of traffic patterns in the area. The project-level carbon monoxide analysis predicted that the carbon monoxide concentrations under 2030 project conditions would not exceed federal or state standards. Therefore the project would not cause adverse air quality impacts on the park.

Water Quality: There are no open waterways within or adjacent to the park. Roadway runoff will be handled by the City's storm drain collection system; therefore, the project would not have any effect on water quality related to the park.

Alternative 2

This alternative will require approximately 353 square meters (3,799 square feet) from the 3.7-hectare (9.2-acre) park, a loss of 0.9 percent of the park area. The acquisition would be a strip of land approximately three meters (10 feet) deep on the El Monte Way frontage, primarily to allow for sidewalk construction along the park frontage

(Attachment A, Figure A-2a). Loss of public parkland and landscape improvements is considered an adverse effect.

Facilities, functions, and/or activities affected: This right-of-way acquisition would not affect any of the developed facilities in the park, nor would it prevent continued use of the park for community celebrations or individual and family uses such as picnics, play and passive recreational pursuits.

Accessibility: This alternative would improve accessibility in accordance with the Americans with Disabilities Act, by providing continuous sidewalks along El Monte Way and Rose Ann Vuich park frontage. Pedestrian and traffic safety along El Monte Way would be improved by providing additional signalized intersections making pedestrian crossing of El Monte Way safer.

Visual: Alternative 2 would have a minor impact on Rose Ann Vuich Park. The right-of-way widening would require 3,799 square feet of existing grass and would allow for the installation of a sidewalk along the park frontage and would have only minor impacts on landscaping (Attachment A, Figure A-2b).

Noise: The nearest park facility to the roadway is the band shell; the band shell faces north with seating arranged on the north side of the shell. Under existing conditions, the noise level at the first row of seating is approximately 55 dBA, Leq. The noise level calculated for the year 2030 without the project is 59 dBA, Leq. With the project under Alternative 2, the projected noise level at the nearest seating would be 57 dBA, Leq, slightly less than the No-Build Alternative.

Vegetation: As noted under visual, this alternative would remove a minor amount of landscaping. There are no plant communities with high habitat value or special-status plant species present on the park site.

Wildlife: The value of wildlife habitat in Rose Ann Vuich Park is limited due to its low level of diversity and high levels of disturbance present in the urban environment. The mature trees in the park provide roosting and nesting places for bird species tolerant of disturbance (northern mockingbird, western scrub jay and American robin). This alternative would have minor impacts on landscaping. Therefore the proposed use of the park by the proposed project would have a minor effect on wildlife.

Air Quality: The proposed project would not result in an increase in traffic over the No-Build Alternative, nor would it result in a redistribution of traffic patterns in the area. The project-level carbon monoxide analysis predicted that the carbon monoxide concentrations under 2030 project conditions would not exceed federal or state standards. Therefore the project would not cause adverse air quality impacts on the park.

Water Quality: There are no open waterways within or adjacent to the park. Roadway runoff would be handled by the City's storm drain collection system therefore the project would not have any effect on water quality related to the park.

Avoidance Alternatives

The proposed project is the widening of Avenue 416, a regional arterial roadway in the City of Dinuba. Section 4(f) resources are located on both sides of Avenue 416 with Rose Ann Vuich Park on the north side and the former Maya Theater on the south side. To avoid these 4(f) resources a bypass to the north or south of Avenue 416 has been considered. However these alternatives are not prudent or feasible for the following reasons:

- It would not meet the project purpose and need to improve circulation, safety, and congestion in downtown Dinuba.
- It would be inconsistent with the Circulation Plan contained in the City of Dinuba General Plan. Avenue 416 is designated as an arterial roadway and needs to provide adequate capacity to serve its function as a traffic carrier and as an east-west regional connection to the center of the city.
- A bypass would pose both safety and operational problems. A bypass would connect the existing Avenue 416 alignment at the west and east ends of the City thus creating sight and design speed problems.
- A bypass would likely result in impacts to other potential 4(f) resources.
- A bypass would result in severe economic impacts to businesses and services that depend upon high traffic volumes and visibility/accessibility.
- A bypass could not avoid established residential areas of the City, which would cause extraordinary community disruption and relocation

Avenue 416 Widening			
Alternative	**Feasible and Prudent Alternative?**	**Uses 4(f) Land?**	**Relative Net Harm to Section 4(f) Land After Mitigation**
1	Yes	Yes	Rose Ann Vuich Park – loss of approximately 8.7% Maya Theater – loss of frontage approximately .75% Levis House – loss of 4.9% of parcel – complete loss or relocation of house on same parcel
2	Yes	Yes	Rose Ann Vuich Park – loss of approximately 0.9% Maya Theater – demolition of structure Levis House – equal to Alternative 1
Bypass North	No	Yes (NA)[b]	NA
Bypass South	No	No (NA)[b]	NA

[b] Since this alternative is not feasible and prudent, it should be eliminated from further consideration. Whether Section 4(f) land is used and the relative harm to Section 4(f) protected properties are no longer relevant factors.

Measures to Minimize Harm to Rose Ann Vuich Park

During final project design, it may be possible to minimize the right-of-way requirements from the park by reducing the width of the median for that portion of El Monte Way in front of Rose Ann Vuich Park. The median cannot be eliminated because it is required to accommodate the westbound dual left turn lanes at the intersection of El Monte Way and Perry/Tulare.

Elimination of shoulders for this portion of El Monte Way was considered but rejected based on the design teams recommendation that this was the best way to meet the project's purpose and need of pedestrian and traffic safety. The shoulders would provide a buffer between the westbound travel lanes and pedestrians using the park and sidewalk adjacent to El Monte Way.

Alternative 1

The following are mitigation measures contained in Section 2.1.1.3 in Chapter 2 of the Environmental Impact Report/Environmental Assessment.

Project proponents will be responsible for replacing approximately 3,251 square meters (34,990 square feet) of parkland acquired from Rose Ann Vuich Park and 128 square meters (1,380 square feet) acquired from the landscaped open space area at Mariposa and J Street. The actual replacement requirement should be determined upon final project design since the amount of right-of-way needed may change.

1. Proponents shall incorporate into Rose Ann Vuich Park the remainder of two adjacent parcels (Assessor's Parcel Numbers 014-171-009 and 014-171-010) along El Monte Way to the east of the park (see Attachment A, Figure A-1) that will be acquired for road widening purposes.

2. Subject to the review and approval of the City of Dinuba Parks and Recreation Director, proponents shall prepare a landscape plan that, at a minimum, provides new landscaping in the new park addition area and replaces the landscape along the entire El Monte Way park frontage with plantings similar to those that have been removed. Size of replacement trees shall be 24-inch-box-size for trees six inches or larger in diameter at breast height (diameter measured 4.5 feet above ground – diameter at breast height), and 15-gallon-size container for trees smaller than six inches diameter at breast height.

3. The remainder parcel (Assessor's Parcel Number 017-061-003) and abandoned portion of Mariposa Avenue, located at Mariposa Avenue and El Monte Way (see Environmental Impact Report/Environmental Assessment Figure 2-5) shall be used to construct a park with appropriate landscaping and amenities (e.g., picnic areas and/or limited play equipment) subject to the approval of the City of Dinuba Parks and Recreation Director. The open space parcel at Merced and El Monte Way (Assessor's Parcel Number 017-083-004) shall be re-landscaped to restore shade trees, sidewalk and lawn.

3. The remainder parcel (Assessor's Parcel Number 017-061-003) and abandoned portion of Mariposa Avenue, located at Mariposa Avenue and El Monte Way (see Environmental Impact Report/Environmental Assessment Figure 2-5) shall be used to construct a park with appropriate landscaping and amenities (e.g., picnic areas and/or limited play equipment) subject to the approval of the City of Dinuba Parks and Recreation Director. The open space parcel at Merced and El Monte Way (Assessor's Parcel Number 017-083-004) shall be re-landscaped to restore shade trees, sidewalk and lawn.

4. The balance of the parkland shall be compensated for by purchase of additional parkland at other park locations within the City of Dinuba or improvement of park facilities, either at Rose Ann Vuich Park or other parks within the city. The amount of compensation shall be determined during the appraisal process. Provide landscaping, including shade trees, on the small remainder parcel at Merced Avenue (Assessor's Parcel Number 017-083-004) (see Environmental Impact Report/Environmental Assessment Figure 2-5)

Alternative 2:

Project proponents will be responsible for replacing approximately 353 square meters (3,799 square feet) of parkland acquired from Rose Ann Vuich Park and 364 square meters (3,920 square feet) acquired from the landscaped open space area at Mariposa and J Street. The actual replacement requirement should be determined upon final project design since the amount of right-of-way needed may change.

1. Subject to the review and approval of the City of Dinuba Parks and Recreation Director, proponents shall prepare a landscape plan that at a minimum replaces the landscape along the entire El Monte Way park frontage with similar plantings as those that have been removed. Size of replacement trees shall be 24-inch-box-size for trees six inches or larger in diameter, measured 4.5 feet above ground, and 15-gallon-size container for trees smaller than six inches diameter.

The remainder parcel and abandoned portion of Mariposa Avenue, at Mariposa Avenue and El Monte Way (Assessor's Parcel Number 017-083-004) (See Environmental Impact Report/Environmental Assessment Figure 2-7) shall be used to construct a park with appropriate landscaping and amenities (e.g., picnic areas and/or limited play equipment) subject to review and approval by the City of Dinuba Parks and Recreation Director. The remnant parcels at I Street and on the east side of the Merced Avenue cul-de-sac provide small open space areas with shade trees and other landscaping as appropriate.

Concluding Statement

Based on the above considerations, there is no feasible and prudent alternative to the use of land from Rose Ann Vuich Park and the proposed action includes all possible planning to minimize harm to Rose Ann Vuich Park resulting from such use.

SECTION 4(F) PROPERTIES – HISTORIC SITES

There are a total of 344 architectural properties and 15 engineering resources within the project's area of potential effect. One hundred and nine (109) of the architectural properties and one of the bridges are less than 45 years old, do not represent significant architectural or engineering designs, do not appear to meet the criteria for eligibility to the National Register of Historic Places, and are not locally significant. Two hundred twenty-one (221) of the architectural properties and 14 engineering resources are over 45 years old. However, these properties lack integrity and/or historical and architectural significance and do not appear to meet the criteria for eligibility to the National Register of Historic Places, nor are they locally significant. These resources do not trigger the provisions of Section 4(f) and are not included in the following discussion.

Six properties are eligible for inclusion in the National Register of Historic Places and are considered historic sites for the purposes of Section 4(f) (see Attachment C, Correspondence).

National Register of Historic Places-Eligible Historic Sites

The six National Register of Historic Places-eligible historic sites, the criterion they are eligible under, and the 4(f) evaluation triggered are in the table below:

Property Name	**Criteria**	**4(f) Evaluation Performed**
Maya Theatre	A & C	Individual
Levis	C	Individual
Woodhouse	C	De minimis
Nichols House	C	De minimis
Windsor Christian Academy	A &C	None (no impacts)
Nelson House	C	None (no impacts)

** see the State Historic Preservation Officer's concurrence letter Appendix N of the Environmental Impact Report/Environmental Assessment

The Maya Theater and Windsor Christian Academy meet criteria A and C for eligibility to the National Register of Historic Places at a local level for their association with important events in Dinuba's regional history and for their architecture. The other properties meet Criterion C (architecture) at a local level of significance. The residential properties that appear eligible represent styles that are rare or notable within the City of Dinuba or outlying rural areas. They consist of a French Eclectic-style house and garage, Mission Revival-style house, Craftsman-style house and a farmstead with a Queen Anne-style house.

The Windsor Christian Academy and Nelson House would not be affected by the project and would not trigger provisions of Section 4(f) as discussed below under *"Other Parks, Recreational Facilities, Wildlife Refuges and Historic Properties Evaluated Relative to Section 4(f)."*

Figures showing the historic site locations and surrounding parcels are provided in Attachment B.

Individual 4(f) Evaluations

Former Maya Theater (Assessor's Parcel Number 018-011-007)

The Modernistic-style Maya Theater is located on the southwest corner of Tulare Street and East El Monte Way in Dinuba, Tulare County. The theater is on a triangular-shaped parcel that totals 0.11 hectares (0.28 acres) in size. The movie theater served as an important center for social activity amongst Dinuba's Spanish-speaking population, from 1950, when it was established as the Maya Theater. This building is Dinuba's only intact example of a Modernistic-style movie theater and as the best example of such a theater in the surrounding rural region. It was built in 1940 and opened as the Tower Theatre. The former theater has been acquired by one of the church congregations and is being refurbished for their use. It retains its community function.

Impacts to the Maya Theatre

Alternative 1 - A total of 8.5 square meters (92 square feet) of frontage would be taken from the Maya Theater property, out of a total of 1133.2 square meters (12,198 square feet), a loss of 0.75 percent. There would be no noticeable noise impacts or visual changes to the current view shed that would be considered significant. The loss of property represents a loss of existing concrete; no vegetation would be affected. *(Attachment B, Figure B-1)*

Alternative 2 – The 1,133.2-square-meter (12,198-square-foot) lot that includes the Maya Theater would be acquired. The theater would be moved or destroyed. Loss of the Maya Theater would be considered a loss under provisions of Section 4(f). *(Attachment B, Figure B-2)*

Measures to Minimize Harm to the Maya Theatre

Alternative 1 –Under this alternative there are no impacts that would require mitigation.

Alternative 2 – To mitigate for the loss of local Hispanic history (Criterion A) associated with the former Maya Theater, the project proponent should prepare a pamphlet, in consultation with the State Historic Preservation Officer, Caltrans and FHWA, describing the history of the Maya Theater, illustrated with contemporary and historic photographs. This pamphlet should focus on the importance of the theater to the Hispanic community and should be produced in both English and Spanish. Details on pamphlet copies and distribution and provided in Chapter 2, Section 2.1.8.6 and Chapter 3 of the Environmental Impact Report/Environmental Assessment.

The project proponent shall explore moving the Maya Theater to another location. The structure should be rehabilitated following *Secretary of the Interior's Standards for*

Rehabilitation and Guidelines for Rehabilitating Historic Buildings (United States Department of the Interior, National Park Service, 1983; hereafter *Standards and Guidelines*) using the State Historic Building Code (Title 24), in consultation with the State Historic Preservation Officer, Caltrans and FHWA for use as a community center or public information center, or for resale as a community-oriented structure.

Prior to moving or demolishing the theater, the proponent shall, in consultation with FHWA, Caltrans and the State Historic Preservation Officer, provide documentation of the structure for the historical record, using as modified Historic American Building Survey/Historic American Engineering Record format. Documentation standards and a list of repositories that should receive the documentation are provided in Chapter 2, Section 2.1.8.6 of the Environmental Impact Report/Environmental Assessment.

Concluding Statements

Based on the above considerations, there is no feasible and prudent alternative to the use of land from the former Maya Theater and the proposed action includes all possible planning to minimize harm to the former Maya Theater resulting from such use.

Levis House (Assessor's Parcel Number 393-083-32)

This privately-owned farmstead, with its Craftsman-style house, is located at 14252 East Mountain View Avenue in the Kingsburg area of Fresno County and is situated at the west end of a 15.99-hectare (39.5-acre) lot. The house on this property was built in 1910 and is an impressive regional example of the Craftsman style with Queen Anne and/or Tudor Revival elements and a rare regional example of a rural house arrangement (two-story house with an engaged tank house). Other structures on the farmstead include a garage and shed, built by the Levis family between 1910 and 1925. (Attachment B, Figure B-3)

Impacts to the Levis House

Alternative 1 - Widening the roadway in front of the Levis House would result in expansion of the road to the front of the structure, resulting in a zero setback. Under Alternative 1, 7,928.5 square meters (85,344 square feet) of the 159,856.6-meter-square (1,720,737 square foot) parcel would be acquired, a loss of 4.9 percent. While this percentage is minimal, the take will include the house and all outbuildings, resulting in a net loss of the Section 4(f) historic site. The house may be moved back on the lot, retaining its residential use, rather than be subjected to demolition.

Alternative 2 – Impacts to the Levis House under Alternative 2 are the same as those proposed under Alternative 1.

Measures to Minimize Harm to the Levis House

Alternative 1 and Alternative 2
Project Proponent (Fresno County in Segments A and B) shall consider moving the residence back from the proposed right-of-way, yet retain its location within the existing parcel. The residence should be rehabilitated following *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (United States Department of the Interior, National Park Service, 1983; hereafter *Standards and Guidelines*) using the State Historic Building Code (Title 24) and principles of adaptive reuse, in consultation with the State Historic Preservation Officer, Caltrans and FHWA.

Mature vegetation that contributes to the setting of the property should be retained or replaced in kind, should the house remain on the parcel. Replacement in kind shall consist of a four to one ratio of planting like species for every tree removed.

Prior to moving or demolishing the house, the proponent shall, in consultation with FHWA, Caltrans and the State Historic Preservation Officer, provide documentation of the structure for the historical record, using as modified Historic American Building Survey/Historic American Engineering Record format. Documentation standards and a list of repositories that should receive the documentation are provided in Chapter 2, Section 2.1.8.6 of the Environmental Impact Report/Environmental Assessment.

This resource resides within the Fresno County segment. Modification to the alignment or widths (shoulders or lanes) would cause new impacts to a property on the south side of Avenue 416 and ultimately would not meet the project's purpose and need to provide an acceptable level of service.

Concluding Statement
Based on the above considerations, there is no feasible and prudent alternative to the use of land from the Levis House and the proposed action includes all possible planning to minimize harm to the Levis House resulting from such use.

Avoidance Alternatives
The proposed project is the widening of Avenue 416, a regional arterial roadway in the City of Dinuba. Section 4(f) resources are located on both sides of Avenue 416 with Rose Ann Vuich Park on the north side and the former Maya Theater on the south side. To avoid these 4(f) resources a bypass to the north or south of Avenue 416 has been considered. However these alternatives are not prudent or feasible for the following reasons:

- It would not meet the project purpose and need to improve circulation, safety, and congestion in downtown Dinuba.

- It would be inconsistent with the Circulation Plan contained in the City of Dinuba General Plan. Avenue 416 is designated as an arterial roadway and needs to

provide adequate capacity to serve its function as a traffic carrier and as an east-west regional connection to the center of the city.

- A bypass would pose both safety and operational problems. A bypass would connect the existing Avenue 416 alignment at the west and east ends of the City thus creating sight and design speed problems.

- A bypass would likely result in impacts to other potential 4(f) resources.

- A bypass would result in severe economic impacts to businesses and services that depend upon high traffic volumes and visibility/accessibility.

- A bypass could not avoid established residential areas of the City, which would cause extraordinary community disruption and relocation.

Avenue 416 Widening			
Alternative	**Feasible and Prudent Alternative?**	**Uses 4(f) Land?**	**Relative Net Harm to Section 4(f) Land After Mitigation**
1	Yes	Yes	Rose Ann Vuich Park – loss of approximately 8.7% Maya Theater – loss of frontage approximately .75% Levis House – loss of 4.9% of parcel – complete loss or relocation of house on same parcel
2	Yes	Yes	Rose Ann Vuich Park – loss of approximately 0.9% Maya Theater – demolition of structure Levis House – equal to Alternative 1
Bypass North	No	Yes (NA)[b]	NA
Bypass South	No	No (NA)[b]	NA

[b] Since this alternative is not feasible and prudent, it should be eliminated from further consideration. Whether Section 4(f) land is used and the relative harm to Section 4(f) protected properties are no longer relevant factors.

Properties found to meet the De minimis Criteria

Woodhouse Residence (Assessor's Parcel Number 018-022-001)

The French Eclectic-style house and garage would be impacted by the project, taking approximately 496 square feet of lawn, however, these affects would be minor and were found to have no adverse effect on the property *(Attachment B, Figure B-4)*. It is also discussed in Chapter 2 of the environmental document under Cultural Resources.

The proposed roadway does not change the existing paved roadway section in front of this property. Reduction of lane widths would not satisfy Dinuba's primary concern of pedestrian and vehicle safety and would not meet the project's purpose and need.

Nichols House ***(Assessor's Parcel Number 014-061-016)***

Minimal impacts would occur to the Mission Revival-style house (Nichols House). Minimal take of the U-shape driveway and lawn totaling approximately 3,374 square feet would be required. *(Attachment B, Figure B*-5) These impacts were found to have no adverse effect on the historic site. The Nichols House is covered under the De Minimus Section 4(f) Evaluation that was prepared by the California Department of Transportation, District 06, in 2007. It is also discussed in Chapter 2 of the environmental document under Cultural Resources.

The proximity of this property to Road 80 results in some impacts to the frontage of this property. In order to meet the project's purpose and need and specifically for the roadway design to satisfy the findings of the traffic study for the number of through and turn lanes required at the intersection of El Monte Way and Road 80 (westbound single right turn lane and dual left turn lanes at Road 80), impacts to the Nichols House property cannot be avoided. The shoulder has been eliminated in front of the Nichols House and the median separating westbound and eastbound lanes has also been eliminated.

OTHER PARKS, RECREATIONAL FACILITIES, WILDLIFE REFUGES AND HISTORIC PROPERTIES EVALUATED RELATIVE TO SECTION 4(F)

This section of the document discusses other parks, recreational facilities, wildlife refuges and historic properties found within or adjacent to the project area that do not trigger Section 4(f) protection either because: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not eligible historic properties, 4) the project does not permanently use the property and does not hinder the preservation of the property, or 5) the proximity impacts do not result in constructive use.

Parks and Recreational Facilities

The following parks and recreational facilities are located within the City of Dinuba and are within 0.8 kilometers (0.5 mile) of the proposed project. There are no such facilities located within 0.8 kilometers (0.5 mile) of the project segments located in the unincorporated portions of Fresno and Tulare County.

Table B-2. Existing and Planned Parks in the City of Dinuba

Name of Park	Size		Distance from Project
Existing Parks	**Hectares**	**Acres**	
Dinuba Community Center	0.5	1.3	122 meters (400 feet) south
Roosevelt Park	1.7	4.2	122 meters (400 feet) south
Alice Park	0.2	0.5	305 meters (1000 feet) north
Rotary Park	0.1	0.3	0.8 kilometers (0.5 mile) north
Dinuba High School	9.0	22.3	366 meters (1200 feet) south
Jefferson Elementary School	4.0	10	0.8 kilometers (0.5 mile) south
Lincoln Elementary School	4.0	10	0.8 kilometers (0.5 mile) north
Pamela Way Park	0.5	1.2	244 meters (800 feet) north
East Sierra Park	8.1	20	305 meters (1000 feet) south
Euclid Park	2.4	5.9	640 meters (2100 feet) north

All of these resources would be protected by the provisions of Section 4(f) since they are public parkland. The project would have no effect on the above-listed parks and recreational facilities since they are all located outside of the area affected by right-of-way acquisition and outside of the area that would be affected by construction activities. Construction of the project would not affect the functions or activities of these facilities, adversely affect accessibility to the facilities, cause visual impacts and/or noise impacts, affect vegetation and/or wildlife, or affect the air quality and/or water quality of these facilities. Therefore, the provisions of Section 4(f) do not come into play with respect to these parks and recreational facilities.

In addition to Rose Ann Vuich Park, both build alternatives would affect a triangular-shaped parcel (Assessor's Parcel Number 17083004), known as Merced Triangle Park, located on the south side of El Monte Way at Merced Avenue (shown as Parcel Remnant Merced West in Figures 2-5 and 2-7 in the Environmental Impact Report/Environmental Assessment). This 364-square-meter (3,920-square-foot) area is city property that is landscaped with lawn and trees and maintained by the City Parks and Recreation Department. This area is not shown in the Parks and Recreation Master Plan, and the City has stated that the parcel is not considered a significant facility for purposes of parks and recreation (Attachment C); therefore, the provisions of Section 4(f) are not triggered.

Historic Sites

Windsor Christian Academy (Assessor's Parcel Number 012-160-031)

The Spanish Eclectic-style Windsor Christian Academy is located on a 4.2-acre parcel at 5018 Avenue 416 in the Reedley area of Tulare County. The school is significant under the theme of education and community development as a rare example of the small rural school district institutions that were once an important aspect of the educational and social history of the region. In addition to its educational function, the school served as a community center and social hall for colony residents, providing a central social hub and gathering place for the surrounding population. It also served as a temporary church for local Russian Mennonites. This property's period of significance under this criterion is from 1923, the year the school was built for the Windsor School District, to 1960, when the school ceased being part of its own school district.

The 1923 school is a well-preserved example of early 1900s rural school architecture in the San Joaquin Valley and is one of few representations of the school designs of Ernest J. Kump, Sr., a noted San Joaquin Valley master architect. The property's architectural period of significance is 1923, the year the school building was completed. The school is now privately owned and operated and remains in use as an educational facility.

Under Alternatives 1 or 2, the project has been designed to avoid the Windsor Christian Academy and there will be no take of land at the *site (Attachment B, Figures B-6 and B-7)*. The main difference between both alternatives is the size of a temporary construction easement that would be needed for a short period during the road-widening project. This will not affect the property over the long-term, and there will be no loss of the historic site that would trigger provisions under Section 4(f).

Nelson Estate (Assessor's Parcel Number 393-090-70)

Built around 1900, the Nelson Estate farmstead includes a Queen Anne-style house and is located at 15040 East Mountain View Avenue in the Kingsburg area of Fresno County within a 1.74-hectare (4.3-acre) lot. The house (with engaged tank house) is one of the few well-preserved and exceptional examples of Queen Anne architecture in this area of Fresno County and is a rare regional example of a rural house arrangement (two-story house with an engaged tankhouse). The property as a whole, with its contemporaneously built house, tankhouse, barn, garage and shed access road and vegetation (willows, maples), is one of a few intact representations in the area of turn-of-the-nineteenth-century farmstead architecture. The farmstead is privately owned and remains in residential use.

A total of 3,365 square meters (36,224 square feet) of the 17,402-square-meter (187,321-square-foot) parcel would be acquired for Alternative 1 and 2, a loss of 19.3 percent. This loss would not include the house or contributing vegetation contained within the fenced property surrounding the house. Removal of a line of evergreen trees that front on Mountain View Avenue and currently screen the roadway view from the house, would be required *(Attachment B, Figure B-8)*. These trees are modern additions to the historic site

and do not represent a loss of historic vegetation. Their removal would not be considered a loss under the provisions of Section 4(f).

Construction of the project would not affect the functions or activities of these facilities, adversely affect accessibility to the facilities, cause visual impacts and/or noise impacts, affect vegetation and/or wildlife, or affect the air quality and/or water quality of these facilities. The proposed project will not cause a constructive use of the Nelson house because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic site.

COORDINATION

Parkland

The City of Dinuba was consulted regarding the significance of the parklands affected by the Section 4(f) use by the project. A letter dated April 11, 2005 (Attachment C) was provided by the City stating that Rose Ann Vuich Park is a significant recreational resource for the City. It is the most heavily used park in the city for special events such as Cinco de Mayo and the Raisin Day celebration. The City also stated that the project would not affect permanent facilities in the park under either alternative. The City requested implementation of measures to minimize harm to the park, including replacement of lost park area by incorporating adjacent properties acquired as part of the project.

The City also stated that "Merced Triangle Park" is an informal open space with improvements consisting of irrigated lawn, a few mature trees, a single picnic table and a single trash container. The City does not consider this park a significant facility, though it does have aesthetic value.

Historic Sites

The evaluation report for the historic sites and a Finding of Effect document were prepared in compliance with Section 106 of the National Historic Preservation Act and submitted to Caltrans and FHWA for review. The evaluation report was submitted to the

State Historic Preservation Officer on January 19, 2005; a concurrence letter on eligibility was provided to Caltrans from the Office of Historic Preservation on June 26, 2005 (see Appendix N of the Environmental Impact Report/Environmental Assessment). Caltrans submitted the Finding of Effect document to the State Historic Preservation Officer. A concurrence letter on effects was provided to Caltrans from the Office of Historic Preservation on October 24, 2007 (see Appendix N of the Environmental Impact Report/Environmental Assessment). Owners of all historic sites have been included in public noticing efforts, and some have attended public hearings and provided information.

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and Housing and Urban Development in developing transportation projects and programs which use land protected by Section 4(f).

ATTACHMENT A
Parkland

Attachment A : Figure A-1 Impacts to Rose Ann Vuich Park – Alternative 1

Existing

Future

Figure A-1B - Alternative 1, Segment F

View to the West of Rose Ann Vuich Park from the Intersection of Park Avenue and El Monte Way in the City of Dinuba

Attachment A: Figure A – 2. Impacts to Rose Ann Vuich Park – Alternative 2

Existing

Future

Figure A-2B– Alternative 2, Segment F

View to the West from the Intersection of El Monte Way And Snyder Street in the City of Dinuba. Rose Ann Vuich Park is visible in the background. The former Maya Theater is removed.

ATTACHMENT B
Historic Sites

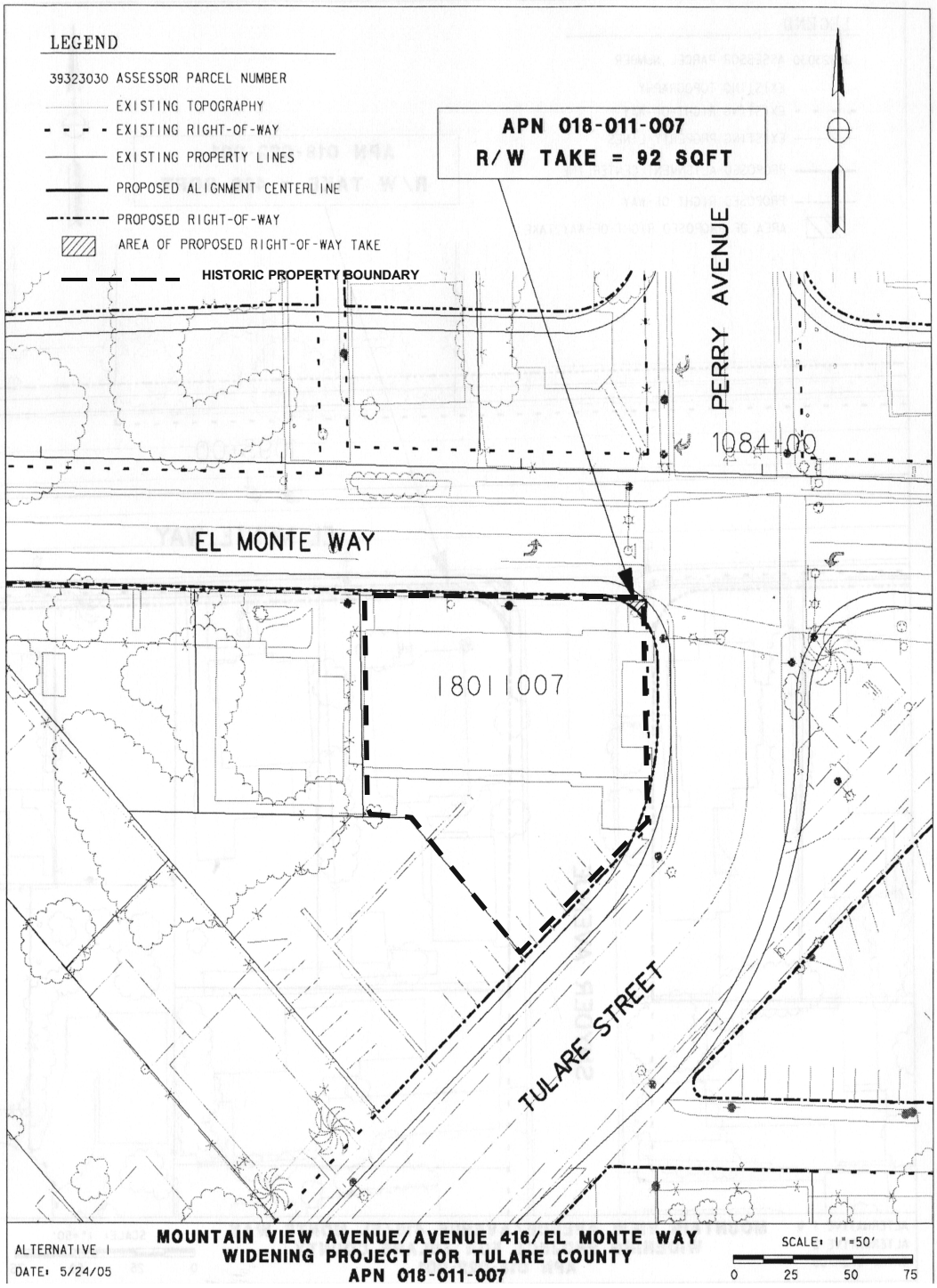


Figure B-1. Former Maya Theater – Alternative 1

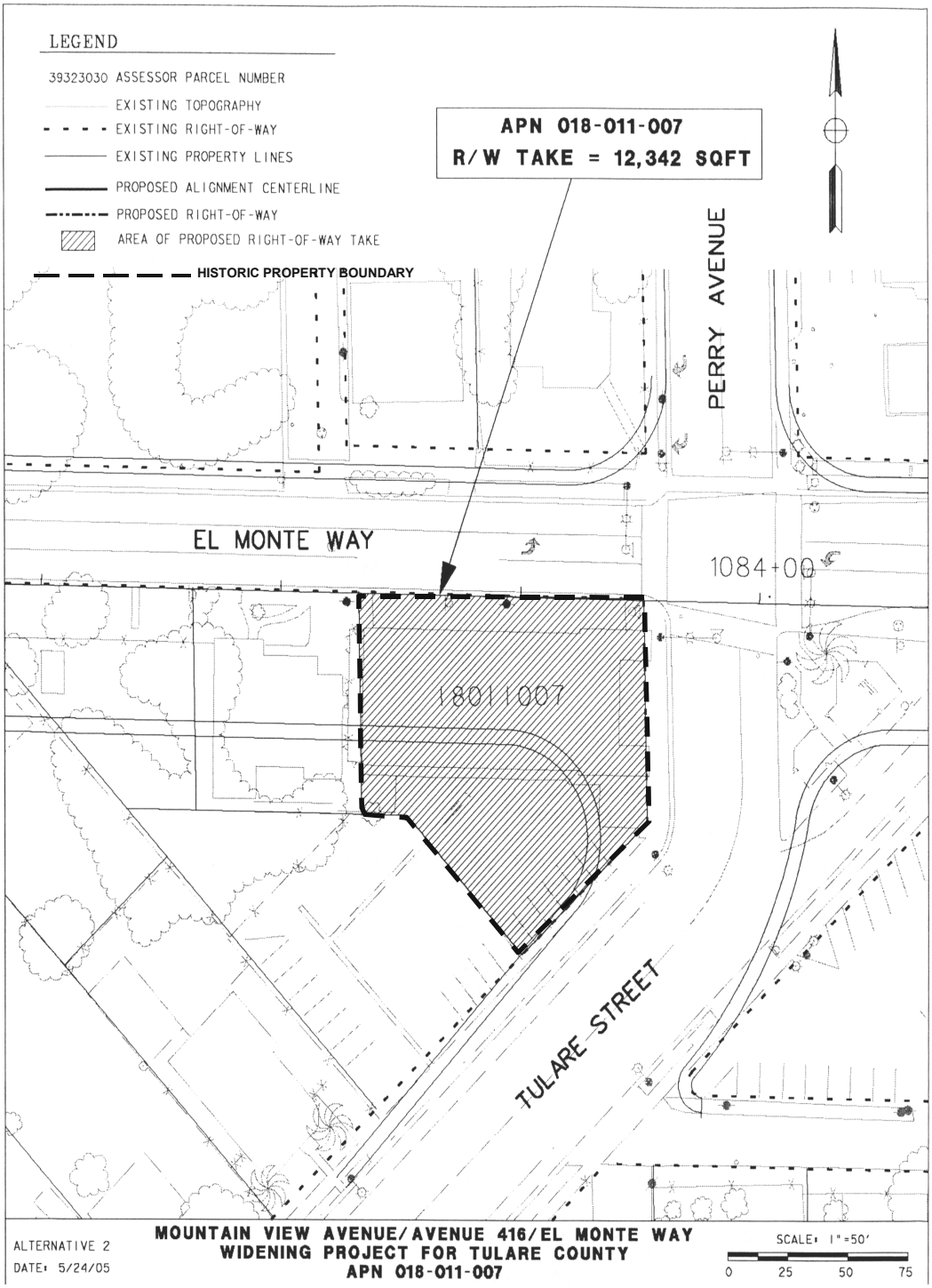


Figure B-2. Former Maya Theater – Alternative 2

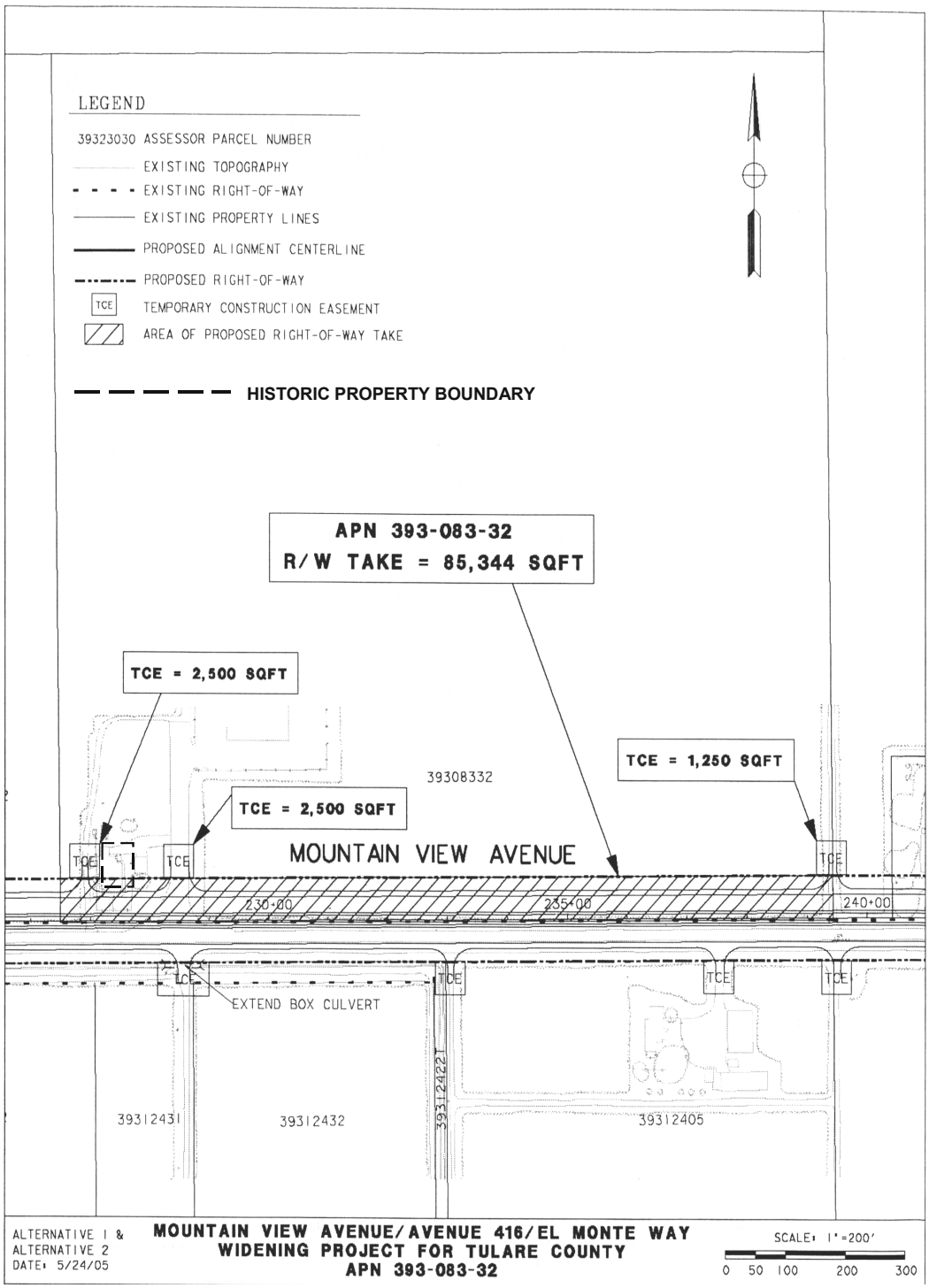


Figure B – 3. Levis House – Alternatives 1 and 2

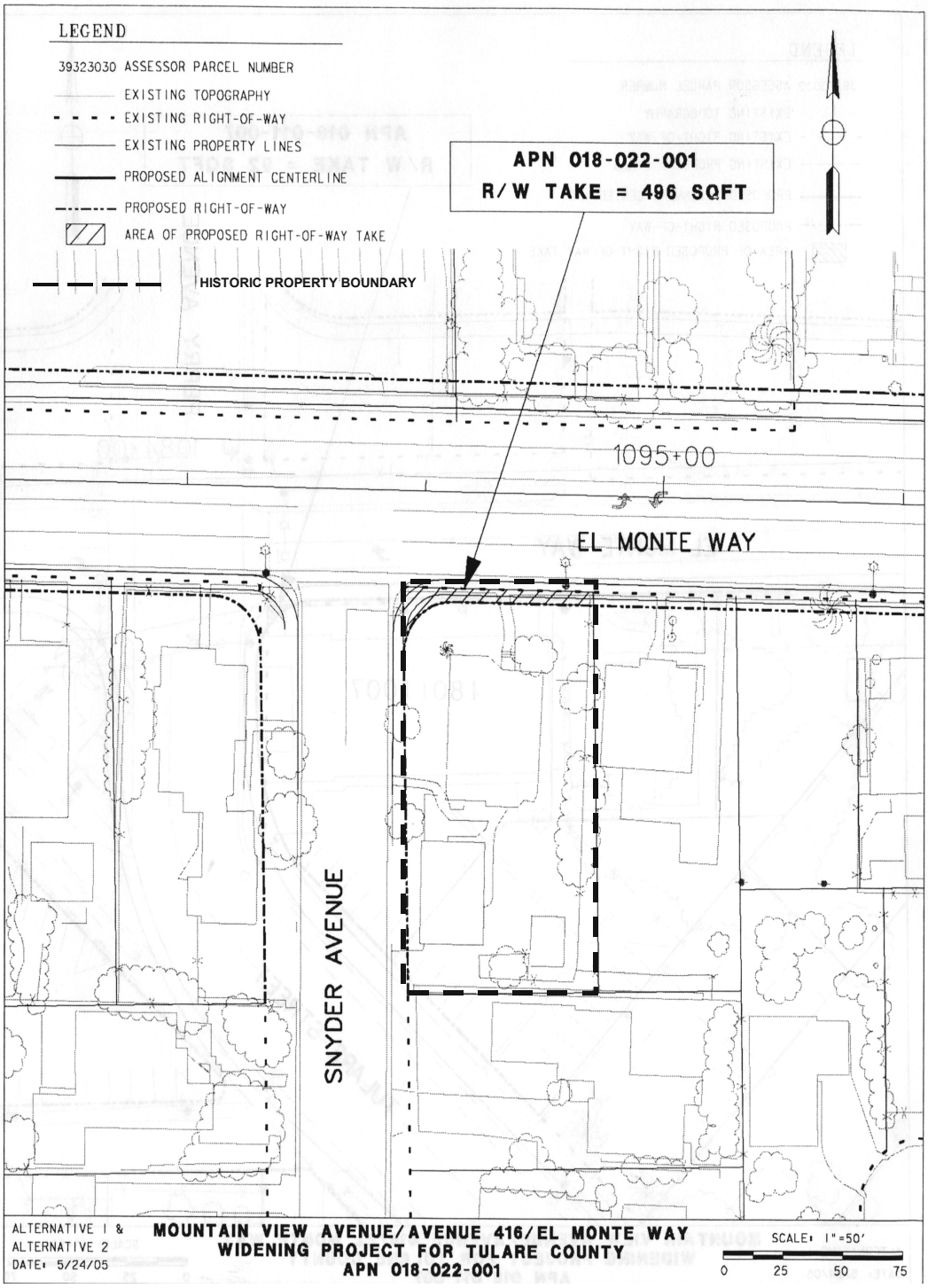


Figure B – 4. Woodhouse Residence – Alternatives 1 and 2

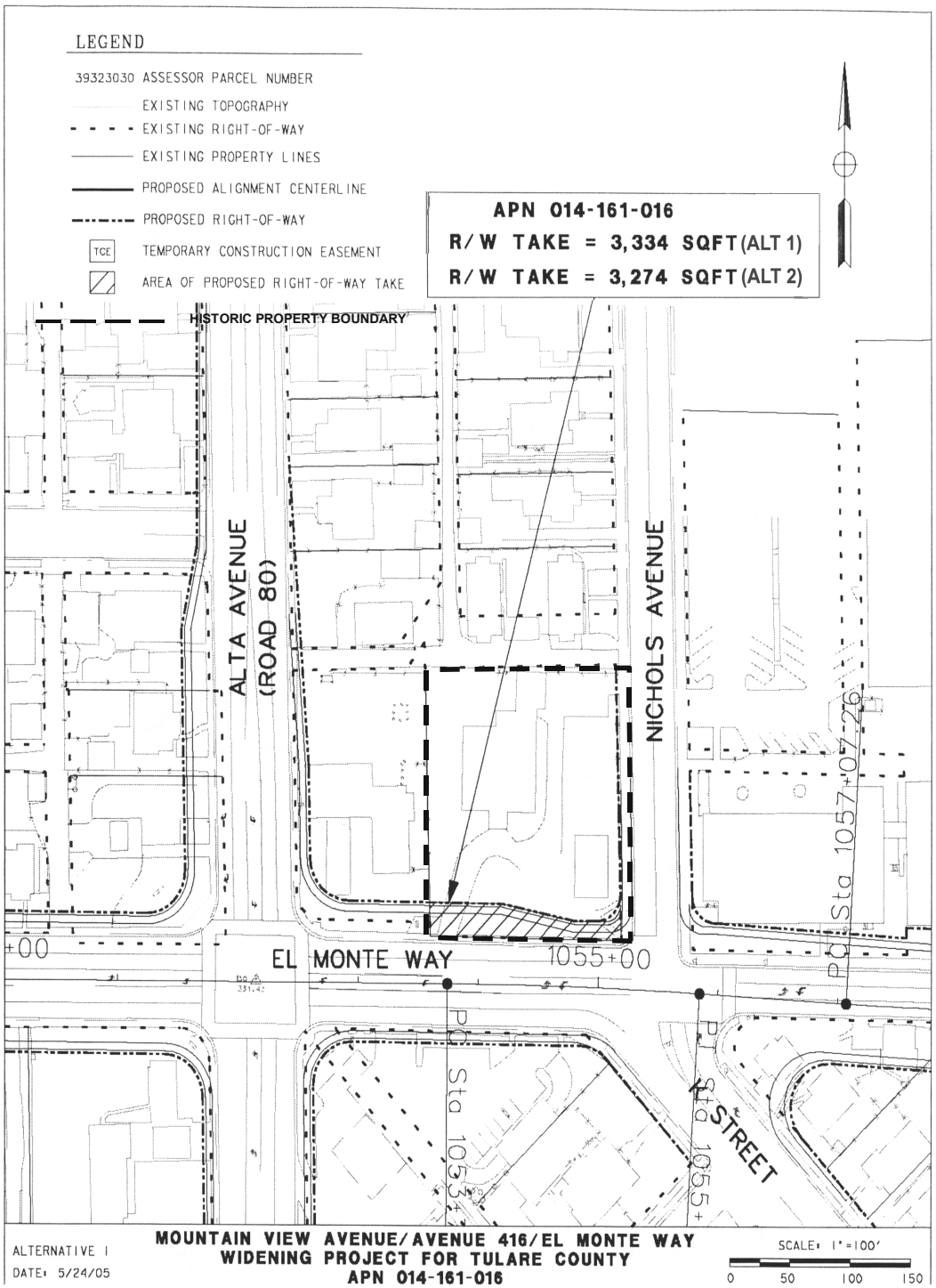


Figure B – 5. Nichols House – Alternatives 1 and 2

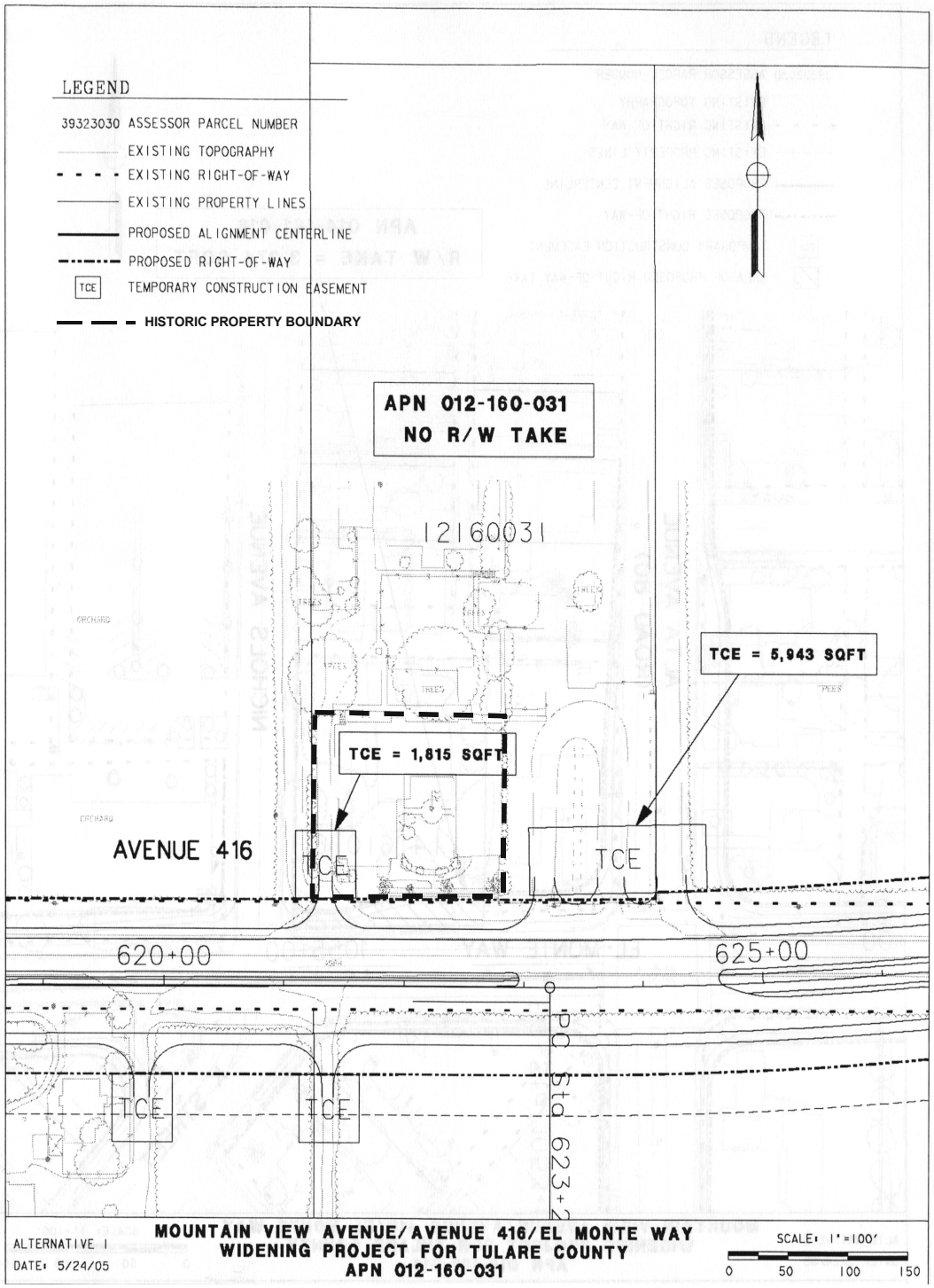


Figure B – 6. Windsor Christian Academy – Alternative 1

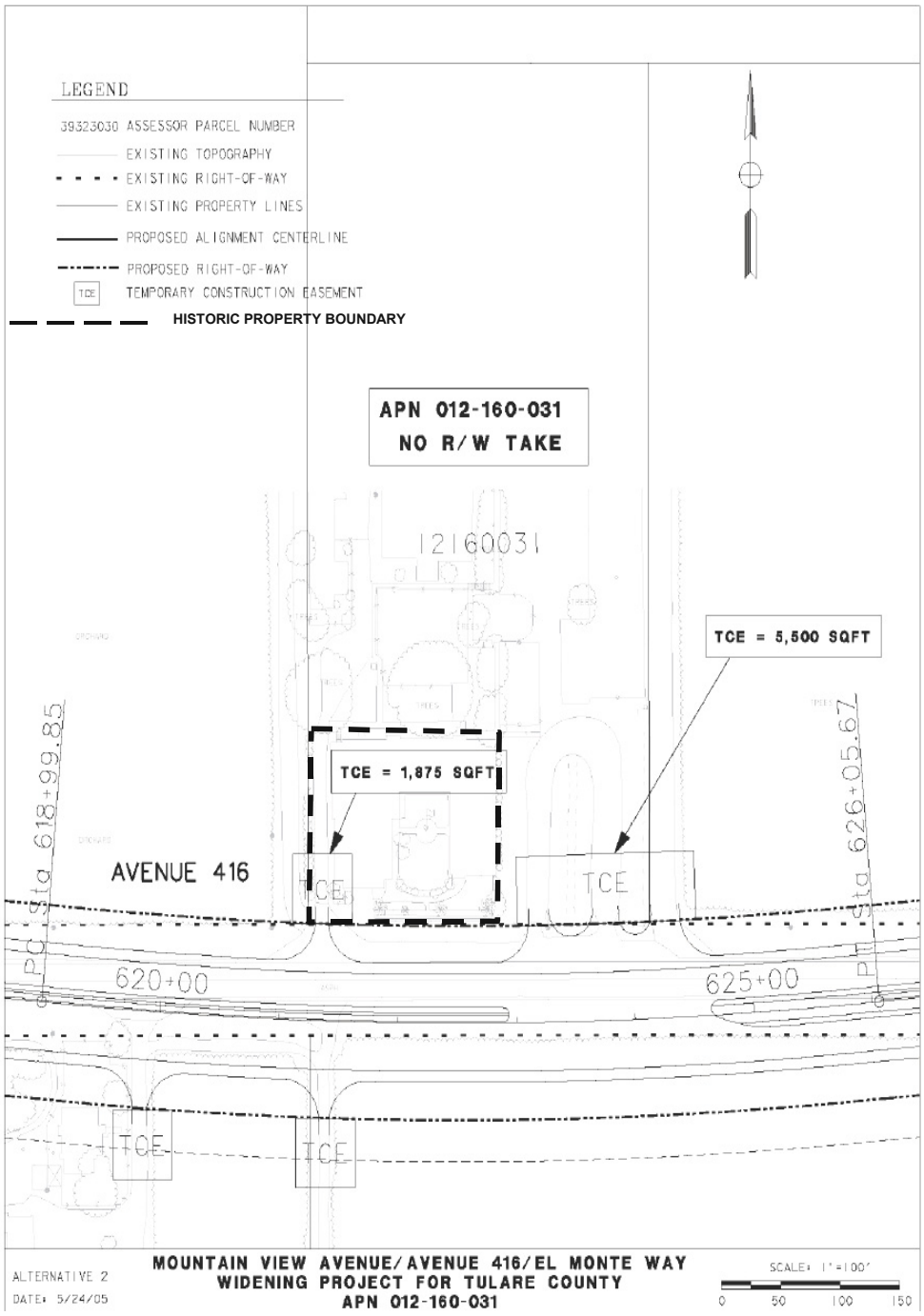


Figure B – 7. Windsor Christian Academy – Alternative 2

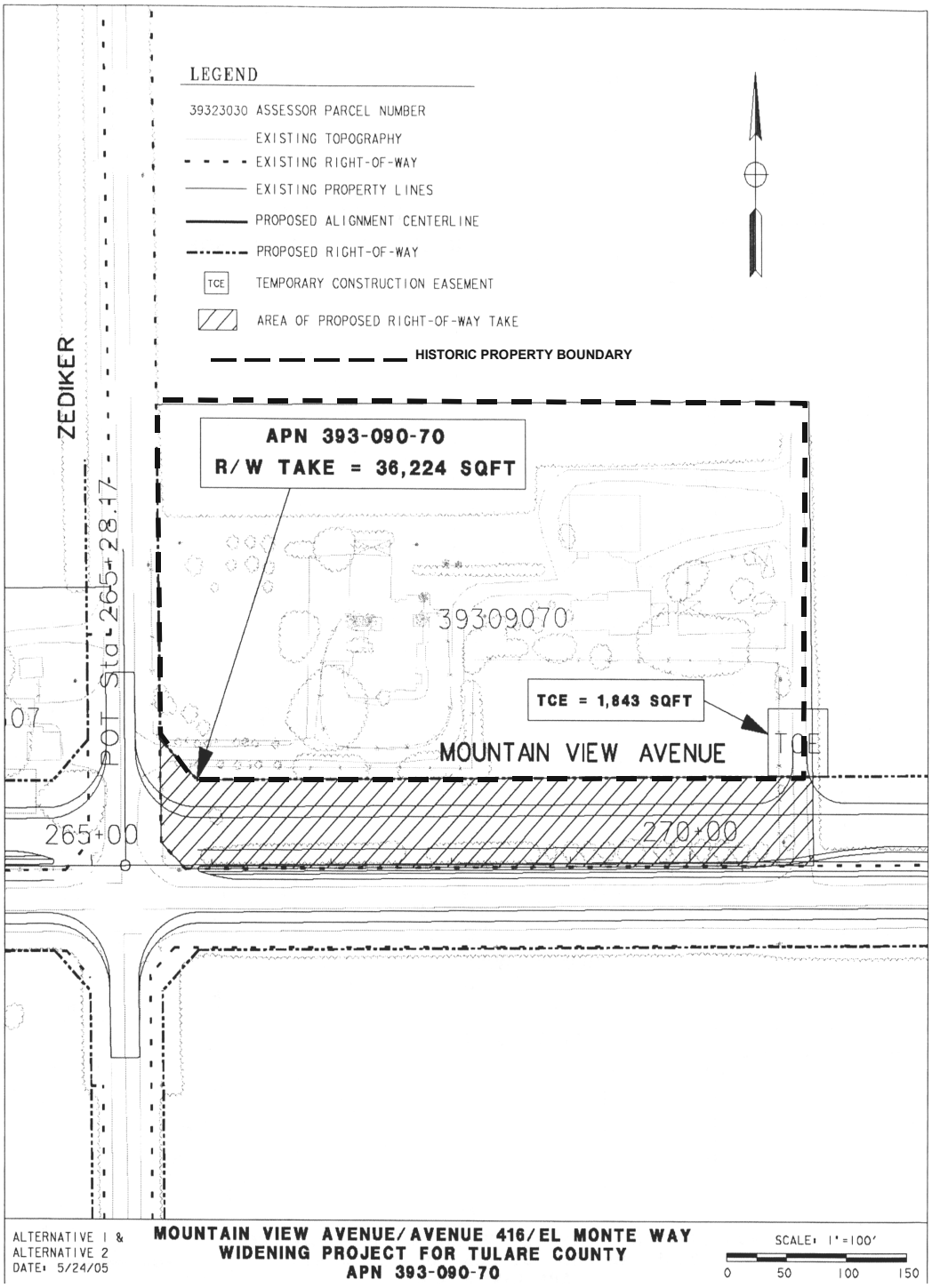


Figure B – 8. Nelson Estate – Alternative 1

ATTACHMENT C
Correspondence

June 27, 2005

Reply To:
FHWA050118A

Gail Miller, Chief
Caltrans San Joaquin Environmental Management Branch
2015 E Shields Avenue, Suite A-100
Fresno, CA 93726-5428

Re: Determinations of Eligibility for the Proposed Avenue 416 Widening Project, Tulare County, CA

Dear Ms. Miller:

The California Department of Transportation (Department) is requesting my concurrence, pursuant to stipulation VIII.C.5 of the PA, in its determination that the following properties are eligible for the National Register of Historic Places (NRHP) for the following reasons:

- **Woodhouse Residence**, 1378 E El Monte Way, Dinuba – Eligible under criterion C at the local level as an excellent example of the French Eclectic architectural style, a style minimally found within the City of Dinuba and the outlying rural area. The period of significance is 1925, the approximate year this house and garage were built. **I concur.**

- **Maya Theater**, Corner of Tulare and E El Monte Way, Dinuba – Eligible under criterion A at the local level of significance as an important center for social activity amongst Dinuba's Spanish-speaking population. The period of significance is 1950, when it was established as the Maya Theater. This theater hosted Spanish-language films and events until the mid-1980s when it was closed.

  The theater is also eligible under criterion C at the local level as Dinuba's only intact example of a Modernistic-style movie theater and the best representation of such a theater in the rural region. Under C the period of significance is 1940, the approximate date the theater was built and opened as the Tower Theater. **I concur.**

- **Levis House**, 14252 E Mountain View Avenue, Kingsburg – Eligible under criterion C at the local level as an excellent example of the Craftsman-style with Queen Anne and Tudor Revival elements and as a rare example of a rural house arrangement (two-story house with an engaged tank house). The period of significance is 1910 to 1925, the approximate span of time in which the house, garage and shed were built by the Levi Family. There are no other buildings on the property that represent the Levis' initial development of the property as a farmstead. **I concur.**

- **Nelson Estate**, 15040 E Mountain Avenue, Kingsburg – The house on this property is individually eligible under criterion C at the local level as one of the few well-preserved and exceptional examples of Queen Anne architecture in this area of Fresno County and as a rare regional example of a rural house arrangement (two-story house with an engaged tank house). The property as a whole also appears eligible under criterion C as one of the few intact representations in the area of turn-of-the-century farmstead architecture. Contributing elements consist of all the buildings, access road and vegetation and is bounded by Mountain View Avenue to the south, Zediker Avenue to the west, and orchard land to the north and east. This includes the Queen-Anne house with engaged tankhouse, the barn, the westernmost shed, and the garage. Vegetation includes the large trees within the fences property. **I concur.**

- **Windsor Christian Academy**, 5018 Avenue 46, Reedley – Eligible under criterion A at the local level as a rare example of the small rural school district institutions that were once an important aspect of the educational and social history of the region. Its period of significance is from 1923 to 1960 when the school ceased being part of its own school district.

  Under criterion C the school is also eligible at the local level as a well-preserved example of early 1900s rural school Spanish-Eclectic style architecture in the San Joaquin valley. It is also one of the few remaining representation of the school designs of Ernest J. Kump, Sr., a noted San Joaquin Valley master architect. The period of significance is 1923, the year the school was completed. The property includes the 1923 school and associated front yard (including the palm tree line) only. **I concur.**

- **Nichols House**, 179 East El Monte Way, Dinuba – Eligible under criterion C at the local level of significance as an excellent and early local example of Mission Revival style and seemingly the only example of this style in Dinuba. The period of significance is 1907, the year the building was built. The 1972 doctor's office building does not contribute to the significance of this property. **I concur.**

Pursuant to stipulation VIII.C.5 of the PA, the Department has also determined that the **properties listed in Table 6 (Page 15) of the HPSR** are *not* eligible for the NRHP. In addition, the Department has determined that the following properties are *not* eligible for the NRHP:

- **1496 E El Monte Way**, Dinuba
- **12408 E Mountainview Avenue**, Kingsburg
- **15468 E Mountainview Avenue**, Kingsburg
- **395 East El Monte Way**, Dinuba
- **1375 East El Monte Way**, Dinuba

I concur.

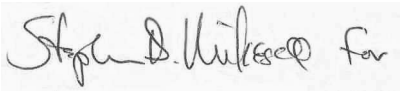
The Department has further determined, also pursuant to stipulation VIII.C.5 of the PA, that the historical archaeological site (Temporary Resource Designation of Ave 416-Site 1, APN 393-121-31, Fresno County) found in the undertaking's area of potential effects (APE) is *not* eligible for inclusion in the NRHP. **I concur**.

One final comment that I would like to make concerns the apparent adequacy of the Department's efforts to identify historic properties in the undertaking's APE pursuant to stipulation VIII.B of the PA. As I reviewed the various documents that the Department submits in support of its above determinations of NRHP eligibility, I became aware that the Department's identification efforts for the undertaking do not appear, pursuant to stipulation VIII.B of the PA, to be "consistent with SHPO guidance." The Department's October 2004 *Historic Properties Survey Report for the Mountain View Avenue/Avenue 416/El Monte Way Widening form Bethel Avenue in Fresno County to Road 92 in Tulare County* defines the vertical component of the undertaking's APE (pp. 7 and 8), but provides no apparent documentation that the potential presence of subsurface

historic properties was given substantive consideration. This apparent omission in the Department's analysis of the undertaking's APE conflicts with my more recent guidance to the Department on appropriate identification methods for Section 106 consultations. I mention this issue here in order to notify the Department that I will comment more formally on it if the Department ultimately makes a finding of effect for the undertaking under either stipulation X.B.1 or X.C of the PA. It was my hope for, and, as I understood it, the actual intent of the PA to preserve standing SHPO guidance on this issue. I would appreciate your consideration of this comment.

Please direct any questions or comments to Project Review Unit historian Natalie Lindquist at (916) 654-0631 or e-mail at nlindquist@parks.ca.gov, or Mike McGuirt, Acting Chief of Project Review at (916) 653-8920 or e-mail at mmcgu@parks.ca.gov .

Sincerely,



Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

MWD:mdm

APPENDIX C
Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY (916) 653-4086

Flex your power!
Be energy efficient!

January 14, 2005

TITLE VI
POLICY STATEMENT

The California Department of Transportation under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, and age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

WILL KEMPTON
Director

APPENDIX D
Summary Of Relocation Benefits

California Dept. of Transportation Relocation Assistance Program

RELOCATION ASSISTANCE ADVISORY SERVICES

The California Department of Transportation (the Department) will provide relocation advisory assistance to any person, business, farm or non-profit organization displaced as a result of the Department's acquisition of real property for public use. The Department will assist residential displacees in obtaining comparable decent, safe and sanitary replacement housing by providing current and continuing information on sales price and rental rates of available housing. Non-residential displacees will receive information on comparable properties for lease or purchase.

Residential replacement dwellings will be in equal or better neighborhoods, at prices within the financial means of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, displaces will be offered comparable replacement dwellings that are open to all persons regardless of race, color, religion, sex or national origin, and are consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include supplying information concerning federal and state assisted housing programs, and any other known services being offered by public and private agencies in the area.

RESIDENTIAL RELOCATION PAYMENTS PROGRAM

The Relocation Payment program will assist eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for, or incidental to, purchasing or renting a replacement dwelling, and actual reasonable expenses incurred in moving to a new location within 80 kilometers (50 miles) of displacee's property. Any actual moving costs in excess of 80 kilometers (50 miles) are the responsibility of the displacee. The Residential Relocation Program can be summarized as follows:

Moving Costs

Any displaced person who was "lawfully" in occupancy of the acquired property regardless of the length of occupancy in the property acquired will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 80 kilometers (50 miles), a moving service authorization, or a fixed payment based on a fixed moving cost schedule which is determined by the number of furnished or unfurnished rooms of the displacement dwelling.

Purchase Supplement

In addition to moving and related expenses payments, fully eligible homeowners may be entitled to payments for increased costs of purchasing replacement housing.

Homeowners who have owned and occupied their property for 180 days prior to the date of the first written offer to purchase the property, may qualify to receive a price differential payment equal to the difference between the Department's offer to purchase their property and the price of a comparable replacement dwelling, and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate. Also the interest differential must be based upon the "lesser of" either the loan on the displacement property or the loan on the replacement property. The maximum

combination of these three supplemental payments that the owner-occupants can receive is $22,500. If the calculated total entitlement (without the moving payments) is in excess of $22,500, the displacee may qualify for the Last Resort Housing described below.

Rental Supplement

Tenants who have occupied the property to be acquired by the Department for 90 days or more and owner-occupants who have occupied the property 90 to 180 days prior to the date of the first written offer to purchase may qualify to receive a rental differential payment. This payment is made when the Department determines that the cost to rent a comparable and "decent, safe and sanitary" replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the eligible occupant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitation noted below under the "Down Payment" section (see below). The maximum amount of payment to any tenant of 90 days or more and any owner-occupant of 90 to 179 days, in addition to moving expenses, will be $5,250. If the calculated total entitlement for rental supplement exceeds $5,250, the displacee may qualify for the Last Resort Housing Program described below.

The rental supplement of $7,500 or less will be paid in a lump sum, unless the displacee requests that it be paid in installments. The displaced person must rent and occupy a "decent, safe and sanitary" replacement dwelling within one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the Department-acquired property, whichever is later.

Down Payment

Displacees eligible to receive a rental differential payment may elect to apply it to a down payment for the purchase of a comparable replacement dwelling. The down payment and incidental expenses cannot exceed the maximum payment of $5,250, unless the Last Resort Housing Program is indicated. The one-year eligibility period in which to purchase and occupy a "decent, safe and sanitary" replacement dwelling will apply.

Last Resort Housing

Federal regulations (49 CFR 24.404) contain the policy and procedure for implementing the Last Resort Housing Program on federal aid projects. In order to maintain uniformity in the program, the Department has also adopted these federal guidelines on non-federal-aid projects. Except for the amounts of payments and the methods in making them, last resort housing benefits are the same as those benefits for standard relocation as explained above. Last resort housing has been designed primarily to cover situations where available comparable replacement housing, or when their anticipated replacement housing payments, exceed the $2,520 and $22,500 limits of the standard relocation procedures. In certain exceptional situations, last resort housing may also be used for tenants of less than 90 days.

After the first written offer to acquire the property has been made, the Department will, within a reasonable length of time, personally contact the displacees to gather important information relating to:

- Preferences in area of relocation.
- Number of people to be displaced and the distribution of adults and children according to age and sex.
- Location of school and employment.
- Special arrangements to accommodate any handicapped member of the family.
- Financial ability to relocate into comparable replacement dwelling, which will house all members of the family decently.

The above explanation is general in nature and is not intended to be a complete explanation of relocation regulations. Any questions concerning relocation should be addressed to the Department. Any persons to be displaced will be assigned a relocation advisor who will work closely with each displacee in order to see that all payments and benefits are fully utilized, and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments.

THE BUSINESS AND FARM RELOCATION ASSISTANCE PROGRAM

The Business and Farm Relocation Assistance Program provides aid in locating suitable replacement property for the displacee's farm or business, including, when requested, a current list of properties offered for sale or rent. In addition, certain types of payments are available to businesses, farms, and non-profit organizations. These payments may be summarized as follows:

- Reimbursement for the actual direct loss of tangible personal property incurred as a result of moving or discontinuing the business in an amount not greater than the reasonable cost of relocating the property.
- Reimbursement up to $1,000 of actual reasonable expenses in searching for a new business site.
- Reimbursement up to $10,000 of actual reasonable expenses related to the reestablishment of the business at the new location
- Reimbursement of the actual reasonable cost of moving inventory, machinery, office equipment and similar business-related personal property, including dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting personal property.

Payment "in lieu" of moving expense is available to businesses which are expected to suffer a substantial loss of existing patronage as a result of the displacement, or if certain other requirements such as inability to find a suitable relocation site are met. This payment is an amount equal to the average annual net earnings for the last two taxable years prior to relocation. Such payment may not be less than $1,000 and not more than $20,000.

ADDITIONAL INFORMATION

No relocation payment received will be considered as income for the purpose of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law (except for any federal law providing low-income housing assistance).

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without being given at least 90 days advance notice, in writing. Occupants of any type of dwelling eligible for relocation payments will not be required to move unless at least one comparable "decent, safe and sanitary" replacement residence, open to all persons regardless of race, color, religion, sex or national origin, is available or has been made available to them by the state.

Any person, business, farm or non-profit organization, which has been refused a relocation payment by the Department, or believes that the payments are inadequate, may appeal for a hearing before a hearing officer or the Department's Relocation Assistance Appeals Board. No legal assistance is required; however, the displacee may choose to obtain legal council at his/her expense. Information about the appeal procedure is available from the Department's Relocation Advisors.

The information above is not intended to be a complete statement of all of the Department's laws and regulations. At the time of the first written offer to purchase, owner-occupants are given a more detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted immediately after the first written offer to purchase, and also given a more detailed explanation of the Department's relocation programs.

IMPORTANT NOTICE

To avoid loss of possible benefits, no individual, family, business, farm or non-profit organization should commit to purchase or rent a replacement property without first contacting a Department of Transportation relocation advisor at:

State of California
Department of Transportation, District #6
Address

APPENDIX E

Glossary Of Technical Terms And List Of Acronymns

Air Quality

ADT
Average Daily Traffic: The average number of trips made on a daily basis through a study area.

Air Basin
An area designated by the Air Resources Board for air quality planning purposes.

CALINE
The CALINE model was developed by Caltrans to calculate ambient concentrations of pollutants from vehicular traffic on a roadway segment, intersection, or parking lot.

CO
Carbon monoxide: an odorless, colorless, toxic gas that is the product of incomplete combustion.

CO Hot Spots
An area, usually an intersection or congested segment of a highway, that exceeds the federal or state carbon monoxide standard.

Conformity
The requirement under the federal Clean Air Act that any approved transportation project, plan or program must conform to the State Implementation Plan (SIP).

EMFAC7F
A model developed by the Air Resources Board to model vehicle emission rates.

Emission Rate
The rate at which pollutants are emitted into the atmosphere by one source such as the exhaust system of a vehicle, or a combination of sources.

LOS
Level of Service: The qualitative term used to describe whether a roadway segment or intersection has sufficient capacity to serve expected traffic volumes. LOS is expressed qualitatively with letters "A" through "F" from best to worst. LOS A to E generally represents traffic volumes at less than roadway capacity, while LOS F represents over-capacity to forced flow conditions.

Microscale: Small scale, involving distances of up to less than one kilometer. For highway projects, microscale usually refers to the area within 300 meters of the roadway and one to five kilometers up-wind.

NOx

Nitrogen Oxides: Nitrogen dioxide, a toxic reddish-brown gas, and nitric oxide, a colorless gas, are the primary ingredients in nitrogen oxides. NOx are produced by the combustion of fuel, such as the burning of gasoline in automobile engines.

PM_{10}
PM_{10} is particulate matter, 10 microns or less in diameter, which can enter the lungs. The major components of PM_{10} are dust particles, nitrates, and sulfates. PM_{10} is directly emitted into the atmosphere as a by-product of fuel combustion, abrasion, or through wind erosion and unpaved roads.

ROG
Reactive Organic Gases: a species of organic gas that undergoes photochemical reactions.

RTIP
Regional Transportation Improvement Program: The RTIP is a five-year program that identifies projects based on funding availability from the STIP fund estimate. The RTIP is submitted to Caltrans for approval and is incorporated into the STIP.

Sensitive Receptor
People, or facilities that generally house people (schools hospitals, residences, etc.), that may experience adverse effects from unhealthful concentrations or air pollutants.

SIP
State Implementation Plan: The strategy used by a state to control air pollution so that the National Ambient Air Quality Standards will be met. The Environmental Protection Agency (federal) regulations require that each state prepare such a plan.

STIP
State Transportation Improvement Program: A five-year capital improvement program of transportation projects, on and off the State Highway System, funded with revenues from the State Highway Account as well as other funding sources.

Trip
A single or one-direction vehicle movement with either the origin or the destination (exiting or entering) inside a study area.

Community Character

Census Geography (Census Tract/Census Tract Block Group/Census Block)
The Census Bureau reports data for a wide variety of geographic types, ranging from the entire United States down to a Census Block. Counties are subdivided into Census Tracts, which are further subdivided into Census Tract Block Groups and then into Census Blocks, the smallest geographic unit for which the Census Bureau tabulates 100 percent data.

Noise (Acoustical) Terminology

AMBIENT NOISE LEVEL: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

CNEL: Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

DECIBEL, dB: A unit for 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, which is 20 micropascals (20 micronewtons per square meter).

DNL/L_{dn}: Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

L_{eq}: Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1-, 8- and 24-hour sample periods.

NOTE: The CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the average noise exposure for a shorter time period, typically one hour.

L_{max}: The maximum noise level recorded during a noise event.

L_n: The sound level exceeded "n" percent of the time during a sample interval (L_{90}, L_{50}, L_{10}, etc.). For example, L_{10} equals the level exceeded 10 percent of the time.

NOISE EXPOSURE CONTOURS: Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently used to describe community exposure to noise.

Acoustical Terminology *(Continued)*

NOISE LEVEL REDUCTION (NLR): The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of "noise level reduction" combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

SEL or SENEL: Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

SOUND LEVEL: 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 response of the human ear and gives good correlation with subjective reactions to noise.

SOUND TRANSMISSION CLASS (STC): The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

Transportation

Cross section: is the term used to describe the number and width of travel lanes in both directions, the shoulder area on either side of the road, and in urbanized areas it can also include curb, gutter and sidewalk and raised median.

LOS: Level of service is the qualitative term used to describe whether a roadway segment or intersection has sufficient capacity to serve expected traffic volumes. LOS is expressed qualitatively with letters "A" through "F" from best to worst. LOS A to E generally represent traffic volumes at less than roadway capacity, while LOS F represents over-capacity to forced flow conditions.

ADT: Average Daily Traffic is the volume of traffic traveling in both directions on a road segment averaged over 24 hours

Acronyms Used In This Eir

Caltrans	Caltrans
FHWA	Federal Highway Administration

APPENDIX F

Minimization Measures/Mitigation Summary
CEQA Mitigation Monitoring Program

APPENDIX F
SUMMARY OF AVOIDANCE, MINIMIZATION AND MITIGATION MEASURES

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	LAND USE
	PARKS AND RECREATIONAL FACILITIES/ COMMUNITY COHESION
ALTERNATIVE 1	Project proponents will be responsible for replacing approximately 34,990 square feet of parkland acquired from Rose Ann Vuich Park and 1,380 square feet acquired from the landscaped open space area[1] at Mariposa and J Street. The actual replacement requirement should be determined upon final project design since the amount of right-of-way needed may change. 1. Proponents shall incorporate into Rose Ann Vuich Park the remainder of two adjacent parcels along El Monte Way to the east of the park, which would be acquired for road-widening purposes; 2. Proponents shall prepare a landscape plan Subject to the review and approval of the City of Dinuba Parks and Recreation Director, that at a minimum, provides new landscaping in the new park addition area and replaces the landscape along the entire El Monte Way park frontage with similar plantings as those that have been removed. Size of replacement trees shall be twenty-four-inch-box size for trees six inches or larger in diameter at breast height (diameter measured 4.5 feet above ground), and 15-gallon size container for trees smaller than six inches diameter at breast height. 3. A remainder parcel and abandoned portion of Mariposa Avenue, at Mariposa Avenue and El Monte Way, shall be used to construct a park with appropriate landscaping and amenities (e.g., picnic areas and/or limited play equipment) subject to the approval of the City of Dinuba Parks and Recreation Director. The open space parcel at Merced and El Monte Way shall be re-landscaped to restore shade trees, sidewalk and lawn. 4. The balance of the parkland shall be compensated for by purchase of additional parkland at other park locations within the City of Dinuba or improvement of park facilities, either at Rose Ann Vuich Park or other parks within the city. The amount of compensation shall be determined during the appraisal process. 5. Provide landscaping, including shade trees, on the small reminder parcel at Merced Avenue.
ALTERNATIVE 2	Project proponents will be responsible for replacing approximately 3,799 square feet of parkland acquired from Rose Ann Vuich Park and 3,920 square feet acquired from the landscaped open space area located at Mariposa and J Street. The actual replacement requirement should be determined upon final project design since the amount of right-of-way needed may change. 1. Proponents shall prepare a landscape plan Subject to the review and approval of the City of Dinuba Parks and Recreation Director that at a minimum, replaces the landscape along the entire El Monte Way park frontage with similar plantings as those that have been removed. Size of replacement trees shall be twenty-four inch box size for trees six inches or larger in diameter, measured 4.5 feet above ground, and 15-gallon-size container for trees smaller than six inches diameter. 2. The remainder parcel and abandoned portion of Mariposa Avenue, at Mariposa Avenue and El Monte Way, shall be used to construct a park with appropriate landscaping and amenities (e.g., picnic areas and/or limited play equipment) subject to review and approval by the City of Dinuba Parks and Recreation Director. The remnant parcels at I Street and on the east side of the Merced Avenue cul-de-sac, landscaped, provide small open space areas with shade trees and other landscaping as appropriate.

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	FARMLANDS
ALTERNATIVE 1 AND ALTERNATIVE 2	Remnant properties shall be sold back to adjacent farm owners. Access to adjacent farm fields shall be maintained for farm equipment. The project shall be designed and constructed to minimize impacts to farm operations.
	RELOCATION EFFECTS/LOW-INCOME POPULATIONS/BUSINESSES AND INSTITUTIONS
ALTERNATIVE 1 AND ALTERNATIVE 2	<u>Residential Displacement</u> 1. Tulare County and Fresno County as project proponent(s) shall provide standard relocation assistance to both tenants and owner occupants in compliance with Caltrans Relocation Assistance Program and the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Replacement housing must be decent, safe, and sanitary, which means it must meet all of the minimum requirements established by federal regulations and conforms to applicable housing and occupancy codes. (Refer to Appendix D Summary of Relocation Benefits) 2. According to the Uniform Relocation Assistance Program, owner occupants and tenants may be eligible for rental assistance payments of up to $5,250 if rent for comparable housing is higher than the tenant's existing rent. Owner occupants may be eligible for supplemental payments of up to $22,500 in addition to fair market value of their property if comparable housing is not available at a similar cost. If comparable housing is not available, or it is not available within the maximum limits described above, it must be provided before the resident is required to move. The project proponent (s) may : a) Purchase existing comparable residential property and make it available; or b) Relocated and rehabilitate dwellings purchased within the project area and make them available to the displaced residents; or c) Purchase, rehabilitate or construct additions to existing dwellings to make them comparable to a particular displacement property; or d) Compensate for property acquisition in accordance with fair market values based on appraisals. <u>Business Displacement</u> 3. All real property transactions shall comply with the property acquisition and relocation standards of the State of California, the Caltrans Relocation Assistance Program and the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. 4. Property owners shall be compensated in accordance with fair market values based on appraisals. Business owners shall be compensated based on an assessment of the value of the business and any loss of goodwill. 5. All efforts shall be made to identify relocation opportunities for affected businesses and institutions that would reduce the loss of goodwill and historic patronage. Wherever feasible, assistance shall be made available in identifying suitable relocation sites within the service area of existing businesses and institutions.
	VISUAL RESOURCES
ALTERNATIVE 1	

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
AND ALTERNATIVE 2	1. Expansion of the road right-of-way will remove existing landscaping located along Avenue 416. The project proponent shall compensate private property owners for property damages resulting from the removal of landscaping as a result of the project. This would give property owners the option to re-install landscaping if desired. 2. The Habitat Restoration Plan required for the Kings River Bridge area will reduce the adverse visual effects due to disturbance of vegetation at the bridge. Required contents of the plan are described in the Biological Resources section of the Environmental Impact Report. 3. A landscape plan shall be prepared as part of the project design in the City of Dinuba (refer to Avoidance, Minimization and/or Mitigation Measures for Parks and Recreation Facilities). 4. The landscape plan shall be consistent with the following: a) The City of Dinuba General Plan Open Space, Conservation and Recreation Element requires that any trees removed within the City of Dinuba be replaced with tree species specified on the City's Street Tree Master Plan. b) Landscaping added to areas considered gateways into the City of Dinuba shall help to enhance these gateways. One such gateway is the El Monte Way/Alta Avenue intersection, which is identified in the City of Dinuba General Plan Urban Boundary Element. The Community Development Element provides guidelines for these gateways which shall be followed. i) Gateway treatments should include some or all of the following elements: structures, special landscaping and signs. The City of Dinuba and the County of Tulare shall cooperate in designing Gateway treatments. ii) Gateways to the downtown area shall be well marked. c) The Community Design Element of the City of Dinuba General Plan gives guidelines to landscaping along the city's streets. The following guidelines shall be followed: i) Tree wells should be located and designed to maintain views for traffic and pedestrian safety. ii) All signs shall be compatible with the overall streetscape design including the redesign/removal of signs that are disruptive elements. iii) No new outdoor advertising shall be allowed on Alta Avenue or El Monte Way within the limits of the urban area boundary. iv) Establish coordinated and distinctive signage, accent plantings and paving materials for entries into the city at Alta Avenue and El Monte Way. 5. Within the City of Dinuba the landscape plan shall provide for landscaping in medians where median widths can accommodate landscaping and on remnant parcels that remain in public ownership.
	CULTURAL RESOURCES
	ARCHITECTURAL AND HISTORIC RESOURCES
ALTERNATIVE 1	<u>Levis House</u> The Levis House is eligible for its architectural merit. Under Alternatives 1 and 2 the road would be widened to the house, resulting in its acquisition and removal. 1. Prior to demolishing the house, Caltrans shall ensure, in consultation with FHWA and the State Historic Preservation Officer, that the Tulare County Resource Management Agency provide documentation of the structure for the historical record, using a modified Historic American Building Survey/Historic American Engineering Record format. At minimum, the documentation shall include clear photographs using 35 mm black and white film printed in 4-inch by 6-inch format of all sides of the structure, details of unique or representative construction features, interior detailing, and written account of any history of the structure. Overviews of the property capturing its setting and vegetation shall also be provided. Upon approval by the State Historic Preservation Officer, the documentation shall be filed with the State Office of Historic Preservation, Southern

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	San Joaquin Valley Information Center of the California Historical Resources Information System (CHRIS), the Fresno County Library's California History and Genealogy Room in Fresno, the California State University's Henry Madden Library, Special Collections in Fresno, the Annie Mitchell Room of the Tulare County Public Library in Visalia, the California Room of the California State Library in Sacramento, and California Department of Transportation, District 06, Fresno. <u>Nichols House</u> The setting of the Nichols house has already been compromised. Widening of the road would retain the horseshoe shape of the driveway, although a portion of the lawn would be removed. 1. If existing vegetation that contributes to the setting of the property, other than the lawn, is removed then new vegetation should be planted within the new parcel boundary. This vegetation should be the same species as that removed and planted in a one to one ratio. <u>Nelson Estate</u> 1. Removal of the modern row of evergreen trees is not a significant impact. If project plans change and historical vegetation within the fenced area surrounding the house is compromised, then Mitigation Measure 1, described above for the Nichols House should be implemented.
ALTERNATIVE 2	Under Alternative 2 impacts to the Levis House, Nichols House and Nelson Estate are the same as that described for Alternative 1 and mitigation measures described for Alternative 1 apply. In addition, Alternative 2 would result in a loss of the former Maya Theater, a National Register of Historic Places property eligible under Criteria A and C. <u>Maya Theater</u> 1. To mitigate for the loss of local Hispanic history (Criterion A) associated with the former Maya Theater, the project proponent should prepare a three-fold or similar pamphlet, in consultation with the State Historic Preservation Officer, Caltrans and FHWA, describing the history of the Maya Theater, illustrated with contemporary and historic photographs. This pamphlet should focus on the importance of the theater to the Hispanic community and should be produced in both English and Spanish. A minimum of 2,500 copies of the pamphlet should be produced for distribution at City of Dinuba public offices, local libraries, Hispanic organizations, the Alta Historical Society, Annie Mitchell Room of the Tulare County Public Library in Visalia, and the local Chamber of Commerce. The pamphlet shall also be provided in electronic format at appropriate World Wide Web addresses associated with the City of Dinuba and its historical resources. One copy of the pamphlet in each language shall be filed with the State Historic Preservation Officer, the Southern San Joaquin Valley Information Center, the California History Section of the State Library, the Bancroft Library at University of California, Berkeley, Special Collections at California State University Fresno, and Caltrans. 2. Prior to demolishing the theater, Caltrans shall ensure, in consultation with FHWA and the State Historic Preservation Officer, that the project proponent provide documentation of the structure for the historical record, using a modified Historic American Building Survey/Historic American Engineering Record format. At minimum, the documentation shall include clear photographs using 35 mm black and white film printed in 4-inch by 6-inch format of all sides of the structure, details of unique or representative construction features (for example, the marquee and ticket booth), interior detailing and seating arrangements, and a written account of the history of the structure. Upon approval by the State Historic Preservation Officer, the documentation shall be filed with the State Office of Historic Preservation, Southern San Joaquin Valley Information Center of the California Historical Resources Information System (CHRIS), the California State University's Henry Madden Library, Special Collections in Fresno, the Alta Historical Society, the local library in the City of Dinuba, the Annie Mitchell Room of the Tulare County Public Library in Visalia, the

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	California History section in the Tulare County Library, Visalia, the California Room of the California State Library in Sacramento, and California Department of Transportation, District 06, Fresno.
ALTERNATIVE 1 AND ALTERNATVE 2	<u>McNab Residence</u> 1. Both alternatives would result in the road being widened to the front of the McNab Residence, resulting in a zero setback and complete take of the McNab Residence, a property important for its architecture. Project proponent shall complete mitigation measures 1, 2, and 3, described above for the Levis House. Because the McNab Residence is important only under the California Environmental Quality Act, consultation with FHWA is not required prior to removal. <u>Whittington Residence</u> 1. Mitigation measure 1, described above for the Levis House, shall be applied to this property. In addition the following measure is provided to mitigate for the loss of Dr. Whittington affiliated property. 2. To mitigate for the loss of Dr. Whittington's history (Criterion 2) associated with the property, the project proponent should prepare a pamphlet, in consultation with the State Historic Preservation Officer and Caltrans, describing the role Dr. Whittington played in the development of medicine in Dinuba, illustrated with contemporary and historic photographs of the man and his house. A minimum of 500 copies of the pamphlet should be produced for distribution at City of Dinuba public offices, local libraries, the Alta Historical Society, Tulare Public Library History Section in Visalia, and the local Chamber of Commerce. The pamphlet shall also be provided in electronic format at appropriate World Wide Web addresses associated with the City of Dinuba and its historical resources. One copy of the pamphlet in shall be filed with the State Historic Preservation Officer, the Southern San Joaquin Valley Information Center, the California Section of the State Library, the Bancroft Library at University of California, Berkeley, Special Collections at California State University Fresno, and Caltrans. <u>Bolinger House</u> 1. The project proponent shall relocate the iron fence along the new property boundaries, in consultation with the State Historic Preservation Officer and Caltrans. If the existing fence cannot be reused, then the removed section of the iron fence shall be replaced with identical fencing to retain the setting of the landscaping. 2. Vegetation removed along the fence within the exiting property shall be replanted in association with the property fence along the new parcel boundary. If this is not possible, then the trees and shrubs that are removed from the proposed right-of-way will be replaced in kind using a four-to-one replacement ratio.
	ARCHAEOLOGICAL RESOURCES
ALTERNATIVE 1 AND ALTERNATIVE 2	1. If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. 2. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission who will then notify the Most Likely Descendent. At this time, the person who discovered the remains will contact Tulare County so that they may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code

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	5097.98 are to be followed as applicable. 3. A qualified archaeologist will be present during preconstruction geophysical testing of the Kings River riverbank to determine if buried cultural deposits lie within the area of direct impact. If testing demonstrates there is a likelihood of buried archeological deposits, archaeological and Native American monitoring will be conducted during construction of the bridge abutments and all other ground disturbing work along the riverbanks.
	WATER QUALITY AND STORM WATER RUNOFF
ALTERNATIVE 1 AND ALTERNATIVE 2	Potential in-stream impacts to the Kings River water quality can be minimized by adherence to State Standard Specifications for avoidance of water pollution (Section 7-1.01G) and by implementing Best Management Practices. These measures include detailed recommendations for keeping heavy machinery out of the water, limiting the amount of material (excavated or construction materials) that enter the stream, and maintaining flows at all times. The State Standard Specifications require the contractor to prepare a plan to control water pollution during construction. The following measures are recommended to minimize water quality impacts: a. **Protect River from Toxic Discharge.** The contractor shall be required to follow pertinent paragraphs of the California Department of Transportation (Caltrans) manual, California Standard Specifications, Section, 7 – 1.01G which begins, "The contractor shall exercise every reasonable precaution to protect streams . . . from pollution with fuels, oils, bitumen, calcium chloride, and other harmful materials . . ." Construction byproducts and pollutants such as oil, cement, and washwater shall be prevented from discharging into the stream and shall be collected and removed from the site. No equipment may be parked within the immediate watershed of the stream channel. Equipment may be refueled and serviced at an "equipment laydown" area out of the immediate watershed of the Kings River or the canals that drain to a river. b. **Control Erosion.** Silt fencing (or filter fabric) shall be used to catch any short-term erosion or sedimentation that may inadvertently occur. Measures may include but not be limited to the use of sediment basins, hay bales and/or silt fences. This requirement corresponds to California Standard Specifications, Section 7-1.01G, "Where working areas encroach on live streams, barriers to adequately protect the flow of muddy water into streams shall be constructed and maintained between working areas and streams . . ." Ditches should be installed at the top of the cut/toe of fill areas and the bare slopes should be revegetated with non-invasive, native vegetation found within the project study area. c. **Build Cofferdams.** Using non-erodable, clean materials, cofferdams or temporary berms shall be built to keep construction activities out of the live stream. Water from these construction envelopes shall be transported off-site or pumped to sediment or percolation basins. The dams or berms shall not impede the movement of fish at any time. Before the first heavy rains, sediment basins shall be cleaned of accumulated debris and the debris transported outside the area for disposal. d. **Avoid Direct Discharge of Roadway Runoff.** To minimize water quality impacts to the Kings River after the project is complete, no direct discharge of runoff from newly constructed roadways will be allowed to flow to the Kings River or its tributaries. If discharge to the Kings River cannot be avoided, then the runoff should be directed through grassy swales or storm water interceptors constructed at discharge points. These interceptors will remove oil, sediment, and other pollutants that might otherwise flow to the river.

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	HAZARDOUS MATERIALS
ALTERNATIVE 1 AND ALTERNATIVE 2	Avoidance and minimization measures are required for this project. The following mitigation measures shall be followed: 1. Soil will be tested at known and potential hazardous material sites where any right-of-way, permanent or temporary, will be acquired. This especially pertains to Dinuba Exxon and Gas-N-Save where active status and the amount of acquisition proposed make the site directly affected. Groundwater levels need to be established in areas of known hazardous material sites that require right-of-way acquisition. When groundwater levels are confirmed, groundwater testing may be necessary based on depth of construction excavation. 2. Any structures to be demolished will be tested for asbestos containing materials. If asbestos containing materials are found, they must be properly removed prior to demolition. The procedures for inspection, notification, and abatement must be in compliance with San Joaquin Valley Air Pollution Control Board Asbestos Requirements for Demolitions and Renovations and are as follows: a. Inspection (i) An asbestos inspection must be performed prior to any regulated demolition. (ii) California-Occupational Safety and Health Act regulations in California Labor Code requires asbestos consulting services be done by or under the direction of a California-Occupational Safety and Health Act certified consultant. (iii) The San Joaquin Valley Air Pollution Control Board requires inspection reports to include: • A schematic showing the location of all tested materials • The following data for all asbestos-containing material: • The amount and description of each material • Percent asbestos content • Whether or the not the material is friable • A report of the asbestos inspection must be received with each demolition notification. b. Notification i) An asbestos notification must be submitted to San Joaquin Valley Air Pollution Control Board at least 10 working days prior to any regulated demolition. c. Asbestos Abatement i) Asbestos containing materials discovered during the inspection process must be removed properly prior to demolition. Employees engaged in asbestos abatement work must be properly trained and equipped for this work in accordance to California-Occupational Safety and Health Act regulations. The California-Occupational Safety and Health Act and National Emission Standards for Hazardous Air Pollution regulations have specific work practice requirements that must be followed during the removal of these materials, waste handling, transportation, and disposal.

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	3. Any structure to be demolished will be tested for lead-based paints. If these materials are found within the structure, transportation and disposal will be determined based on lead concentration as mandated in California's Health and Safety Code 25157.8. b) Health and Safety Code 25157.8 states that all types of waste, including demolition debris, with a total lead concentration greater than 350 parts per million disposed of in California must be disposed of at a Class 1 hazardous waste landfill or at other landfills which have specific permits to accept these wastes. The waste is not considered hazardous in California unless it measures 1,000 parts per million total threshold limit concentration and 5 parts per million soluble threshold limit concentration. Therefore, waste which does not meet the hazardous threshold but does measure 350 parts per million for total lead concentration would not require a hazardous waste manifest or registered hazardous waste transporter when transporting for disposal to a Class 1 landfill. 4. Pavement striping subject to construction disturbance or removal will be tested for lead-based paints. If these materials are found within the pavement, transportation and disposal will be determined based on lead concentration as mandated in California's Health and Safety Code 25157.8. See discussion above on California's Health and Safety Code. 5. All unauthorized dumping shall be cleaned in conjunction with construction of the project. 6. Any right-of-way acquisition of current (in Fresno and Tulare counties) or past, undeveloped (in the City of Dinuba) agricultural land must be investigated through the county's Agricultural Commissioner's office for types of pesticides/herbicides used and method of application prior to construction. The need for soil testing for residuals will be based on those investigations (see discussion under Materials of Concern-Pesticides/Herbicides). If all three of the following conditions are present, then soil testing shall take place: 1) historic use indicates probable presence in the right-of-way; 2) the pesticide/herbicide used has a long life; 3) the pesticide/herbicide used has a low water solubility. In addition, soil testing must be completed on properties that have either agricultural-related structures near the roadway or are near to or include drainage channels and canals. If soils are found to be contaminated following testing, then the provisions from the certified soil tester and the Department of Toxic Substance Control guidelines on pesticides/herbicides concentrations will be followed and carried out when handling the contaminated soils.
	AIR QUALITY
	CONSTRUCTION EFFECTS
ALTERNATIVE 1 AND ALTERNATIVE 2	1. All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, vegetative ground cover or chemical stabilizer/suppressant that is certified or "pre-certified " by the California Environmental Protection Agency. 2. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. 3. All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. 4. When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained. 5. All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.) 6. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. 7. Limit traffic speeds on unpaved roads to 15 miles per hour (mph); and 8. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
	BIOLOGICAL RESOURCES
	WILLOW RIPARIAN WOODLAND
	No impacts are anticipated during construction of this project. If, during construction, willow riparian forest habitat is impacted, keeping the road access and vehicle turnaround areas as small as possible within this sensitive habitat type can minimize the effects. A Habitat Restoration Plan shall be prepared and implemented to restore or create riparian habitat at a ratio greater than 1:1. The final mitigation ratio shall be established after consultation with the California Department of Fish and Game, United States Fish and Wildlife Service and United States Army Corps of Engineers. To partially achieve the goal of riparian mitigation/compensation, the disturbed riparian habitat on the site will need to be restored after construction. In addition, riparian mitigation credits shall be purchased in a regional mitigation bank because any ratios greater than 1:1 cannot be achieved in the limited area at the bridge site. The basic elements of this Habitat Restoration Plan and the mitigation bank purchase are discussed in more detail below.
	WETLANDS AND OTHER WATERS OF THE UNITED STATES
ALTERNATIVE 1 AND ALTERNATIVE 2	1. Minimize Impacts to Riparian Habitat and waters of the United States. a. To compensate for temporary and permanent impacts to wetlands, a wetland restoration/compensation plan shall be implemented that will restore or create habitat at a ratio greater than 1:1 for the wetlands that are lost. The final mitigation ratio shall be established after consultation with the California Department of Fish and Game, United States Fish and Wildlife Service, and United States Army Corps of Engineers. To achieve this goal of wetland mitigation/compensation, a Habitat Restoration Plan should be prepared and implemented to restore the disturbed riparian habitat on the site after construction. In addition, because ratios greater than 1:1 cannot be achieved in the limited area at the bridge site, wetland credits shall be purchased in a regional mitigation bank. The main components of this Habitat Restoration Plan and the mitigation bank purchase are summarized below b. Establish Environmentally Sensitive Areas to limit work areas near Kings River willow riparian habitat and stream channel to the minimum possible area. The Environmentally Sensitive Areas shall preclude access to the stream channel and riparian habitat along the Kings River except as necessary for construction access. The boundaries of the Environmentally Sensitive Areas shall be marked in the field with the assistance of a biologist or environmental monitor. Boundaries shall be shown on plans and specifications, and shall also be delineated on the ground prior to construction with temporary orange safety fencing. Fencing or other barriers shall remain in place until all construction and restoration work involving heavy equipment is complete. Pre-construction training shall be conducted to inform work crews about required measures for protection of Environmentally Sensitive Areas. 2. Prepare and Implement Riparian and Wetland Restoration Plan a. To restore disturbed habitat at the site of the newly constructed Kings River

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	Bridge, a Habitat Restoration Plan be prepared by a qualified restoration ecologist and shall adopt an adaptive management approach to allow improvements to the plan as more information is available. The riparian/wetland restoration plan shall be reviewed by Tulare County and shall conform to United States Army Corps of Engineers December 30, 2004 guidelines for Mitigation and Monitoring Plans, and should include at least the following elements: • Project Description • Goal of Mitigation • Final Success Criteria • Proposed Mitigation Site • Implementation Plan • Maintenance During Establishment Period • Monitoring Plan b. The restoration plan shall be developed in consultation with the California Department of Fish and Game and the United States Army Corps of Engineers as this plan will be a necessary element of the California Department of Fish and Game Streambed Alteration Agreement and the United States Army Corps of Engineers Section 404 permit. 3. Purchase Credits in Regional Mitigation Bank for Riparian/Wetland Compensation The wetland/riparian restoration mitigation ratio will be determined in consultation with the California Department of Fish and Game and the United States Army Corps of Engineers. In the past, a minimum ratio of 2:1 has been required; however, a ratio of 3:1 is common. Wetland/riparian restoration on site cannot achieve a 2:1 mitigation ratio (i.e., replacing every acre of wetland impacted with two acres of restored wetland) because of insufficient space in the project area right-of-way along the Kings River. To fully offset the loss of riparian and wetland habitat to a 2:1 ratio or higher, credits shall be purchased in a regional riparian/wetland mitigation bank approved by The California Department of Fish and Game and the United States Army Corps of Engineers. The mitigation ratio and amount of credit needed shall be established after consultation with California Department of Fish and Game and the United States Army Corps of Engineers. The amount of credits to be purchased shall be the difference between the total impact and the amount that is slated for on-site revegetation in the restoration plan. Prior to the project proponent's participation on the mitigation bank, the bank must meet the approval of California Department of Fish and Game and the United States Army Corps of Engineers. 4. Implement Water Quality Protection Measures Potential instream impacts to the Kings River aquatic resources and fisheries can be minimized by adherence to State Standard Specifications for avoidance of water pollution (Section 7-1.01G) and by implementing Best Management Practices. The following measures are recommended to minimize water quality impacts, and are discussed in more detail in the Draft Mitigation Plan (PAR Environmental Services, Inc. 2007c): a. Protect River from Toxic Discharge. The contractor shall be required to follow pertinent paragraphs of the Caltrans manual, California Standard Specifications, Section, 7 – 1.01G). b. Control Erosion. Silt fencing (or filter fabric) shall be used to catch any short-term erosion or sedimentation that may inadvertently occur. Measures may include use of sediment basins, hay bales and/or silt fences. c. Build Cofferdams. Using non-erodable, clean materials, cofferdams or temporary berms shall be built to keep construction activities out of the live

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	stream. d. Avoid Direct Discharge of Roadway Runoff. To minimize water quality impacts to the Kings River after the project is complete, no direct discharge of runoff from newly constructed roadways shall be allowed to flow to the Kings River or its tributaries.
	SPECIAL-STATUS PLANT SPECIES
ALTERNATIVE 1 AND ALTERNATIVE 2	In the spring, prior to construction, a survey of the project area shall be conducted for Sanford's arrowhead. If populations of Sanford's arrowhead are observed in canals or ditches that will be affected, this plant shall be mitigated (at a ratio agreed upon by the United States Fish and Wildlife Service and California Department of Fish and Game) in the newly created wetlands along the Kings River. The backwater pools on the west bank of the river would provide suitable habitat for this species, and would be an appropriate component of a wetland restoration palette. In addition, the local chapter of the California Native Plant Society shall be contacted to offer the option of salvaging the Sanford's arrowhead that will be affected by the project.
	WILDLIFE
ALTERNATIVE 1 AND ALTERNATIVE 2	**Bats** To avoid significant affects to the roosting bats at the Kings River Bridge, the following measures should be implemented for day and night roosts: *Day Roosts:* a. A survey by a qualified bat biologist shall be conducted before exclusion and/or eviction is performed, in order to verify that bats are not present in the expansion joint(s). b. Bats shall be excluded from directly affected work areas by a qualified biologist prior to April 15 of the construction year. Exclusion shall be done selectively and only to the extent necessary to prevent acute morbidity or mortality to the colony. c. If bats are found to be present in any expansion joints, bats shall be evicted from the crevice under supervision of the bat biologist. Eviction is accomplished by packing portions of the expansion joint, then installing one-way exits at locations determined by the bat biologist. One-way exits shall remain in place for at least seven days, then the expansion joint will be inspected to ensure bats have vacated the joint. The one-way exists shall then be removed, and the remaining openings blocked with exclusion materials. d. Exclusion is accomplished by packing the expansion joints with foam pipe insulation material, one-quarter-inch hardware cloth, or expandable foam. e. If a survey by a qualified bat biologist reveals no bats in any expansion joint, that joint must be sealed within 24 hours, as described above. f. If swallow exclusion netting is installed, it shall not be used as bat exclusion material over day roost crevices; it may entangle bats attempting to enter the roost crevice, and could provide a foothold directly beneath the crevice, which confused bats might continue to use for extended periods. g. All exclusion materials shall be removed after completion of construction activities to allow bats to reoccupy the bridge structure. *Night Roosts:* a. Work shall not occur within 100 feet of the bridge between sunset and sunrise. b. Airspace access to and from the bridge shall not be severely restricted. c. Clearing and grubbing shall be minimized where possible. d. Combustion equipment such as generators, pumps, and vehicles shall not be parked or operated under or adjacent to the structure. e. Personnel shall not be present under the colony, especially during the evening exodus.

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	f. Swallow exclusion netting shall be installed as described above, and so that it does not cover or interfere with any occupied expansion joint. g. Netting must be removed after completion of construction activities to allow bats to reoccupy the bridge structure.
ALTERNATIVE 1 AND ALTERNATIVE 2	*Compensation for Loss of Bat Habitat* The new bridge or an alternate structure needs to provide suitable habitat to accommodate the existing bat colony. An off-structure mitigation roost, such as free-standing bat houses, is unlikely to adequately mitigate for the loss of the bridge roost habitat; off-structure mitigations for bats on bridges have been marginally or not at all effective (Wildlife Research Associates, 2004). When the final bridge design is developed, a final bat mitigation plan shall be prepared to assess current status of the bat populations on the bridge and to provide detailed specifications on measures to protect bats during bridge demolition and removal. The final bat mitigation plan shall also provide details on how to replace the breeding and roosting habitat offered by the existing bridge. This bat mitigation plan shall adopt an adaptive management approach to allow improvements to the plan as more information is available. The mitigation recommendations contained in Appendix H of this Environmental Impact Report/Environmental Assessment (letter report dated 12/14/04 by Greg Tartarian) shall be used as guidance in developing the mitigation plan. This bat mitigation plan shall be reviewed and approved by California Department of Fish and Game, Caltrans Tulare County prior to any construction activities on the existing bridge. Many of the elements that need to be included in this mitigation have already been developed and are described in reports by Wildlife Research Associates (2001, 2003, 2004). The overall goal is to replace the existing bridge expansion joint with some sort of suitable crevice roost habitat. Lateral interstices between bulb-T girders, such as where girders rest on pier platforms, would create cavities similar to those found in the existing bridge. If the new bridge is a box girder design, it shall provide access openings into box cavities, although such cavities will not provide habitat for pallid bats and other crevice-roosting bats. Cavities shall limit access to humans and predators. Entrances into the cavities shall be at least four to six inches by 14 feet with a clear flight path in and out. Modifications to access doors and coverings, or utility access plates can provide suitable openings. One entrance per cell shall be provided to permit future partial exclusion if needed. Diaphragms between sections shall be modified within engineering limits to allow passage by bats between cells. The passage shall be consistent with passage used for utilities. **Western Pond Turtle** To avoid impacts to western pond turtles, a qualified biologist for western pond turtles shall conduct a preconstruction survey of the Kings River and the canals within the project area. Surveys shall be conducted no more than 24 hours prior to onset of construction. If a turtle is located within the construction area, a qualified biologist shall capture the turtle and relocate it to appropriate habitat a safe distance from the construction site.
	MIGRATORY BIRDS AND SPECIAL-STATUS BIRD SPECIES
ALTERNATIVE 1 AND ALTERNATIVE 2	**Burrowing Owls** Avoid Disturbing Active Burrowing Owl Nests and Winter Burrows a. To avoid impacts to nesting burrowing owls or winter burrows, a qualified wildlife biologist shall conduct preconstruction surveys no more than 14 days prior to construction. Preconstruction surveys shall consist of checking all potential habitat within 250 feet of construction activities. Preferred survey time is from two hours before sunset to one hour after, or from one hour to two hours after sunrise. Survey methodology shall be consistent with accepted burrowing owl survey protocol (California Burrowing Owl Consortium 1993)

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	b. If burrowing owl nests are detected within the project impact or disturbance area, California Department of Fish and Game shall be contacted immediately to develop and implement a mitigation plan to protect owls and their nest sites. Such a mitigation plan is likely to include establishment of a 250-foot buffer zone around the active burrow. No construction activities shall be permitted within the specified buffer zone until after the breeding season, between February 1 through August 31, or until it is determined that young have fledged. If construction will occur during the non-breeding season (September 1 through January 31) preconstruction surveys shall consist of visually checking all potential habitat in areas in which ground-disturbing activities will occur. **Cooper's Hawks, White-Tailed Kites, and Other Migratory Birds** If construction or tree removal will occur between February 15–September 1, a qualified biologist shall conduct pre-construction surveys each year in all potential nest sites for nesting birds. Surveys shall be conducted no more than 14 days prior to the initiation of construction activities, and the surveyor shall inspect all trees in the impact footprint and within a 492-feet radius for raptor and other nests. If the surveyor verifies that a nest is empty and young are no longer in the vicinity of the nest tree, tree removal may occur immediately. If the surveyor deems that an active bird nest is close enough to the construction area to be disturbed, he or she shall (in consultation with California Department of Fish and Game) determine the extent of the construction-free buffer zone to be established around the nest. **Swallows** To avoid impacts to swallows nesting on the Kings River Bridge and on canal culverts in the project area, contractors conducting work between February 15 and September 1 shall take such measures as necessary to prevent nesting on portions of the structures that will cause a conflict between performing necessary work and nesting swallows. These measures are described in detail in the Draft Mitigation Plan (PAR Environmental Services, Inc. 2007c) prepared for this project.
	THREATENED AND ENDANGERED SPECIES
ALTERNATIVE 1 AND ALTERNATIVE 2	**San Joaquin Kit Fox** Avoid Direct Impacts to San Joaquin kit fox with implementation of San Joaquin kit fox contract special provisions (Appendix H) and with following measures. a. No more than 30 days prior to construction, a qualified biologist (as defined by the United States Fish and Wildlife Service 1999) shall conduct systematic searches for kit fox dens in all suitable habitat in the proposed work area and in a 200-foot wide buffer around the area. If a den is found, biologists will measure the size, evaluate the shape of the den entrances, and note tracks, scat, prey remains, or recent excavations at the site. Dens will be classified in one of four den status categories, consistent with those defined by the United States Fish and Wildlife Service: • **Potential Den:** any burrow that has an entrance typically five to eight inches in diameter for its entire visible length; a collapsed den will not be considered a potential den site. • **Known Den:** any den or artificial structure that is being used or has been used at any time in the past by a San Joaquin kit fox for any activity other than whelping and/or rearing pups. Fresh excavation alone will not be considered adequate sign to classify a den as "known."

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	• **Natal or Pupping Den**: any den or artificial structure that is being used or has been used at any time in the past by a kit fox to whelp and/or rear pups. • **Atypical Den:** any man-made structure that could become occupied by a San Joaquin kit fox, including pipes, culverts, and diggings beneath slab and buildings. b. All dens shall be assigned a number and mapped. Den sites shall be flagged in the field with pin flags marked with the den number. Potential, known, and natal or pupping dens shall be distinguished from each other in the field by the pin flag color. Information on the size and number of openings, signs of activity, surrounding terrain and habitat type, and distance to concentrations of small mammal prey and other den sites shall be recorded. c. Disturbance and destruction of dens shall be avoided where possible. However, if potential dens are located within the proposed work area and cannot be avoided during construction, a qualified biologist shall remove these dens by carefully hand excavating them following the procedures described by the United States Fish and Wildlife Service. d. If a natal or pupping den is found in the survey area, the USWS shall be notified immediately. The United States Fish and Wildlife Service shall also receive notification of the results of preconstruction den searches and den excavations within five days after these activities are completed and before construction begins in the area. The United States Fish and Wildlife Service will receive written notification of the results within 30 days after these activities are completed. e. Following preconstruction kit fox den searches and den excavations and before construction, biologists shall establish exclusion zones around the remaining dens following the procedures described by the United States Fish and Wildlife Service. Exclusion zones shall be marked in the field with stakes and flagging. The radius of these zones: • Potential Den or Atypical Den: 50 feet • Known Den: 100 feet • Natal or Pupping Den: To be determined after consultation with United States Fish and Wildlife Service f. Construction-related activities shall be prohibited or greatly restricted within these zones. Essential vehicle operation on existing roads and foot travel shall be permitted. All other construction activities, vehicle operation, material and equipment storage, and other surface-disturbing activities will be prohibited within the exclusion zone. **Swainson's Hawk** 1. Conduct Preconstruction Surveys for Active Swainson's hawk Nests and Compensate for Loss of Foraging Habitat a. If construction is proposed during the Swainson's hawk nesting season (late March to late August), nesting surveys will be conducted before construction in areas that are considered potentially suitable habitat for Swainson's hawk nesting. Suitable sites contain trees large enough to support a Swainson's hawk nest and that are within 0.5 mile of the boundary of the project area. Survey protocol shall be consistent with accepted Swainson's hawk survey guidelines (Swainson's hawk TAC 2000). b. If Swainson's hawks are found to be nesting within 0.5 mile of the project area, one

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	of the following mitigation measures shall be implemented to avoid disturbance to nesting birds and young: • Avoid construction during the nesting season (late March – late August, or until the young have fledged); or • Through consultation with California Department of Fish and Game, have a biologist with Swainson's hawk or other raptor experience evaluate potential for disturbance of the pair during construction based on the level of ongoing disturbance (e.g., by farming activities or road traffic) and the observed sensitivity of the birds to ongoing activities, and establish and maintain an appropriate buffer for construction activities that can be adjusted based on changes in sensitivity exhibited by the hawks over the course of the nesting season. 2. California Department of Fish and Game typically requires mitigation for the loss of foraging habitat for Swainson's hawks if the habitat occurs within 10 miles of an active nest tree. There are no records for Swainson's hawks nesting within 10 miles, but if an active nest is found during preconstruction surveys, mitigation for loss of foraging habitat shall be developed in consultation with California Department of Fish and Game. This mitigation shall be consistent with accepted Swainson's Hawk mitigation guidelines (Swainson's Hawk TAC 2000). **Valley Elderberry Longhorn Beetle** Because work will be conducted within 100 feet of elderberry shrubs and at least three shrub will be removed, consultation with the United States Fish and Wildlife Service will be required for guidance and permitting. Incidental take permitting is required for construction related impacts to the Valley elderberry longhorn beetle or their habitat. The United States Fish and Wildlife Service has prepared the *Consultation Guidelines for the Valley Elderberry Longhorn Beetle* (1999) to assist federal agencies and non-fedral project applicants needing incidental take authorization through a Section 7 consultation or a section 10(a)(1)(B) permit in developing measures to avoid and minimize adverse effects on the Valley elderberry longhorn beetle. In addition, the following mitigation measures will be implemented: 1. Conduct pre-construction surveys for elderberry shrubs and stem counts to ensure that no new elderberry shrubs have established themselves. 2. Prior to construction, all areas to be avoided during construction activities will be fenced and flagged as Environmentally Sensitive Area. In areas where encroachment on the 100-foot buffer has been approved by the United States Fish and Wildlife Service, a minimum Environmentally Sensitive Area setback of at least 20 feet from the dripline of each elderberry plant will be provided. 3. Conduct Valley elderberry longhorn beetle pre-construction training of all work crews and contractors, instructing the contractor and all work crews on the status of the beetle and the need to protect its elderberry host plant. 4. A biological monitor should make weekly inspections of the project site to maintain fencing and signage during construction. The contractor shall be liable

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	to repair Environmentally Sensitive Area fencing and signage if required. The contractor will provide erosion control as needed and restore, with assistance of the biological monitor, any damage done to the buffer area including weeding and trash removal during construction. 5. No construction related insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant should be used in the Environmentally Sensitive Area, or within 100 feet of any elderberry plant with one or more stems measuring one inch or greater in diameter at ground level. 6. No mowing of grasses/ground cover will occur within five feet of elderberry plant stems. 7. Transplant elderberry plants and plan additional seedlings or cuttings: Four elderberry shrubs will be directly affected by removal or by being located within 20 feet of the construction area. Three of the four shrubs will be transplanted to a United States Fish and Wildlife Service-approved mitigation bank. Transplant procedures shall follow the recommendations provided in the United States Fish and Wildlife Service guidance letter (1999a). The mitigation site will be approved by the United States Fish and Wildlife Service during Section 7 formal consultation. The mitigation measures are in accordance with United States Fish and Wildlife Service guidelines (United States Fish and Wildlife Service 1999a). Mitigation in the form of planting replacement elderberry seedlings or cuttings will be required for the three transplanted elderberry shrubs (shrubs B, C, and D) and for the shrub that will not be removed, but lies within 20 feet of construction activities (shrub 2). The replacement plantings will occur in conjunction with the transplanting at a United States Fish and Wildlife Service mitigation site. A total of 50 elderberry seedlings and 47 associated native riparian plants will be planted to compensate for the loss of stems over or at one inch at a location to be determined by the United States Fish and Wildlife Service during Section 7 consultation. A suitable conservation area that is 0.17 hectares (0.413 acres) in extent would be required for these plantings. This area is suitable for one transplant, five elderberry seedlings/cuttings and five native plant associates. A suitable site for transplanting would be the Kaweah Oaks Preserve managed by the Sequoia Riverland Trust in Tulare County, or the San Joaquin River Conservancy's Ball Ranch in Fresno County. Suggested native plant associates to be planted in association with elderberry transplants and seedling/cuttings include species that are present or likely to occur on the site: *Salix gooddingii, Salix lucida lasiandra, Cephalanthus occidentalis, Fraxinus latifolia, Acer*

ALTERNATIVE	Avoidance, Minimization and/or Mitigation Measure Summary
	negundo californica, Quercus lobata, and Carex barbarae.
	INVASIVE PLANT SPECIES
ALTERNATIVE 1 AND ALTERNATIVE 2	In accordance with the Executive Order of Invasive Species, Executive Order 13112, and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control included in the project shall not use species listed as noxious weeds. Additional precautions to be taken are listed below. a. To avoid the introduction on new weeds in the project area, only certified weed-free imported material shall be used for temporary erosion control, such as sterile straw-wattles or weed-free, sterile rice straw. b. To avoid the spread of giant reed in the King's River streambed, all stands of this invasive species within the project impact area shall be removed prior to construction. c. Minor infestations of arundo can be eradicated by manual methods. Hand pulling works with new plants less than seven feet in height, but care must be taken that all rhizome material is removed. Stems and roots should be removed or burned on-site to avoid re-rooting. Chemical control is also necessary for complete removal. The most common herbicidal treatment against arundo is glyphosate, a primary in the form of Rodeo, which is approved for use in wetlands. Most effective application is post-flowering and pre-dormancy, usually late July to early October when plants are translocating nutrients into root and rhizomes.

APPENDIX G

Correspondence

cfay

From: "O'Loughlin, Robert" <Robert.O'Loughlin@fhwa.dot.gov>
To: "Dennis Mills" <DMills@co.tulare.ca.us>; "Dennis Wade" <dwade@arb.ca.gov>; "Jeff Lindberg" <jlindber@arb.ca.gov>; "Cari Anderson" <cari@caconsulting.org>; "Christina Lehn" <CLehn@co.kings.ca.us>; "Tom Webster" <twebster@co.kings.ca.us>; "Mark Hays" <MAHays@co.tulare.ca.us>; "Marvin Demmers" <MDemmers@co.tulare.ca.us>; "Agnes Jenkins" <agnes_jenkins@dot.ca.gov>; "John Gedney" <john_gedney@dot.ca.gov>; "Mike Brady" <Mike_Brady@dot.ca.gov>; "Steve Curti" <steve_curti@dot.ca.gov>; "Doris Lo" <Lo.Doris@epamail.epa.gov>; "Karina O'Connor" <OConnor.Karina@epamail.epa.gov>; "Levine, Leigh" <Leigh.Levine@fhwa.dot.gov>; "Sosa, Mayela" <Mayela.Sosa@fhwa.dot.gov>; "Scott Carson" <scott.carsontemp@fhwa.dot.gov>; "Luxenberg, Steve" <Steve.Luxenberg@fhwa.dot.gov>; "Jason Paukovits" <jasonp@fresnocog.org>; "Kristine Cai" <kcai@fresnocog.org>; "Mike Bitner" <mbitner@fresnocog.org>; "Ted Matley" <Ted.Matley@fta.dot.gov>; "Rob Ball" <rball@kerncog.org>; "Vincent Liu" <vliu@kerncog.org>; "Derek Winning" <derek@maderactc.org>; "Matt Fell" <matt@mcag.cog.ca.us>; "Terri Lewis" <terri@mcag.cog.ca.us>; "Doug Ito" <ito@sjcog.org>; "Kim Kloeb" <kkloeb@sjcog.org>; "Lark Downs" <LarkDowns@StanCOG.org>; "Sam Kaur" <skaur@StanCOG.org>; "Don Hunsaker" <Donald.Hunsaker@valleyair.org>; "Lauren Dawson" <lauren.dawson@valleyair.org>; "Tom Jordan" <tom.jordan@valleyair.org>
Cc: "Gabriel Gutierrez" <gabrielg@cityofclovis.com>; "Renee Mathis" <reneem@cityofclovis.com>; "Terri King" <tking@co.kings.ca.us>; "George Finney" <GFinney@co.tulare.ca.us>; "Ted Smalley" <TSmalley@co.tulare.ca.us>; "Barbara Goodwin" <bgoodwin@fresnocog.org>; "Patricia Taylor" <patricia@maderactc.org>; "Jesse B Brown" <jesse@mcag.cog.ca.us>; "Andy Chesley" <achesley@sjcog.org>; "Dana Cowell" <Cowell@sjcog.org>; "Vince Harris" <VHarris@StanCOG.org>; "Ronald E Brummett" <robrumm@zeus.kern.org>
Sent: Thursday, November 09, 2006 10:57 AM
Subject: RE: PM-10 and PM2.5 IAC for County of Tulare Ave. 416 WideningProject (CTIPS ID#11500000078)

Dennis,

FHWA concurs that the Ave. 416 widening project is not a project of air quality concern.

Thanks!

-----Original Message-----
From: Dennis Mills [mailto:DMills@co.tulare.ca.us]
Sent: Thursday, November 09, 2006 8:26 AM
To: Dennis Wade; Jeff Lindberg; Cari Anderson; Christina Lehn; Tom Webster; Mark Hays; Marvin Demmers; Agnes Jenkins; John Gedney; Mike Brady; Steve Curti; Doris Lo; Karina O'Connor; Levine, Leigh; Sosa, Mayela; O'Loughlin, Robert; Scott Carson; Luxenberg, Steve; Jason Paukovits; Kristine Cai; Mike Bitner; Ted Matley; Rob Ball; Vincent Liu; Derek Winning; Matt Fell; Terri Lewis; Doug Ito; Kim Kloeb; Lark Downs; Sam Kaur; Don Hunsaker; Lauren Dawson; Tom Jordan
Cc: Gabriel Gutierrez; Renee Mathis; Terri King; George Finney; Ted Smalley; Barbara Goodwin; Patricia Taylor; Jesse B Brown; Andy Chesley; Dana Cowell; Vince Harris; Ronald E Brummett
Subject: PM-10 and PM2.5 IAC for County of Tulare Ave. 416 WideningProject (CTIPS ID#11500000078)

Interagency Consultation Partners:

Tulare County Association of Governments (TCAG) along with the County of Tulare have prepared the attached interagency consultation memo for the Ave. 416 Widening Project. A PM-10 and PM2.5 hot-spot assessment is necessary to move the project forward. The County of Tulare has determined that the project is NOT a project of air quality concern.

The interagency consultation partners are requested to reply to this email to confirm their concurrence by November 22, 2006. A conference all will be conducted upon request. Please contact me if you have questions or need additional information.

Dennis S. Mills
Senior Regional Planner
Tulare County Association of Governments

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cfay

From: <OConnor.Karina@epamail.epa.gov>
To: "Dennis Mills" <DMills@co.tulare.ca.us>
Cc: "Andy Chesley" <achesley@sjcog.org>; "Agnes Jenkins" <agnes_jenkins@dot.ca.gov>; "Barbara Goodwin" <bgoodwin@fresnocog.org>; "Cari Anderson" <cari@caconsulting.org>; "Christina Lehn" <CLehn@co.kings.ca.us>; "Dana Cowell" <Cowell@sjcog.org>; "Derek Winning" <derek@maderactc.org>; "Don Hunsaker" <Donald.Hunsaker@valleyair.org>; <Lo.Doris@epamail.epa.gov>; "Dennis Wade" <dwade@arb.ca.gov>; "Gabriel Gutierrez" <gabrielg@cityofclovis.com>; "George Finney" <GFinney@co.tulare.ca.us>; "Doug Ito" <ito@sjcog.org>; "Jason Paukovits" <jasonp@fresnocog.org>; "Jesse B Brown" <jesse@mcag.cog.ca.us>; "Jeff Lindberg" <jlindber@arb.ca.gov>; "John Gedney" <john_gedney@dot.ca.gov>; "Kristine Cai" <kcai@fresnocog.org>; "Kim Kloeb" <kkloeb@sjcog.org>; "Lark Downs" <LarkDowns@StanCOG.org>; "Lauren Dawson" <lauren.dawson@valleyair.org>; "Leigh Levine" <Leigh.Levine@fhwa.dot.gov>; "Mark Hays" <MAHays@co.tulare.ca.us>; "Matt Fell" <matt@mcag.cog.ca.us>; "Mayela Sosa" <mayela.sosa@fhwa.dot.gov>; "Mike Bitner" <mbitner@fresnocog.org>; "Marvin Demmers" <MDemmers@co.tulare.ca.us>; "Mike Brady" <Mike_Brady@dot.ca.gov>; "Patricia Taylor" <patricia@maderactc.org>; "Rob Ball" <rball@kerncog.org>; "Renee Mathis" <reneem@cityofclovis.com>; "Bob O'Louglin" <robert.o'loughlin@fhwa.dot.gov>; "Ronald E Brummett" <robrumm@zeus.kern.org>; "Scott Carson" <scott.carsontemp@fhwa.dot.gov>; "Sam Kaur" <skaur@StanCOG.org>; "Steve Luxenberg" <steve.luxenberg@fhwa.dot.gov>; "Steve Curti" <steve_curti@dot.ca.gov>; "Ted Matley" <Ted.Matley@fta.dot.gov>; "Terri Lewis" <terri@mcag.cog.ca.us>; "Terri King" <tking@co.kings.ca.us>; "Tom Jordan" <tom.jordan@valleyair.org>; "Ted Smalley" <TSmalley@co.tulare.ca.us>; "Tom Webster" <twebster@co.kings.ca.us>; "Vince Harris" <VHarris@StanCOG.org>; "Vincent Liu" <vliu@kerncog.org>
Sent: Friday, November 17, 2006 8:52 AM
Attach: PM2.5_IAC_ave_416.pdf
Subject: Re: PM-10 and PM2.5 IAC for County of Tulare Ave. 416 Widening Project (CTIPS ID#11500000078)

EPA concurrs that the Ave. 416 widening project is not a project of air quality concern as described in the Transportation Conformity rule and that the project will not need a quantitative hot spot analysis.

Dennis Mills <DMills@co.tulare.ca.us>
11/09/2006 08:25 AM

To: Dennis Wade <dwade@arb.ca.gov>, Jeff Lindberg <jlindber@arb.ca.gov>, Cari Anderson <cari@caconsulting.org>, Christina Lehn <CLehn@co.kings.ca.us>, Tom Webster <twebster@co.kings.ca.us>, Mark Hays <MAHays@co.tulare.ca.us>, Marvin Demmers <MDemmers@co.tulare.ca.us>, Agnes Jenkins <agnes_jenkins@dot.ca.gov>, John Gedney <john_gedney@dot.ca.gov>, Mike Brady <Mike_Brady@dot.ca.gov>, Steve Curti <steve_curti@dot.ca.gov>, Doris Lo/R9/USEPA/US@EPA, Karina OConnor/R9/USEPA/US@EPA, Leigh Levine <Leigh.Levine@fhwa.dot.gov>, Mayela Sosa <mayela.sosa@fhwa.dot.gov>, Bob O'Louglin <robert.o'loughlin@fhwa.dot.gov>, Scott Carson <scott.carsontemp@fhwa.dot.gov>, Steve Luxenberg <steve.luxenberg@fhwa.dot.gov>, Jason Paukovits <jasonp@fresnocog.org>, Kristine Cai <kcai@fresnocog.org>, Mike Bitner <mbitner@fresnocog.org>, Ted Matley <Ted.Matley@fta.dot.gov>, Rob Ball <rball@kerncog.org>, Vincent Liu <vliu@kerncog.org>, Derek Winning <derek@maderactc.org>, Matt Fell <matt@mcag.cog.ca.us>, Terri Lewis <terri@mcag.cog.ca.us>, Doug Ito <ito@sjcog.org>, Kim Kloeb <kkloeb@sjcog.org>, Lark Downs

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cc: Gabriel Gutierrez <gabrielg@cityofclovis.com>, Renee Mathis <reneem@cityofclovis.com>, Terri King <tking@co.kings.ca.us>, George Finney <GFinney@co.tulare.ca.us>, Ted Smalley <TSmalley@co.tulare.ca.us>, Barbara Goodwin <bgoodwin@fresnocog.org>, Patricia Taylor <patricia@maderactc.org>, Jesse B Brown <jesse@mcag.cog.ca.us>, Andy Chesley <achesley@sjcog.org>, Dana Cowell <Cowell@sjcog.org>, Vince Harris <VHarris@StanCOG.org>, Ronald E Brummett <robrumm@zeus.kern.org>
Subject: PM-10 and PM2.5 IAC for County of Tulare Ave. 416 Widening Project (CTIPS ID#11500000078)

Interagency Consultation Partners:

Tulare County Association of Governments (TCAG) along with the County of Tulare have prepared the attached interagency consultation memo for the Ave. 416 Widening Project. A PM-10 and PM2.5 hot-spot assessment is necessary to move the project forward. The County of Tulare has determined that the project is NOT a project of air quality concern.

The interagency consultation partners are requested to reply to this email to confirm their concurrence by November 22, 2006. A conference all will be conducted upon request. Please contact me if you have questions or need additional information.

Dennis S. Mills
Senior Regional Planner
Tulare County Association of Governments

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(See attached file: PM2.5_IAC_ave_416.pdf)

tcag

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Tulare County Association of Governments

DATE: November 9, 2006

Interagency Consultation Partners

FROM: Dennis S. Mills, Senior Regional Planner

Consultation on PM-10 and PM2.5 Hot-spot Conformity Assessment for the Avenue 416 Widening Project (TUL-00-103)

The Tulare County Association of Governments (TCAG), as the project sponsor, is providing the following PM-10 and PM2.5 Hot-spot Conformity Assessment for the Ave. 416 Widening Project for Interagency Consultation. The project is currently undergoing review by Caltrans for NEPA clearance and this assessment is required prior to the NEPA clearance being finalized. It is requested that the Interagency Consultation Partners concur that the project is not a "Project of Air Quality Concern" (POAQC) via "reply to all". Comments on the assessment are due by November 22, 2006; an interagency conference call will be held upon request.

Project Description:

The project consists of widening and improving approximately 12 miles of Mountain View/Avenue 416/El Monte Way from Bethel Avenue in Fresno County east to Road 92 in the City of Dinuba in Tulare County. Within the City of Dinuba, between Road 72 and Road 92, El Monte Way would be improved to four lanes with a combination of raised median and two way left turn lane. The project would create a continuous four-lane roadway starting at SR 99 and ending at Orosi by linking the four way sections that currently exist west of Bethel Avenue in Fresno Avenue and east of Road 92 in Tulare County. The replacement of the Kings River Bridge in Tulare County will also be built as a four-lane structure.

Construction of the project is planned to begin in January 2010 and be completed by the end of 2011. The project design concept and scope is consistent with the federally approved 2007 FTIP, 2004 RTP and associated conformity determinations.

PM-10 and PM2.5 Hot-spot Conformity Assessment:

The Ave. 416 Widening Project is in the San Joaquin Valley PM-10 and PM2.5 nonattainment area. According to the Environmental Protection Agency (EPA) Transportation Conformity Guidance, PM-10 and PM2.5 hot-spot analysis is required for Projects of Air Quality Concern (POAQC) in non-attainment areas (40 CFR 93.123 (b) (1)). Projects that are exempt or not POAQC do not require hot-spot analysis.

The Ave. 416 Widening Project does not meet the criteria of an exempt project under 40 CFR 93.126. However, the City of Clovis has determined that the project does not meet criteria for POAQC as defined in the final rule by 40 CFR 93.123(b) (1). According to the Environmental Protection Agency Transportation Conformity Guidance (final rule), March 10, 2006, the following are the projects of air quality concern:

(i) New or expanded highway projects with greater than 125,000 Annual Average Daily Traffic (AADT) **and** 8% or more of such AADT is diesel truck traffic;

(ii) New or expanded highway projects that affect a transportation facility at a Level of Service D, E, or F, or will become a Level of Service D, E, or F; and
New or expanded highway projects that will significantly increase the amount of diesel truck traffic.

PM-10 and PM2.5 Hot-spot Conformity Assessment:

(i) According to the TCAG Transportation Model, annual average daily traffic projections (AADT) for the project are :

YEAR		AADT Without Project	AADT With Project
2020		18,569	18,596
2030		23,760	23,880

This project will not exceed the AADT threshold through 2030 (the final year of the current Regional Transportation Plan). According to recent traffic counts by the County of Tulare, truck traffic is estimated to be only 10% of the total AADT. Truck percentages will not increase based on the widening of Ave. 416.

(ii) The average Level of Service for the Project is "C" and building this project will bring the average level of service to "A". This project will improve congestion and safety along the length of the project.

This area is rural with primarily agricultural lands in the unincorporated counties and urban in the City of Dinuba with commercial structures, residences and churches on either side of the road. The established truck routes will not change, nor will the percentage of truck traffic increase significantly.

Public Involvement Process

The PM2.5 Project-Level Conformity and Hot-Spot Analysis Frequently Asked Questions indicates that "for projects that are not of air quality concern, a comment period is only required for project-level conformity determinations if such a comment period would have been required under NEPA". Since the NEPA for these projects is expected to be an Environmental Impact Report (EIR), a public hearing will be required for this assessment.

The final NEPA document will be updated to reflect the interagency consultation process, including copies of the consultation memo, email and responses received. If you have any questions or need additional information, please contact Dennis Mills (dmills@co.tulare.ca.us) at (559) 733-6653 Ext. 4887.

tcag

5961 S. Mooney Blvd.
Visalia, California 93277
(559)733-6291
FAX (559)730-2653

Tulare County Association of Governments

DATE: November 8, 2006

TO: Interagency Consultation Partners

FROM: Ted Smalley, TCAG Deputy Executive Secretary

RE: **Consultation on PM-10 and PM2.5 Hot-spot Conformity Assessment for the Avenue 416 Widening Project (TUL-00-103)**

The Tulare County Association of Governments (TCAG), as the project sponsor, is providing the following PM-10 and PM2.5 Hot-spot Conformity Assessment for the Ave. 416 Widening Project for Interagency Consultation. The project is currently undergoing review by Caltrans for NEPA clearance and this assessment is required prior to the NEPA clearance being finalized. It is requested that the Interagency Consultation Partners concur that the project is not a "Project of Air Quality Concern" (POAQC) via "reply to all". Comments on the assessment are due by November 22, 2006; an interagency conference call will be held upon request.

Project Description:

The project consists of widening and improving approximately 12 miles of Mountain View/Avenue 416/El Monte Way from Bethel Avenue in Fresno County east to Road 92 in the City of Dinuba in Tulare County. Within the City of Dinuba, between Road 72 and Road 92, El Monte Way would be improved to four lanes with a combination of raised median and two way left turn lane. The project would create a continuous four-lane roadway starting at SR 99 and ending at Orosi by linking the four way sections that currently exist west of Bethel Avenue in Fresno Avenue and east of Road 92 in Tulare County. The replacement of the Kings River Bridge in Tulare County will also be widened to a four-lane structure.

Construction of the project is planned to begin in January 2010 and be completed by June of 2011. The project design concept and scope is consistent with the federally approved 2007 FTIP, 2004 RTP and associated conformity determinations.

PM-10 and PM2.5 Hot-spot Conformity Assessment:

The Ave. 416 Widening Project is in the San Joaquin Valley PM-10 and PM2.5 nonattainment area. According to the Environmental Protection Agency (EPA) Transportation Conformity Guidance, PM-10 and PM2.5 hot-spot analysis is required for Projects of Air Quality Concern (POAQC) in non-attainment areas (40 CFR 93.123 (b) (1)). Projects that are exempt or not POAQC do not require hot-spot analysis.

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(i) New or expanded highway projects with greater than 125,000 Annual Average Daily Traffic (AADT) **and** 8% or more of such AADT is diesel truck traffic;
(ii) New or expanded highway projects that affect a transportation facility at a Level of Service D, E, or F, or will become a Level of Service D, E, or F; and
(iii) New or expanded highway projects that will significantly increase the amount of diesel truck traffic.

PM-10 and PM2.5 Hot-spot Conformity Assessment:

[redacted]

[redacted]		[redacted]	[redacted]
		[redacted]	[redacted]
[redacted]		[redacted]	[redacted]
[redacted]		[redacted]	[redacted]

This project will not exceed the AADT threshold through 2030 (the final year of the current Regional Transportation Plan). According to recent traffic counts by the County of Tulare, truck traffic is estimated to be only 10% of the total AADT. Truck percentages will not increase based on the widening of Ave. 416.

(ii) The average Level of Service for the Project is "C" and building this project will bring the average level of service to "A". This project will improve congestion and safety along the length of the project.

(iii) This area is rural with primarily agricultural lands in the unincorporated counties and urban in the City of Dinuba with commercial structures, residences and churches on either side of the road. The established truck routes will not change, nor will the percentage of truck traffic increase significantly.

Public Involvement Process

The PM2.5 Project-Level Conformity and Hot-Spot Analysis Frequently Asked Questions indicates that "for projects that are not of air quality concern, a comment period is only required for project-level conformity determinations if such a comment period would have been required under NEPA". Since the NEPA for these projects is expected to be an Environmental Impact Report (EIR), a public hearing will be required for this assessment.

The final NEPA document will be updated to reflect the interagency consultation process, including copies of the consultation memo, email and responses received. If you have any questions or need additional information, please contact Dennis Mills (dmills@co.tulare.ca.us) at (559) 733-6653 Ext. 4887.

ARNOLD SCHWARZENEGGER
GOVERNOR

DEPARTMENT OF CONSERVATION
STATE OF CALIFORNIA

CALIFORNIA CONSERVATION

DIVISION OF
LAND RESOURCE
PROTECTION

801 K STREET
SACRAMENTO
CALIFORNIA
95814

PHONE
916/324-0850

FAX
916/327-3430
TDD
916/324-2555

INTERNET
consrv.ca.gov

RECEIVED
DEC 2 2004

December 15, 2004

Ms. Melinda M. Rivasplata, AICP
Principal Environmental Planner
PAR Environmental Services, Inc.
P.O. Box 160756
Sacramento, CA 95816-0756

Subject: Public Agency Acquisition of Land Enrolled in Williamson Act Contract, Road Widening Project, Fresno and Tulare Counties

Dear Ms. Rivasplata:

Thank you for your letter of November 15, 2004, notifying the Department of Conservation (Department) of the proposed acquisition of land enforceably restricted by Williamson Act contracts by Fresno and Tulare Counties (Counties). The purpose of the acquisition is to construct road widening and intersection improvements along a 12- mile section of Mountain View Avenue/Avenue 416 in Fresno/Tulare Counties and El Monte Way in the City of Dinuba. The project will address the need to improve a projected increase in traffic volume and poor Level of Service and reduce higher than normal accident rates. Two construction alternatives are being considered involving portions of several parcels under several contracts and a maximum of 39 acres of contracted land, some of which is prime agricultural land. Adjacent land outside Dinuba is primarily irrigated cropland. Acquisition is anticipated to occur in five years.

The Williamson Act requires that public agencies shall not locate public improvements in agricultural preserves unless the following specific findings can be made (Government Code Section 51292):

- *"The location is not based primarily on a consideration of the lower cost of acquiring land in an agricultural preserve* (§51292(a))."
- *"If the land is agricultural land covered under a contract pursuant to this chapter for any public improvement, that there is no other land within or outside the preserve on which it is reasonably feasible to locate the public improvement* (§51292(b))."

The letter states that the location of improvements was determined by the established road and necessary adjacent land not the lower cost of the land being in agricultural preserves. Alternatives are also limited by the location of the established road to be improved and the need to utilized adjacent, contiguous land. Further shifting of improvements to the north or south is not reasonably feasible. Both sides of the road involve contracted land. The difference in total contracted acreage between alternative alignments is four acres (39 acres for the preferred Alternative 1 v. 35 acres for Alternative 2). The alignments, which involve locations to the north and/or south, were selected to avoid residences, agricultural infrastructure, a school and agricultural processing facilities.

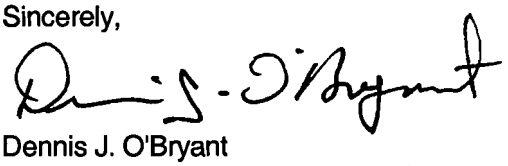
This explanation could provide support for making the required findings. The Department recommends that the Counties include the location of contracted land and land uses on the alignment maps (or an additional map) to support the explanation.

A Williamson Act contract is an enforceable restriction pursuant to Article XIII, section 8 of the California Constitution and Government Code section 51252. Assuming other necessary requirements are met, acquisition of Williamson Act land must meet requirements of eminent domain law for acquisition by eminent domain or in lieu of eminent domain (e.g., Code of Civil Procedure section 1230.010 et seq. and Government Code section 7260 et seq.) in order to void the contract pursuant to section 51295. If the acquisition does not void the contract, the Counties' uses of contracted property will be affected and limited by the terms of the contract and provisions of the Act.

The Department does not provide counsel regarding eminent domain law but encourages the Counties to obtain legal counsel for this purpose. To assist our review, we request related documentation in the form of copies of eminent domain proceedings, the property appraisal and offer pursuant to Government Code sections 7267.1 and 7267.2 and a Resolution of Necessity, if applicable. In addition, we request a chronological explanation of actions taken and planned in purchasing the property. The letter states that neither eminent domain proceedings nor appraisals can commence until the environmental review process has been completed (Circulation of an Environmental Impact Report/Environmental Assessment is anticipated in the spring of 2005), and detailed information, for this reason, is confidential. If the Counties have established procedures for property acquisitions, a copy of those procedures may be sufficient for the Department's review.

Please be advised that pursuant to Government Code §51291(d), the Department must be notified of any proposed, significant changes to the project. The Department must also be notified within 10 days when the property is actually acquired (Government Code §51291(c)). If the Counties determine not to locate the proposed public improvement on the subject property, before returning the land to private ownership, it must notify the Department, and the land must be reenrolled in a new contract or encumbered by an enforceable restriction at least as restrictive as that provided by the Williamson Act (Government Code §51295). If you have any questions, please contact Bob Blanford, Research Analyst, at (916) 327-2145.

Sincerely,



Dennis J. O'Bryant
Acting Assistant Director

cc: The Honorable Robert C. Werner
Fresno County Assessor
P.O. Box 1146
Fresno, CA 93715-1146

Fresno County Board of Supervisors
2281 Tulare Street, #301, Hall of Records
Fresno, CA 93721-2198

The Honorable Gregory B. Hardcastle
Tulare County Assessor
221 S. Mooney Blvd., Room 102-E
Visalia, CA 93291-4593

Tulare County Board of Supervisors
Administration Building
2800 West Burrell Avenue
Visalia, CA 93291

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

PAUL D. THAYER, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
Relay Service From TDD Phone **1-800-735-2922**
from Voice Phone **1-800-735-2929**

Contact Phone: **(916) 574-1892**
Contact FAX: **(916) 574-1925**

RECEIVED
DEC 15 2004

December 6, 2004

File Ref: SD 2004-11-22.1

Melinda M. Rivasplata, AICP
PAR Environmental Services, Inc.
P.O. Box 160756
Sacramento, CA 95816-0756

Dear Ms. Rivasplata:

SUBJECT: Mountain View Avenue/Avenue 416/El Monte Way Road Widening Project, SCH 2004111084, Fresno and Tulare Counties

Staff of the California State Lands Commission (CSLC) has reviewed the information submitted with your letter of November 17, 2004. The project involves the widening of the subject roads and a new bridge across the Kings River.

As background, the State acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all the people of the State for statewide Public Trust purposes which include waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. The landward boundaries of the State's sovereign interests in areas that are subject to tidal action are generally based upon the ordinary high water marks of these waterways as they last naturally existed. In non-tidal navigable waterways, the State holds a fee ownership in the bed of the waterway between the two ordinary low water marks as they last naturally existed. The entire non-tidal navigable waterway between the ordinary high water marks is subject to the Public Trust Easement. Both the easement and fee-owned lands are under the jurisdiction of the CSLC. The locations of the ordinary high and low water marks are often related to the last natural conditions of the river, and may not be apparent from a present day site inspection.

In the project area the bed of the Kings River, as it naturally existed, between the ordinary low water marks, is owned in fee by the State of California. The State has a Public Trust Easement in the area situated between the ordinary low and high water marks.

Please be advised that the replacement of the Kings River Bridge will require formal authorization by the CSLC. An application for lease of these sovereign lands must be submitted to the CSLC. Enclosed is the CSLC's Lease Application Packet. Please complete this application and return it to Jane Smith, Public Land Management Specialist, at the above address, along with the filing fee and minimum expense deposit highlighted on Page 9. Upon receipt of the application and fees, the Applicant will be provided with a reimbursement agreement. An executed reimbursement agreement to cover the CSLC's cost to process this transaction is required as part of a complete application.

Additionally, the issuance of any new lease for the use of State lands requires compliance with the California Environmental Quality Act (CEQA). The terms of CEQA may be found in the California Public Resources Code (PRC), Sections 21000 et. seq., and in the State CEQA Guidelines, California Code of Regulations, Title 14, Sections 15000 et seq. If you have any questions you may contact Jane Smith at 916-574-1892 or Senior Staff Counsel Curtis Fossum at 916-574-1850. Thank you for your cooperation.

Sincerely,

Robert Lynch, Chief
Land Management Division

Enclosure
cc: Office of Kings County Recorder
Office of Kings County Assessor

PAR ENVIRONMENTAL SERVICES, INC.
Cultural Resource Management ■ Biology ■ Environmental Planning
ESTABLISHED 1982

November 17, 2004

State Lands Commission
100 Howe Avenue, Suite 100 So.
Sacramento, CA 95825

Attention: Jane Smith

RE: Fresno County and Tulare County: Mountain View Avenue/Avenue 416/El Monte Way Road Widening Project (State Clearinghouse Number 2004111084)

Dear Ms.Smith:

We spoke briefly on the telephone on this last Tuesday regarding this project. Please consider this early formal notification and request for early consultation for a proposal by Tulare County and Fresno County to construct a road widening and improvement project, which includes the replacement of the Kings River Bridge. PAR ENVIRONMENTAL SERVICES, INC. has prepared a number of technical studies, including a Natural Environment Study (NES) for biological resources and is also preparing a combined Environmental Impact Report/Environmental Assessment for the project. The Notice of Preparation for was circulated through the State Clearinghouse beginning November 16. A copy of the NOP is attached (SCH # 2004111084).

The United States Fish and Wildlife Service, United States Army Corps of Engineers, California Department of Fish and Game, the United States Department of Agriculture National Resources Conservation Service (NRCS), the California Department of Conservation and the Kings River Conservation District have also been notified of the proposed project.

Circulation of the Draft EIR/EA is anticipated in the spring of 2005. The CEQA lead agency for the project is the Tulare County Resource Management Agency; the Federal Highway Administration is lead agency for NEPA.

The proposed project consists of approximately 12 miles of roadway improvement and a bridge replacement over the Kings River on the existing Mountain View Avenue/Avenue 416 in Fresno/Tulare counties and El Monte Way within the City

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http://www.PARenvironmental.com

of Dinuba. The location and vicinity of the project are shown in Attachment B. The USGS Quad Map locations are as follows:

Project Segments		Location
A and B.	Fresno County - Bethel Avenue to Smith Avenue (Road 32 at the County Line)	Selma and Reedley USGS 7.5 min. quads: In Township 16 South, Range 22 E - Sections 10, 11; 10, 13,14, & 15; In Township 16 South, Range 23 E - Sections 7, 8 & 18
C to E.	Tulare County - Road 32 to Road 72 (Dinuba City Limits	Reedley USGS 7.5 min. quad: In Township 16 South, Range 23 E - Sections 8, 9, 10, 11, 12, 13, 14, 15, 16 &17
F.	City of Dinuba - Road 72 to Road 92)	Reedley and Orange Cove So. USGS 7.5 min. quad: In Township 16 South, Range 24 E - Sections 7, 8, 9, 16, 17 & 18

Two alternatives are being considered that vary in the amount of north and south side widening. Both alternatives would involve replacement of the existing Kings River Bridge with a new bridge. The exact type of bridge has not been determined.

1. A description of the purpose and need and project description are included in **Attachment A.**

2. Project Vicinity and Location Maps are in **Attachment B.**

3. Geometric drawings for project alternatives are in **Attachment C** (EIR Appendix A).

4. Characteristics of adjacent land are described in **Attachment D.**

5. A summary of the project's impacts on biolog ical resources is provided in **Attachment E.**

6. CEQA Notice of Preparation is provided in **Attachment F.**

We would like to get from you a determination as to whether this portion of the Kings River is in the jurisdiction of the State Lands Commission, and if so, what permits or leases will be needed and what environmental issues the Commission is particularly concerned about with respect to the bridge replacement over the Kings River. Please contact me at (916) 739-8356 if I can provide additional information.

We look forward to receiving your input on this project.

Sincerely,
PAR ENVIRONMENTAL SERVICES, INC.

Melinda M. Rivasplata, AICP
Principle Environmental Planner

cc: Marcia Vierra, Tulare County Resource Management Agency, w/o attachments
James May, Fresno County Public Works Department, w/o attachments
Alan Glen, Quincy Engineering, w/o attachments
Gary Maniery, PAR Environmental Services, Inc., w/o attachments

PAR ENVIRONMENTAL SERVICES, INC.

Cultural Resource Management ■ Biology ■ Environmental Planning

ESTABLISHED 1982

May 4, 2004

Mr. Bill Loudermilk
Region 4
California Department of Fish and Game
1234 East Shaw Avenue
Fresno, CA 93710

RE: **Mountain View Avenue/Avenue 416/El Monte Way Widening Project Fresno/Tulare Counties and City of Dinuba, California (PAR Ref. No. 01-905)**

Dear Mr. Loudermilk:

PAR ENVIRONMENTAL SERVICES, INC. (PAR) is conducting an update to this biological investigation for the technical study (Natural Environment Study). The proposed project calls for the widening of Mountain View Avenue in Fresno County, Avenue 416 in Tulare County and El Monte Way in the City of Dinuba. The roadway will be expanded from a two-lane to a four-lane facility for twelve miles, from Bethel Road in Fresno County to Road 92 on the eastern edge of the City of Dinuba. The location of this proposed work is shown on the enclosed figure, composed of the USGS quadrangles of Selma, Reedley and Orange Cove South.

We have conducted special status species surveys for the project, and also surveyed for wetlands and any other important biological resources. We would appreciate receiving an updated species list, and hearing any concerns your agency may have regarding this project so that we may address these issues in our technical studies.

Please contact me at (530) 477-7415, Melinda Rivasplata at the letterhead number if you have any questions. Thank you for your prompt response and assistance.

Sincerely,
PAR ENVIRONMENTAL SERVICES, INC.

Melinda Rivasplata

for Susan Sanders
Principal Biologist

Enclosure

cc: Gary Maniery, PAR
Melinda Rivasplata, PAR

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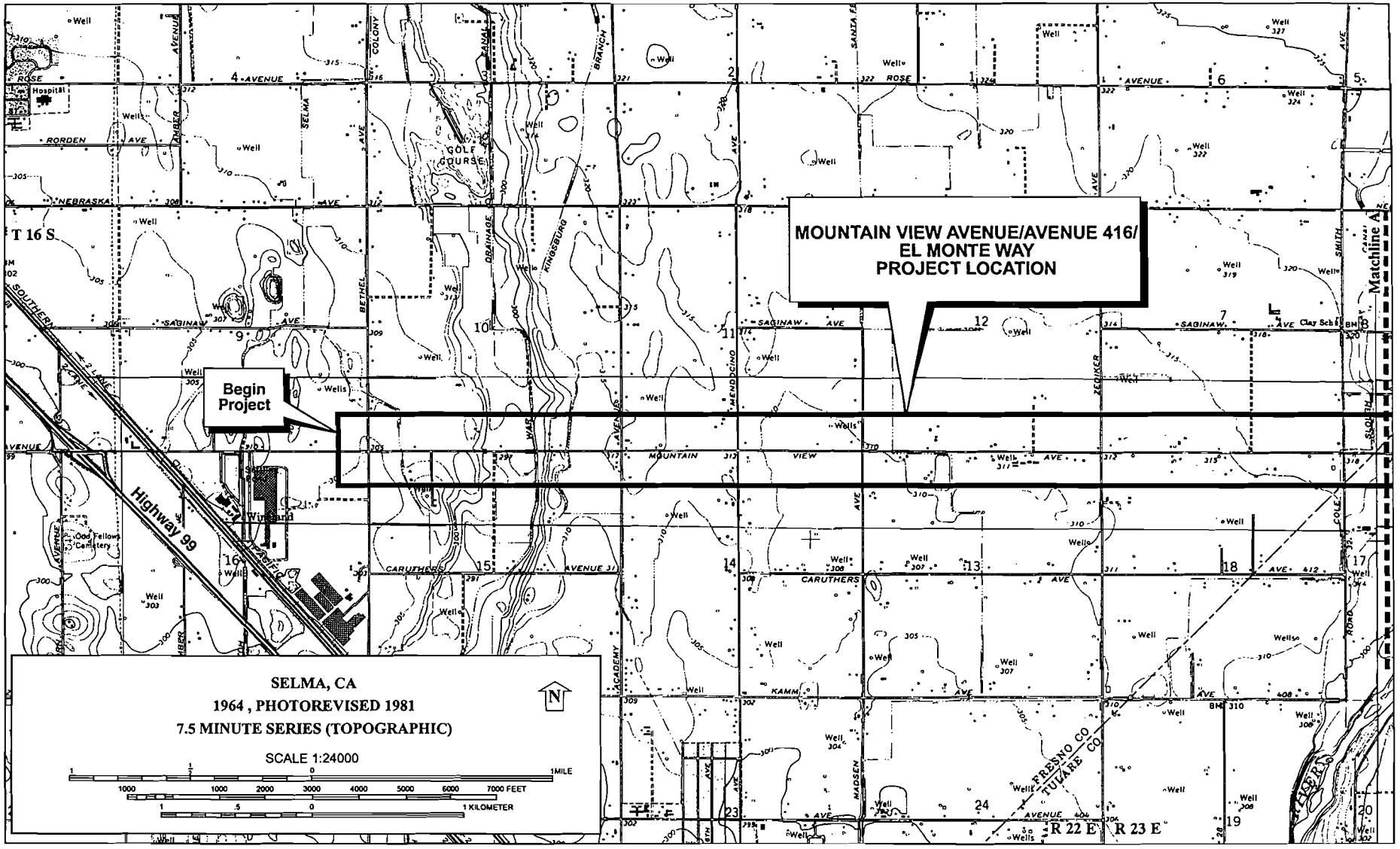
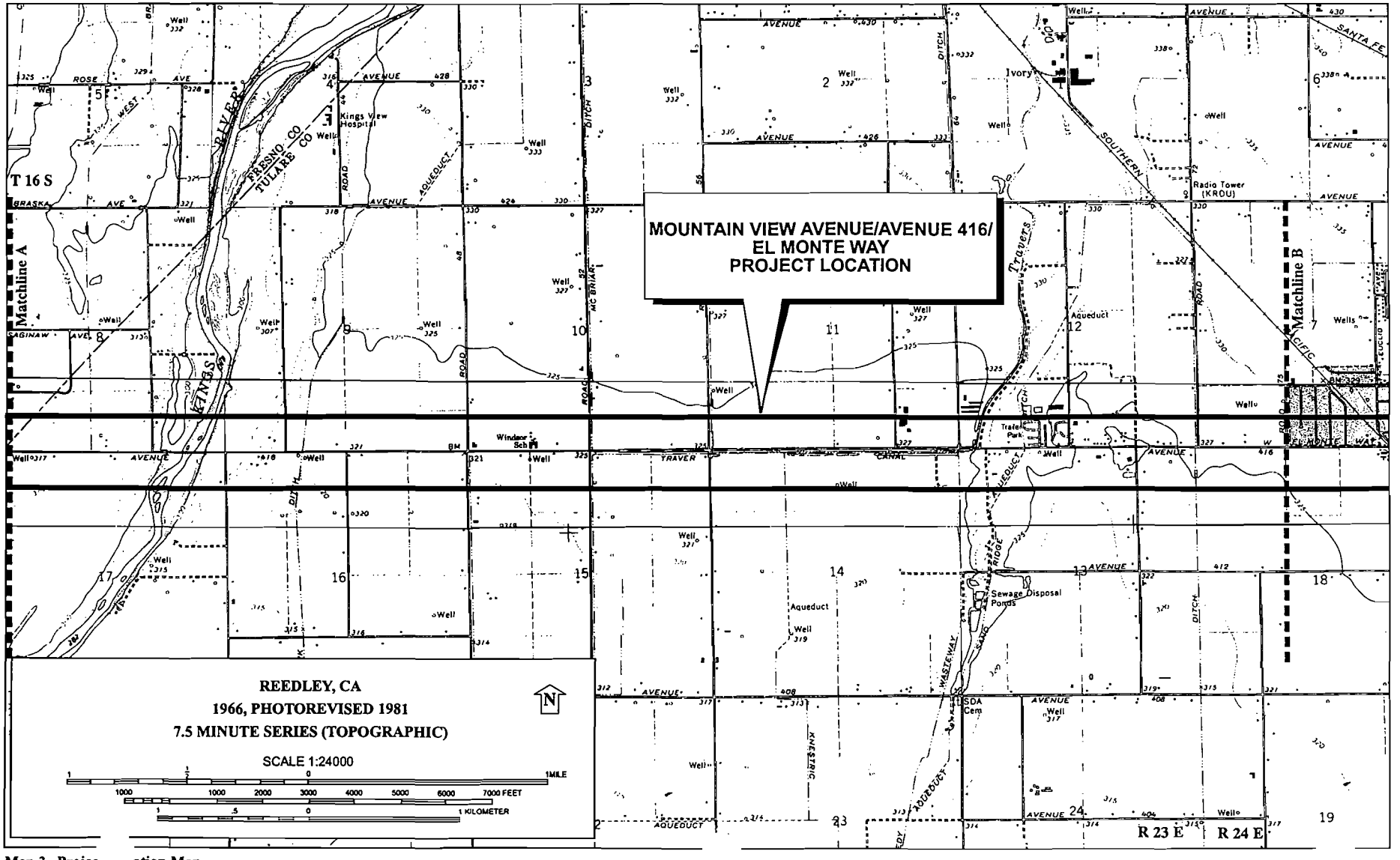
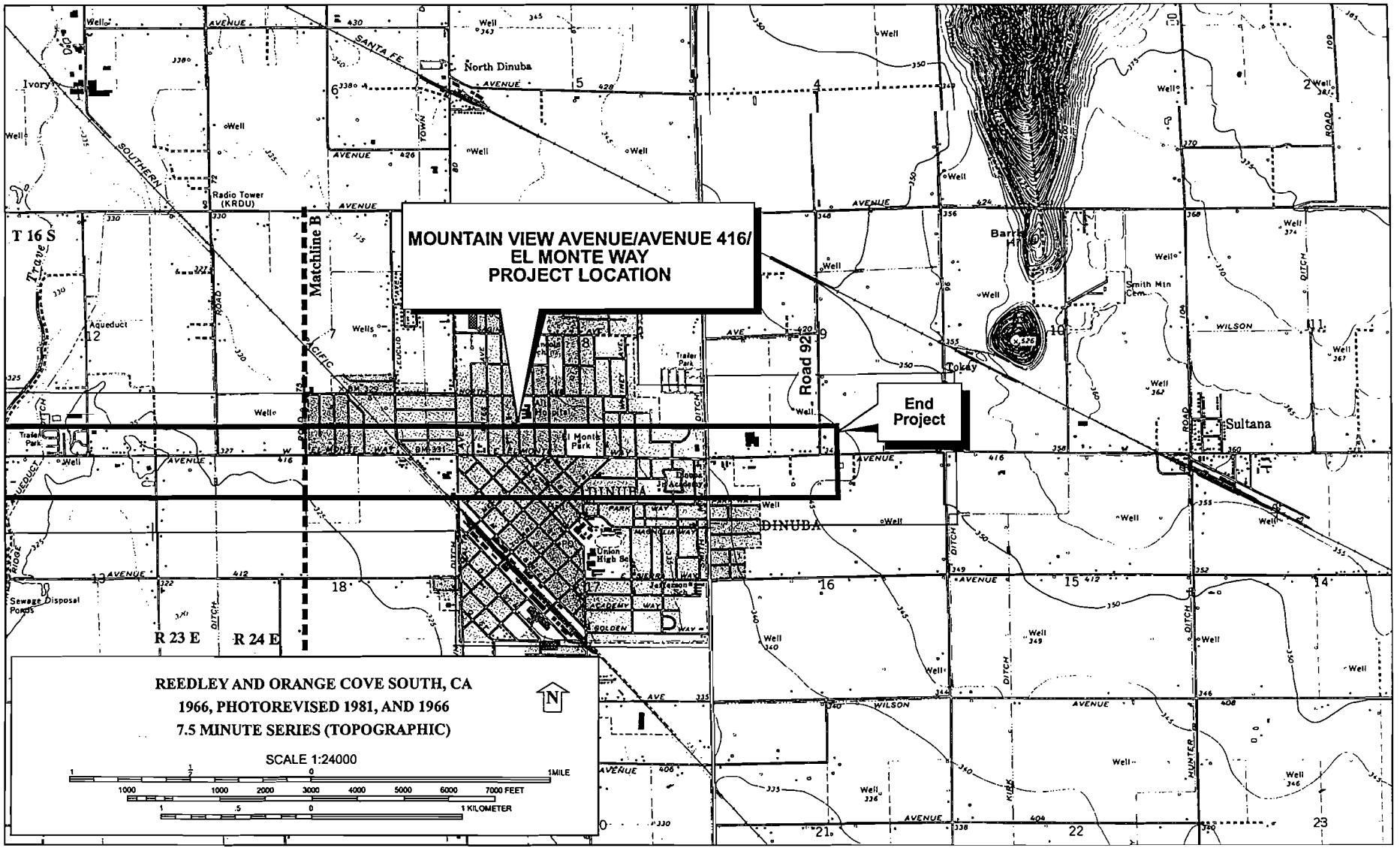
http://www.PARenvironmental.com



Map 2. Project Location Map



Map 3. Projec. .ation Map



Map 4. Project Location Map

PAR ENVIRONMENTAL SERVICES, INC.

Cultural Resource Management ■ Biology ■ Environmental Planning

ESTABLISHED 1982

May 4, 2004

Mr. Harry Mossman
Section 7 Office Assistant
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

RE: Mountain View Avenue/Avenue 416/El Monte Way Widening Project Fresno/Tulare Counties and City of Dinuba, California (PAR Ref. No. 01-905)

Dear Mr. Mossman:

PAR ENVIRONMENTAL SERVICES, INC. (PAR) is conducting an update to this biological investigation for the technical study (Natural Environment Study). The proposed project calls for the widening of Mountain View Avenue in Fresno County, Avenue 416 in Tulare County and El Monte Way in the City of Dinuba. The roadway will be expanded from a two-lane to a four-lane facility for twelve miles, from Bethel Road in Fresno County to Road 92 on the eastern edge of the City of Dinuba. The location of this proposed work is shown on the enclosed figure, composed of the USGS quadrangles of Selma, Reedley and Orange Cove South.

We have conducted special status species surveys for the project, and also surveyed for wetlands and any other important biological resources. We would appreciate receiving an updated species list, and hearing any concerns your agency may have regarding this project so that we may address these issues in our technical studies.

Please contact me at (530) 477-7415 or Melinda Rivasplata at the letterhead number if you have any questions. Thank you for your prompt response and assistance.

Sincerely,
PAR ENVIRONMENTAL SERVICES, INC.

Melinda M. Rivasplata

for Susan Sanders
Principal Biologist

Enclosure

cc: Gary Maniery, PAR
Melinda Rivasplata, PAR

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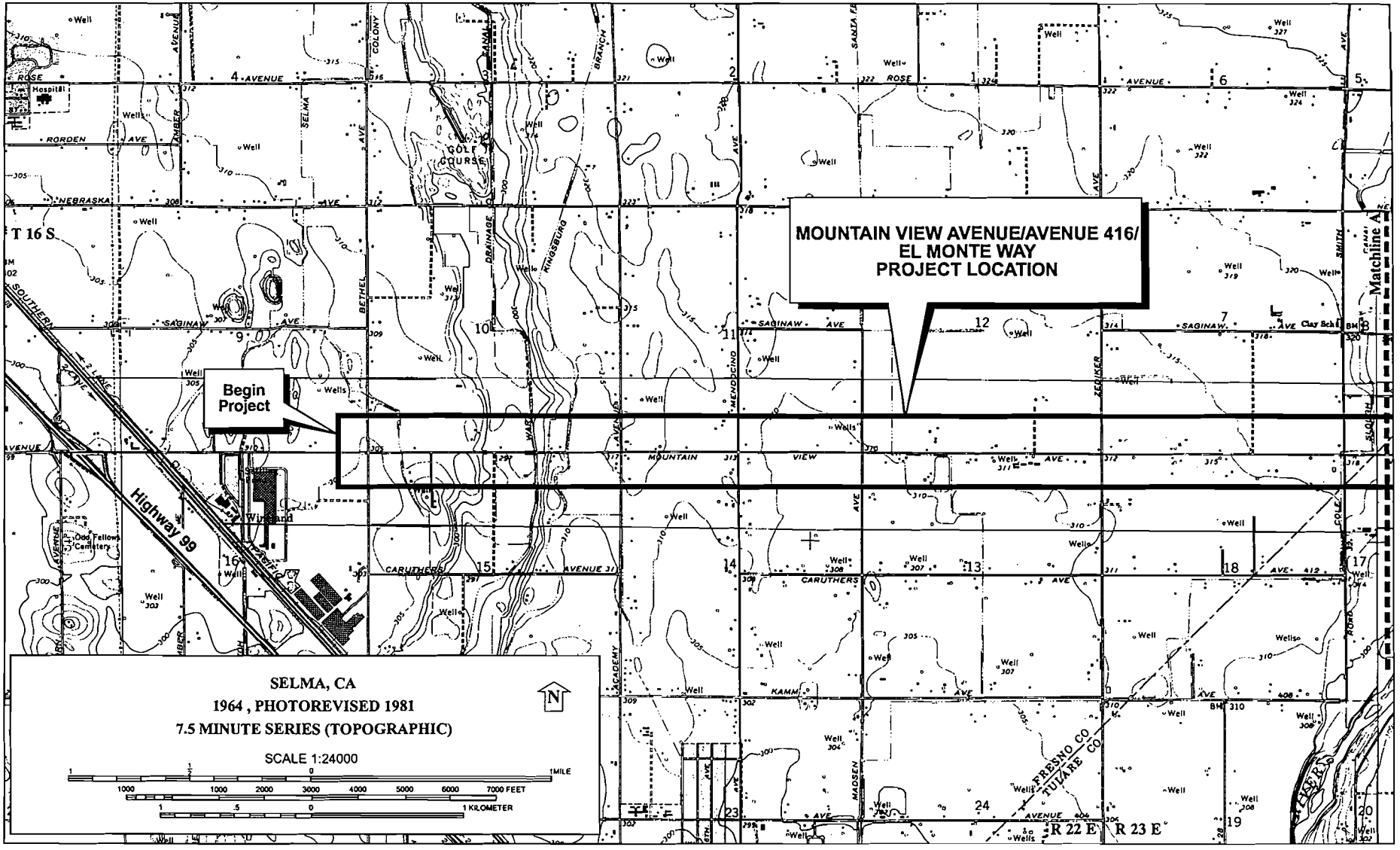

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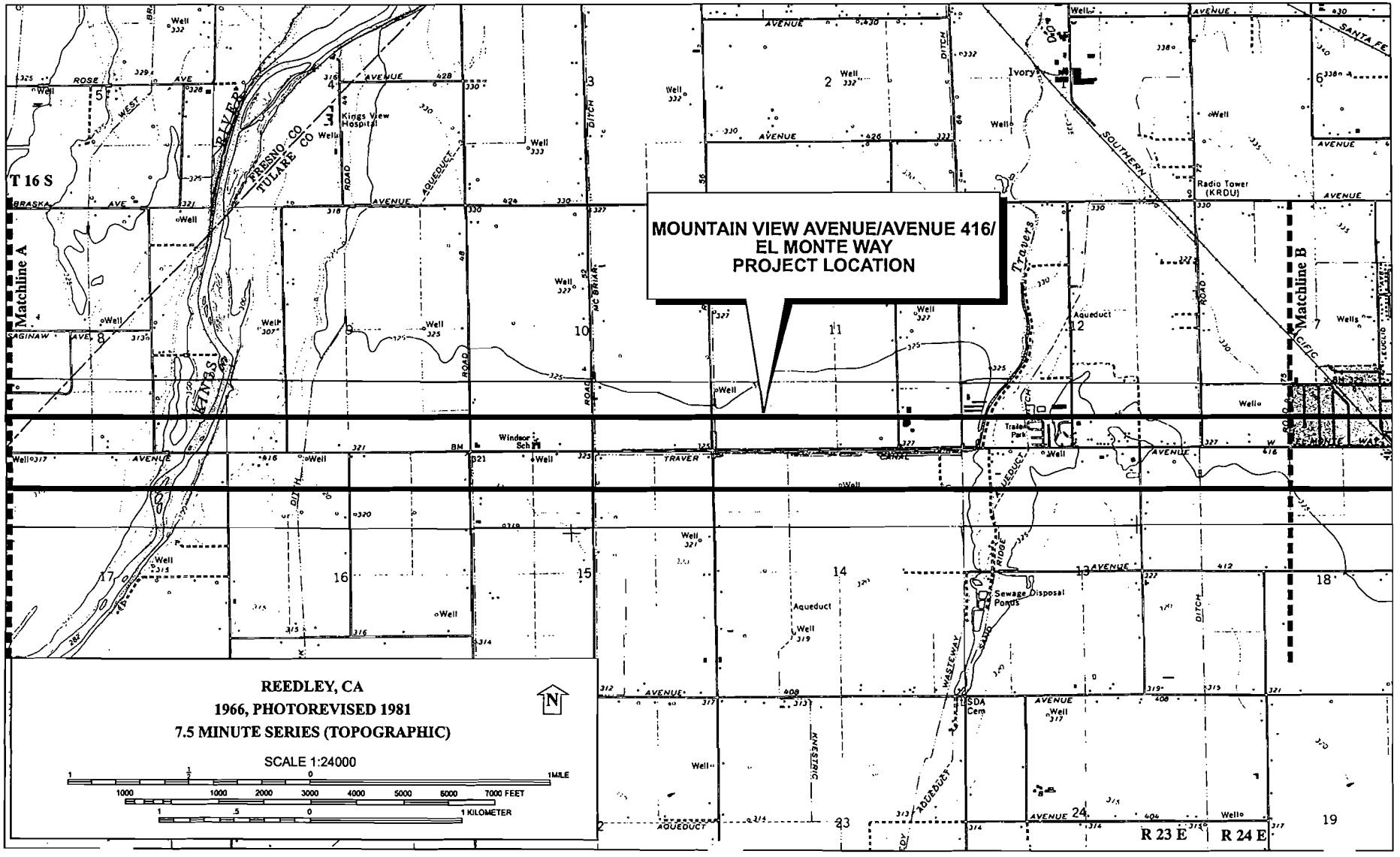
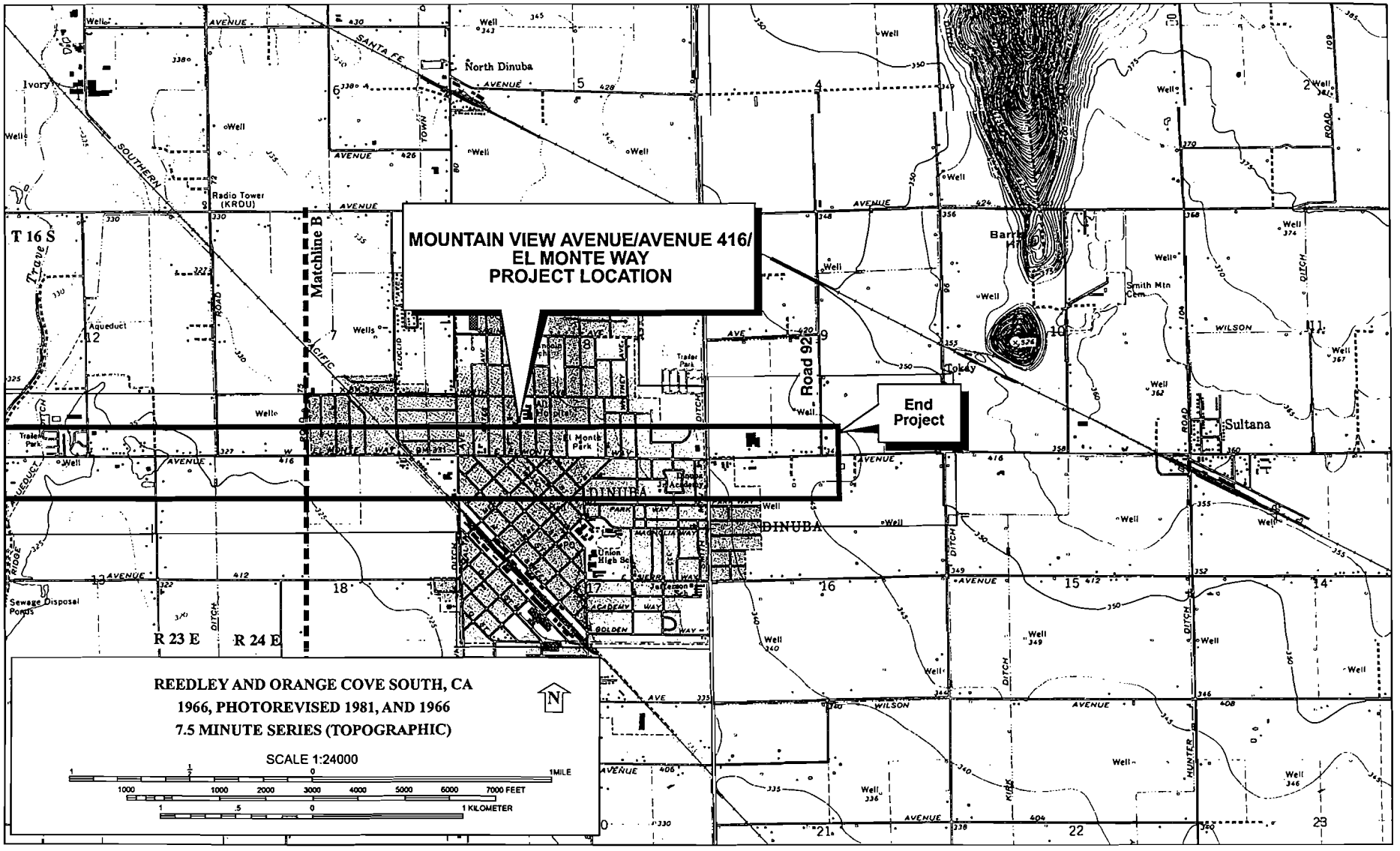


Map 3. Projec ation Map



Map 4. Project Location Map

PAR ENVIRONMENTAL SERVICES, INC.
Cultural Resource Management ■ Biology ■ Environmental Planning
ESTABLISHED 1982

November 22, 2004

Kings River Conservation District
4886 East Jensen Avenue
Fresno, CA 93725

Attention: Mr. Scott Redelfs

RE: Fresno County and Tulare County: Mountain View Avenue/Avenue 416/El Monte Way Road Widening Project (State Clearinghouse Number 2004111084)

Dear Mr. Redelfs:

Please consider this early formal notification of a proposal by Tulare County and Fresno County to construct a road widening and improvement project, including the proposed replacement of the Kings River Bridge. Land affected by right of way acquisition is currently in agricultural use. A combined Environmental Impact Report/Environmental Assessment is being prepared for the Mountain View Avenue/Avenue 416/El Monte Way Road Widening Project. Circulation of the Draft EIR/EA is anticipated in the spring of 2005. The CEQA lead agency for the project is the Tulare County Resource Management Agency and the Federal Highway Administration is lead agency for NEPA. Please note that there is currently no identified funding for this project; the earliest anticipated date for commencement of right of way acquisition would be at least five years away.

The United States Fish and Wildlife Service, United States Army Corps of Engineers, California Department of Fish and Game, the United States Department of Agriculture National Resources Conservation Service (NRCS), the California Department of Conservation and the State Lands Commission have also been notified of the proposed project.

The proposed project consists of approximately 12 miles of roadway improvement on the existing Mountain View Avenue/Avenue 416 in Fresno/Tulare counties and El Monte Way within the City of Dinuba. The location and vicinity of the project are shown in Attachment B. The USGS Quad Map locations are as follows:

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http://www.PARenvironmental.com

	Project Segments	Location
A and B.	Fresno County – Bethel Avenue to Smith Avenue (Road 32 at the County Line)	Selma and Reedley USGS 7.5 min. quads: In Township 16 South, Range 22 E - Sections 10, 11; 10, 13,14, & 15; In Township 16 South, Range 23 E – Sections 7, 8 & 18
C and E.	Tulare County – Road 32 to Road 72 (Dinuba City Limits	Reedley USGS 7.5 min. quad: In Township 16 South, Range 23 E – Sections 8, 9, 10, 11, 12, 13, 14, 15, 16 &17
F.	City of Dinuba – Road 72 to Road 92)	Reedley and Orange Cove So. USGS 7.5 min. quad: In Township 16 South, Range 24 E – Sections 7, 8, 9, 16, 17 & 18

Two alternatives are being considered that vary in the amount of north and south side widening. Both alternatives would affect parcels in agricultural use. Both alternatives would involve replacement of the existing Kings River Bridge with a new bridge. The exact type of bridge has not been determined.

1. A description of the purpose and need and project description - **Attachment A.**

2. Project Vicinity and Location Maps - **Attachment B.**

3. Geometric drawings for project alternatives - **Attachment C.**

4. Characteristics of adjacent land - **Attachment D.**

5. Summary of project impacts on agricultural resources – **Attachment E.**

We would like to receive input from you regarding your agency's areas of concern related to this project. Please contact me at (916) 739-8356 if I can provide additional information.

We look forward to receiving your input on this project.

Sincerely,
PAR ENVIRONMENTAL SERVICES, INC.

Melinda M. Rivasplata, AICP
Principle Environmental Planner

cc: Marcia Vierra, Tulare County Resource Management Agency, w/o attachments
James May, Fresno County Public Works Department, w/o attachments
Alan Glen, Quincy Engineering, w/o attachments
Gary Maniery, PAR Environmental Services, Inc., w/o attachment

PAR ENVIRONMENTAL SERVICES, INC.
Cultural Resource Management ■ Biology ■ Environmental Planning
ESTABLISHED 1982

November 15, 2004

Natural Resource Conservation Service
3530 West Orchard.
Visalia, California 93277

Attention: Joe Williams

RE: Fresno County and Tulare County: Mountain View Avenue/Avenue 416/El Monte Way Road Widening Project -Fresno and Tulare Counties

Dear Mr. Williams:

Please consider this early formal notification of a proposal by Tulare County and Fresno County to acquire land on parcels currently in agricultural use in conjunction with the construction of road widening and intersection improvements. A combined Environmental Impact Report/Environmental Assessment is being prepared for the Mountain View Avenue/Avenue 416/El Monte Way Road Widening Project. Circulation of the Draft EIR/EA is anticipated in the spring of 2005. The CEQA lead agency for the project is the Tulare County Resource Management Agency and the Federal Highway Administration is lead agency for NEPA. Please note that there is currently no identified funding for this project; the earliest anticipated date for commencement of right of way acquisition would be at least five years away.

The attached information has also been provided to the California Department of Conservation and is provided to you to assist you in filling out the Form NRCS-CPA-106. In the attached project description, two alternatives are described; however, Alternative 1 is the Preferred Project Alternative.

The project consists of approximately 12 miles of roadway improvement on the existing Mountain View Avenue/Avenue 416 and El Monte Way within the City of Dinuba. The location and vicinity of the project are shown in Attachment B. The USGS Quad Map locations are as follows:

P.O. Box 160756 ■ Sacramento, California 95816-0756 ■ (916) 739-8356 ■ FAX (916) 739-0626
http://www.PARenvironmental.com

Project Segments		Location
A and B.	Fresno County - Bethel Avenue to Smith Avenue (Road 32 at the County Line)	Selma and Reedley USGS 7.5 min. quads: In Township 16 South, Range 22 E - Sections 10, 11; 10, 13,14, & 15; In Township 16 South, Range 23 E - Sections 7, 8 & 18
C and E.	Tulare County - Road 32 to Road 72 (Dinuba City Limits	Reedley USGS 7.5 min. quad: In Township 16 South, Range 23 E - Sections 8, 9, 10, 11, 12, 13, 14, 15, 16 &17
F.	City of Dinuba - Road 72 to Road 92)	Reedley and Orange Cove So. USGS 7.5 min. quad: In Township 16 South, Range 24 E - Sections 7, 8, 9, 16, 17 & 18

Two alternatives are being considered that vary in the amount of north and south side widening. Both alternatives would affect parcels in agricultural use and some parcels are on farmland classified as prime, unique, statewide or local important. The attached table lists the assessor's parcel numbers of properties that will be affected by right of way acquisition, and those parcels under Williamson Act contract are noted.

The California Department of Conservation has been notified of the project. The following information has been provided to the California Department of Conservation pursuant to Government Code Section 51291(b):

1. Total number of acres: The maximum total number of acres of Williamson Act contracted land proposed for acquisition is approximately 39acres (Alternative 1).

   Prime Agricultural Land: Some of the land to be acquired is considered to be prime agricultural land pursuant to Government Code Section 51201.

   Soils adjacent to the corridor are listed below. The *Soil Survey for the Eastern Fresno Area*, and *Soil Survey of Tulare County, California- Western Part* were consulted to obtain the soil information.

Soil Types Adjacent to Mountain View Avenue and Avenue 416
Fresno County
Hanford Sandy Loam 0-2% slopes
Hanford Fine Sandy Loam 0-2% slopes
Delhi Loamy Sand 0-3% slopes
Delhi Loamy Sand 3-9% slopes
Dello loamy sand 0-2% slopes
Hesperia fine sand loam 0-2% slopes

deep
Pollasky sandy loam 2-9% slopes
Swamp
Tujunga loamy sand 0-3% slopes
Tulare County
Calgro-Calgro, saline-sodic complex 0-2% slopes
Delhi loamy sand 0-2% slopes
Flamen loam, 0-2% slopes
Hanford sandy loam, 0-2% slopes
Nord fine sandy loam, 0-2% slopes
River wash
Tujunga loamy sand 0-3% slopes

Soils listed as prime on the soil survey for Tulare County include *Flamen loam*, *Hanford sandy loam,* and *Nord fine sandy loam*. The soil survey for Fresno County did not provide this information.

2. Purpose of acquisition and why land was identified for acquisition (See project description, **Attachment A**). Neither eminent domain proceedings nor appraisals have commenced since this process must wait until the environmental review has been completed.

3. Project Vicinity and Location Maps are in **Attachment B**

4. Geometric drawings for project alternatives are in **Attachment C**

5. Characteristics of adjacent land are described in **Attachment D**

6. A list of subject properties and the contract numbers are provided in **Attachment E**

7. Findings pursuant to Government Code Section 51292 are provided in **Attachment F**

Please contact me at (916) 739-8356 if I can provide additional information.

Sincerely,
PAR ENVIRONMENTAL SERVICES

Melinda M. Rivasplata

Melinda M. Rivasplata, AICP
Principle Environmental Planner

cc: Marcia Vierra, Tulare County Resource Management Agency, w/o attachments
James May, Fresno County Public Works Department, w/o attachments
Alan Glen, Quincy Engineering, w/o attachments
Gary Maniery, PAR Environmental Services, Inc., w/o attachments

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

RT I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 10/28/04	4. Sheet 1 of _____
1. Name of Project Mountain View Ave/Ave 416 Widening	5. Federal Agency Involved Federal Highway Administration	
2. Type of Project Road widening, irrigation canal relocation	6. County and State Fresno and Tulare Counties California	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☐ NO ☐		4. Acres Irrigated / Average Farm Size
5. Major Crop(s)	6. Farmable Land In Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment _____			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	82	80		
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0	0		
C. Total Acres In Corridor	82	80	0	0
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*				
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points				
1. Area In Nonurban Use — 15				
2. Perimeter In Nonurban Use — 10				
3. Percent Of Corridor Being Farmed — 20				
4. Protection Provided By State And Local Government — 20				
5. Size of Present Farm Unit Compared To Average — 10				
6. Creation Of Nonfarmable Farmland — 25				
7. Availablility Of Farm Support Services — 5				
8. On-Farm Investments — 20				
9. Effects Of Conversion On Farm Support Services — 25				
10. Compatibility With Existing Agricultural Use — 10				
TOTAL CORRIDOR ASSESSMENT POINTS — 160	0	0	0	0
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) — 100				
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)* — 260	0	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

(1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

(2) How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?
More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
Site is protected - 20 points
Site is not protected - 0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with $1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?
Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?
Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

PAR ENVIRONMENTAL SERVICES, INC.

Cultural Resource Management ■ Biology ■ Environmental Planning

ESTABLISHED 1982

August 8, 2001

Debbie Pilas-Treadway
Native America Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

RE: CULTURAL RESOURCES INVESTIGATION FOR THE AVENUE 416 WIDENING PROJECT, TULARE AND FRESNO COUNTIES, CALIFORNIA (PAR Ref. No. 01-905).

Dear Ms. Pilas Treadway:

The Counties of Tulare and Fresno, as well as the City of Dinuba (within Tulare County), are proposing to widen Avenue 416 from a two-lane to a four-lane road. The proposed work will extend from Road 92, just west of the City of Dinuba, to a point approximately four miles east of the Tulare/Fresno county line. PAR Environmental Services, Inc. (PAR) has contracted with Quincy Engineering, Inc. to conduct Section 106 and California Environmental Quality Act (CEQA) compliance documentation for this project. As part of this study, PAR is assessing potential impacts to cultural resources in the project area. All work is at a survey/inventory level; no excavation is involved at this time. The location of the project is depicted in Figures 1 and 2.

PAR would appreciate any background information regarding prehistoric, historic or ethnographic sites that you can provide about this project area. We are interested in Native American or local community concerns regarding cultural resources already known or likely to be present within the project. We would also appreciate a list of contacts for the area we are studying.

If you have any questions or comments, please do no hesitate to call me at PAR.

Sincerely,

PAR ENVIRONMENTAL SERVICES, INC.

Tracy D. Bakic
Cultural Resources Specialist

Enclosures

cc: Melinda Rivasplata, PAR
Mary L. Maniery, PAR

P.O. Box 160756 ■ Sacramento, California 95816-0756 ■ (916) 739-8356 ■ FAX (916) 739-0626
http://www.PARenvironmental.com

PAR ENVIRONMENTAL SERVICES, INC.
Cultural Resource Management ■ Biology ■ Environmental Planning
ESTABLISHED 1982

November 15, 2004

California Department of Conservation
Division of Land Resource Protection
801 K Street, MS 18-01
Sacramento, CA 95814-3528

Attention: Bob Blanford

RE: Fresno County and Tulare County: Mountain View Avenue/Avenue 416/El Monte Way Road Widening Project –Fresno and Tulare Counties

Dear Mr. Blanford:

Please consider this early formal notification of a proposal by Tulare County and Fresno County to acquire land in conjunction with the proposed construction of road widening and intersection improvements on parcels currently within Agricultural Preserves and under Williamson Act Contract. A combined Environmental Impact Report/Environmental Assessment is being prepared for the Mountain View Avenue/Avenue 416/El Monte Way Road Widening Project. Circulation of the Draft EIR/EA is anticipated in the spring of 2005. The CEQA lead agency for the project is the Tulare County Resource Management Agency and the Federal Highway Administration is lead agency for NEPA. Please note that there is currently no identified funding for this project; the earliest anticipated date for commencement of right of way acquisition would be at least five years away.

The proposed project consists of approximately 12 miles of roadway improvement on the existing Mountain View Avenue/Avenue 416 in Fresno/Tulare counties and El Monte Way within the City of Dinuba. The location and vicinity of the project are shown in Attachment B. The USGS Quad Map locations are as follows:

P.O. Box 160756 ■ Sacramento, California 95816-0756 ■ (916) 739-8356 ■ FAX (916) 739-0626
http://www.PARenvironmental.com

Project Segments		Location
A and B.	Fresno County – Bethel Avenue to Smith Avenue (Road 32 at the County Line)	Selma and Reedley USGS 7.5 min. quads: In Township 16 South, Range 22 E - Sections 10, 11; 10, 13,14, & 15; In Township 16 South, Range 23 E – Sections 7, 8 & 18
C and E.	Tulare County – Road 32 to Road 72 (Dinuba City Limits	Reedley USGS 7.5 min. quad: In Township 16 South, Range 23 E – Sections 8, 9, 10, 11, 12, 13, 14, 15, 16 &17
F.	City of Dinuba – Road 72 to Road 92)	Reedley and Orange Cove So. USGS 7.5 min. quad: In Township 16 South, Range 24 E – Sections 7, 8, 9, 16, 17 & 18

Two alternatives are being considered that vary in the amount of north and south side widening. Both alternatives would affect parcels in Agricultural Preserves and under Williamson Act Contracts. The attached table lists the assessor's parcel numbers of properties that will be affected by right of way acquisition, and those parcels under Williamson Act contract are noted. Only those parcels under Williamson Act Contract are in Agricultural Preserves.

As required, the following information is provided pursuant to Government Code Section 51291(b):

1. Total number of acres: The maximum total number of acres of Williamson Act contracted land to be acquired is approximately 39 acres under the preferred project alternative (Alternative 1).

   Prime Agricultural Land: Some of the land to be acquired is considered to be prime agricultural land pursuant to Government Code Section 51201.

   The United States Department of Agriculture National Resources Conservation Service (NRCS) was notified of the proposed project. Soils adjacent to the corridor are listed below. The *Soil Survey for the Eastern Fresno Area*, and *Soil Survey of Tulare County, California- Western Part* were consulted to obtain the soil information.

Soil Types Adjacent to Mountain View Avenue and Avenue 416
Fresno County
Hanford Sandy Loam 0-2% slopes
Hanford Fine Sandy Loam 0-2% slopes
Delhi Loamy Sand 0-3% slopes
Delhi Loamy Sand 3-9% slopes

Dello loamy sand 0-2% slopes
Hesperia fine sand loam 0-2% slopes
Hesperia fine sandy loam, moderately deep
Pollasky sandy loam 2-9% slopes
Swamp
Tujunga loamy sand 0-3% slopes
Tulare County
Calgro-Calgro, saline-sodic complex 0-2% slopes
Delhi loamy sand 0-2% slopes
Flamen loam, 0-2% slopes
Hanford sandy loam, 0-2% slopes
Nord fine sandy loam, 0-2% slopes
River wash
Tujunga loamy sand 0-3% slopes

Soils listed as prime on the soil survey for Tulare County include *Flamen loam*, *Hanford sandy loam*, and *Nord fine sandy loam*. The soil survey for Fresno County did not provide this information.

2. Purpose of acquisition and why land was identified for acquisition (See project description, **Attachment A**). Neither eminent domain proceedings nor appraisals have commenced since this process must wait until the environmental review has been completed.

3. Project Vicinity and Location Maps are in **Attachment B**

4. Geometric drawings for project alternatives are in **Attachment C** (note: page numbering is set up for the EIR Appendix A)

5. Characteristics of adjacent land are described in **Attachment D**

6. A list of subject properties and the contract numbers are provided in **Attachment E.** (Neither eminent domain proceedings nor appraisals can commence until the environmental review process has been completed. *For this reason detailed information regarding right-of-way acquisition on a parcel-by-parcel basis is confidential.*)

7. Findings pursuant to Government Code Section 51292 are provided in **Attachment F**

Please contact me at (916) 739-8356 if I can provide additional information.

Sincerely,

Melinda M. Rivasplata, AICP
Principle Environmental Planner

cc: Marcia Vierra, Tulare County Resource Management Agency, w/ attachments
James May, Fresno County Public Works Department, w/ attachments
Alan Glen, Quincy Engineering, w/ attachments
Gary Maniery, PAR Environmental Services, Inc., w/o attachments

APPENDIX H
Biology

Table H-1. Regional Plant Species of Concern Potentially Occurring in the Vicinity of Mountain View Avenue/Avenue 416/El Monte Way Widening Project Area, Fresno and Tulare Counties *(from USFWS list #1-1-01-SP-3044, CNPS 2001)*

Common Name *Scientific Name*	Status Fed/State/CNPS	General Habitat Description	Habitat Present/ Absent	Rationale
Ramshaw Meadows abronia *Abronia alpina*	C/-/1B	Gravelly margins of alpine meadows	A	Out of range
Obovate-leaved thornmint *Acanthomintha obovata ssp. obovata*	SC/-/1B	Heavy clay, valley grassland, chaparral west side of valley	A	Out of range, no appropriate soils or habitat
Forked fiddlenect *Amsinckia vernicosa* var. *furcata*	SC/-/1B	Oak woodland, valley grassland, west side of valley	A	No appropriate habitat
Bodie Hills rock cress *Arabis bodiensis*	SC/-/1B	Great basin scrub	A	Out of range
Raven's milk-vetch *Astragalus monoensis* var. *ravenii*	SC/-/1B	Alpine and coniferous forest	A	Out of range
Heartscale *Atriplex cordulata*	SC/1/1B	Chenopod scrub, playas, alkaline, saline, or clay	A	No appropriate soils or habitat
Brittlescale *Atriplex depressa*	-/-/1B	Chenopod scrub, playas, alkaline or clay	A	No appropriate soils or habitat
San Joaquin spearscale *Atriplex joaquiniana*	SC/-/1B	Chenopod scrub, playas, alkaline or clay	A	No appropriate soils or habitat
Lesser saltscale *Atriplex minuscule*	-/-/1B	Chenopod scrub, playas, alkaline or clay	A	No appropriate soils or habitat
Vernal pool saltbush *Atriplex persistens*	SC/-/1B	Chenopod scrub, playas, alkaline or clay	A	No appropriate soils or habitat
Scalloped moonwort *Botrychium crenulatum*	SC/-/2	Meadows, bogs, marsh, coniferous forest	A	Out of range
Kaweah brodiaea *Brodiaea insignis*	SC/E/1B	Cismontane woodland, valley and foothill grassland, granitic or clay; elevation 150-1400 meters; known only from Tule and Kaweah River drainages	A	Occurs at higher elevations, and no suitable soils or habitat

Table H-1. Regional Plant Species of Concern Potentially Occurring in the Vicinity of Mountain View Avenue/Avenue 416/El Monte Way Widening Project Area, Fresno and Tulare Counties *(from USFWS list #1-1-01-SP-3044, CNPS 2001) (continued)*

Common Name *Scientific Name*	Status Fed/State/CNPS	General Habitat Description	Habitat Present/ Absent	Rationale
Shirley Meadows star-tulip *Calochortus westonii*	SC/-/1B	Meadow, lower coniferous forest	A	Out of range
Mariposa pussypaws *Calyptridium pulchellum*	T/-/1B	Sandy oak woodlands	A	No appropriate habitat
San Benito evening-primrose *Camissonia benitensis*	T/-/1B	Serpentine, oak woodlands	A	No appropriate soils or habitat
Tree-anemone *Carpenteria californica*	SC/T/1B	Chaparral	A	No appropriate habitat
Succulent owl's-clover *Castilleja campestris ssp. succulenta*	T/E/1B	Vernal pools and seasonal wetlands	A	No appropriate habitat
California jewelflower *Caulanthus californicus*	E/E/1B	Chenopod scrub, juniper woodland, valley grassland	A	No appropriate habitat
Hoover's spurge *Chamaesyce hooveri*	T/-/1B	Vernal pools and playa	A	No appropriate habitat
Springville clarkia *Clarkia springvillensis*	T/E/1B	Chaparral, oak woodland, valley grassland	A	No appropriate habitat
Palmate-bracted bird's-beak *Cordylanthus palmatus*	E/E/1B	Chenopod scrub, alkaline vernal pools	A	No appropriate habitat
Recurved larkspur *Delphinium recurvatum*	SC/-/1B	Chenopod scrub, alkaline grassland	A	No appropriate habitat
Pierpoint Springs dudleya *Dudleya cymosa* ssp. *costafolia*	SC/-/1B	Chaparral, oak woodland, Limestone outcrops	A	No appropriate habitat
Hoover's eriastrum *Eriastrum hooveri*	T/-/1B	Chenopod scrub, valley grassland	A	No appropriate habitat

Table H-1. Regional Plant Species of Concern Potentially Occurring in the Vicinity of Mountain View Avenue/Avenue 416/El Monte Way Widening Project Area, Fresno and Tulare Counties *(from USFWS list #1-1-01-SP-3044, CNPS 2001) (continued)*

Common Name ***Scientific Name***	**Status Fed/State/CNPS**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
Kern River daisy *Erigeron multiceps*	SC/-/1B	Meadows, coniferous forest	A	Out of range
Mouse buckwheat *Eriogonum nudum* var. *murinum*	SC/-/1B	Sandy soils in valley grassland, chaparral	A	No appropriate habitat
Twisselmann's buckwheat *Eriogonum twisselmannii*	SC/R/1B	Upper coniferous forest	A	Out of range
Spiny-sepaled button-celery *Eryngium spinosepalum*	SC/-/1B	Valley grassland, vernal pools	A	No appropriate habitat
Striped adobe-lily *Fritillaria striata*	SC/T/1B	Oak woodland valley grassland, clay soil	A	Not present, no appropriate habitat
Boggs Lake hedge-hyssop *Gratiola heterosepala*	-/E/1B	Vernal pools, seasonal wetlands	A	Not present, no appropriate habitat
Kern Plateau horkelia *Horkelia tularensis*	SC/-/1B	Coniferous forest	A	Not present, out of range
Father Crowley's lupine *Lupinus padre-crowleyi*	SC/R/1B	Great basin scrub, riparian forest, east side of Sierra	A	Not present, out of range
Flax-like monardella *Monardella linoides* ssp. *oblonga*	SC/-/1B	Coniferous forest	A	Not present, out of range
San Joaquin wooly threads *Monolopia congdonii*	E/-/1B	Chenopod scrub, valley grassland	A	Not present, no appropriate habitat
Piute Mtns. Navarretia *Navarretia setiloba*	SC/-/1B	Valley grassland, oak woodland, juniper woodland	A	Not present, no appropriate habitat
Twisselmann's nemacladus *Nemacladus twisselmannii*	SC/R/1B	Coniferous forest	A	Not present, out of range
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	T/E/1B	Vernal pools, playas	A	Not present, no appropriate habitat

Table H-1. Regional Plant Species of Concern Potentially Occurring in the Vicinity of Mountain View Avenue/Avenue 416/El Monte Way Widening Project Area, Fresno and Tulare Counties *(from USFWS list #1-1-01-SP-3044, CNPS 2001) (concluded)*

Common Name *Scientific Name*	Status Fed/State/CNPS	General Habitat Description	Habitat Present/ Absent	Rationale
Charlotte's phacelia *Phacelia nashiana*	SC/E/1B	Juniper woodland, Desert scrub	A	Not present, out of range
Nine Mile Canyon phacelia *Phacelia novenmillensis*	SC/-/1B	Coniferous forest, oak woodland, Juniper woodland	A	Not present, out of range
Hartweg's golden sunburst *Pseudobahia bahiifolia*	E/E/1B	Valley grassland, oak woodland, clay soil	A	Not present, no appropriate habitat
San Joaquin adobe sunburst *Pseudobahia peirsonii*	T/E/1B	Valley grassland, oak woodland, clay soil	A	Not present, no appropriate habitat
Sequoia gooseberry *Ribes tularense*	SC/-/1B	Coniferous forest	A	Not present, out of range.
Sanford's arrowhead *Sagitarria sanfordii*	-/-/1B	Marshes and swamps	P	Project canals could support this species
Keck's checkerbloom *Sidalcea keckii*	PE/-/1B	Grassland and oak woodland, serpentine	A	No appropriate habitat
Greene's tuctoria *Tuctoria greenei*	E/R/1B	Vernal pools, playas	A	No appropriate habitat

Status codes:

CNPS 1A = California Native Plant Society list of plants presumed extinct.
CNPS 1B = California Native Plant Society list of plants rare, threatened or endangered in California and elsewhere
CNPS 2 = California Native Plant Society list of plants rare, threatened or endangered in California, but more common and elsewhere
CNPS 3 = California Native Plant Society list of plants about which we need more information – A review list.
CA: E = State of California listed as Endangered
CA: R = State of California listed as Rare
CA: T = State of California listed as Threatened
Fed: SC = USFWS species of special concern.
Fed: E = USFWS listed as Endangered
Fed: T = USFWS listed as Threatened

Table H-2. Regional Wildlife Species of Concern Potentially Occurring in the Vicinity of the Mountain View Avenue/Avenue 416/El Monte Way Widening Project Area, Fresno and Tulare Counties (from USFWS list #1-1-01-SP-3044)

Species	**Status Fed/State**	Preferred Habitat	**Habitat Present/** *Absent*	Rationale
BIRDS				
American peregrine falcon *Falco peregrinus anatum*	E/E	Nests and roosts on protected ledges of high cliffs, usually near areas supporting large populations of other bird species	A	No suitable nesting or foraging habitat
Bald eagle *Haliaeetus leucocephalus*	T/E	Ocean shorelines, lake margins and river courses	A	No suitable nesting or foraging habitat at the project site
Bell's sage sparrow *Amphispiza belli belli*	SC/CSC	Prefers chaparral habitat dominated by chamise	A	No suitable habitat in or near the project area
Cooper's hawk *Accipiter cooperii*	--/CSC	Nests in oak woodland and riparian forests	P	Could nest and forage in riparian habitat along the Kings River
Ferruginous hawk *Buteo regalis*	SC/--	Forages in open terrain in plains and foothills where ground squirrels and other prey are available	A	Could use annual grassland at project site for foraging in winter, although habitat is marginal; low potential to occur at site.
Greater sandhill crane *Grus canadensis tabida*	--/T	Summers in open terrain near shallow lakes or freshwater marshes; winters in plains and valleys near bodies of water	A	No suitable habitat in project area
Lewis' woodpecker *Melanerpes lewis*	SC	Deciduous woodland or coniferous forest; often associated with oaks	P	Low potential to occur in Kings River riparian habitat
Little willow flycatcher *Empidonax traillii*	SC/E	Breeds in large, wet mountain meadows with scattered willow thickets; uses riparian woodland in lowlands during migration	P	Moderate potential to occur as migrant in riparian habitat at Kings River; no breeding habitat present
Loggerhead shrike *Lanius ludovicianus*	SC/	Prefers open habitats (washes, ravines, mesas) with scattered shrubs, trees, posts, fences, or other perches	P	Low potential to nest and forage in project area
Long-billed curlew *Numenius americanus*	SC	Nests at high-elevation grasslands near lakes; in winter, frequents coastal beaches and mudflats or interior grasslands and agricultural fields	P	Low potential to occur as winter visitor to agricultural fields near the project area

Table H-2. Regional Wildlife Species of Concern Potentially Occurring in the Vicinity of the Mountain View Avenue/Avenue 416/El Monte Way Widening Project Area, Fresno and Tulare Counties (from USFWS list #1-1-01-SP-3044) (*continued*)

Species	**Status Fed/State**	Preferred Habitat	**Habitat Present/** Absent	Rationale
BIRDS				
Mountain plover *Charadrius montanus*	PT/CSC	Occupies open plains or rolling hills with short grasses or sparse vegetation; also uses newly plowed fields	P	Low potential to occur as winter visitor to agricultural fields at project site.
Northern goshawk **Accipiter gentilis**	SC/CSC	Nests and roosts in older stands of red fir, Jeffrey pine, and lodgepole pine forests	A	No suitable habitat
Rufous hummingbird *Selasphorus rufus*	SC	All sorts of terrain providing melliferous flowers, including lowland stream bottoms, foothill brushland and chaparral, up to timberline	P	Moderate potential to occur in landscaped parks and yards in project area
Swainson's hawk *Buteo swainsoni*	-/T	Nests in oaks or cottonwoods near riparian areas, forages in grassland, irrigated pasture and agricultural fields	P	Moderate potential to forage in row crops and agricultural fields of project area; low potential for nesting in trees along Kings River
Tricolored blackbird *Agelaius tricolor*	SC/CSC	Nests in emergent marsh and other wetlands; forages in wetlands, agricultural fields, pastures	A	No suitable nesting habitat in project area; freshwater marsh along Kings River in project area is too small and patchy to support nesting; absent
White-faced ibis *Plegadis chihi*	SC/SSC	Prefers freshwater marshes with tules, cattails, and rushes, may nest in trees and forage in flooded agricultural fields	A	No suitable nesting habitat in project area; freshwater marsh along Kings River in project area is too small and patchy to support nesting; absent
White-tailed kite *Elanus leucurus*	SC/	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	P	Low potential to nest in riparian habitat along Kings River, could forage in agricultural fields in project area.

Table H-2. Regional Wildlife Species of Concern Potentially Occurring in the Vicinity of the Mountain View Avenue/Avenue 416/El Monte Way Widening Project Area, Fresno and Tulare Counties (from USFWS list #1-1-01-SP-3044) (*continued)*

Species	Status Fed/State	Preferred Habitat	Habitat Present/ Absent	Rationale
BIRDS				
Western burrowing owl *Athene cunicularia hypugea*	SC/CSC	**Nests in burrows in sparse grassland, especially old ground squirrel burrows**	P	**Moderate potential to nest in ground squirrel burrows in the bank of project area canals**
MAMMALS				
San Joaquin kit fox *Vulpes macrotis mutica*	E/T	Annual grassland or grassy open stages with scattered shrubby vegetation;	P	Could occur in project area, although foraging and denning habitat is marginal
Fresno kangaroo rat *Dipodymys nitratoides exilis*	E/	Found in alkali sink habitats with seepweed, iodine bush, saltbush, pepper-grass, filaree, wild oats, and foxtail fescue.	A	Out of range, no suitable habitat.
Tipton kangaroo rat *Dipodymys nitratoides nitratoides*	E/E	Found from 61 to 91 m (200 to 300 ft) in arid grasslands and alkali desert scrub with sparsely scattered shrubs; soil usually finely textured and alkaline; occurs in Tulare Lake Basin in portions of Fresno, Tulare, and Kern counties	A	Out of range, no suitable habitat
San Joaquin pocket mouse **Perognathus inornatus**	SC/--	Prefers grasslands and oak savannas with friable soils	A	No records in or near the project area, no suitable habitat
Southern grasshopper mouse **Onychomys torridus ramona**	SC/CSC	Grassland and chaparral habitats in San Bernardino, northern Los Angeles, western Riverside, and San Diego counties	A	Out of range and no suitable habitat
Pacific western big-eared bat *Corynorhinus townsendii townsendii*	SC/-	Roosts in caves, tunnels, mines, and dark attics of abandoned buildings	P	Known to occupy bridges, could inhabit Kings River Bridge
Pale big-eared bat *Corynorhinus townsendii pallescens*	SC/CSC	Mesic habitats; gleans insects from brush or trees and feeds along habitat edges	P	Known to occupy bridges, could inhabit Kings River Bridge
Greater western mastiff-bat *Eumops perotis californicus*	SC/CSC	Roosts and breeds in deep narrow rock crevices; forages in semi-arid habitats	P	Moderate potential to occur at site

Table H-2. Regional Wildlife Species of Concern Potentially Occurring in the Vicinity of Mountain View Avenue/Avenue 416/El Monte Way Widening Project Area, Fresno and Tulare Counties *(Continued)*

Species	Status Fed/State	Preferred Habitat	Habitat Present/ Absent	Rationale
MAMMALS				
Pallid bat *Antrozous pallidus*	SC/CSC	**Rocky outcrops, cliffs, crevices for roosting; access to open habitats for foraging**	P	**Known to occupy bridges, could inhabit Kings River Bridge**
Small-footed myotis bat *Myotis ciliolabrum*	SC/-	**Open stands in forests and woodlands, as well as shrublands**	P	**Moderate potential to occur at site**
Spotted bat *Euderma maculata*	SC	Roosts primarily in rock crevices; uses arid deserts and open pine forests set in rocky terrain	P	Low potential to occur at site
Long-eared myotis bat *Myotis evotis*	SC/-	Coniferous forests, woodlands; sometimes inhabit sheds, cabins and bark beneath trees	P	Low potential to occur at site
Fringed myotis bat *Myotis thysanodes*	SC/-	Oak, pinon, and juniper and desert scrub of the southwest	P	Known to occupy bridges, could inhabit Kings River Bridge
Yuma myotis bat *Myotis yumanensis*	SC/-	Selects habitats with open water nearby	P	Known to occupy bridges, could inhabit Kings River Bridge
Long-legged myotis bat *Myotis volans*	SC/-	Most common in woodlands and forests above 122 m (4,000 ft); maternity colonies form in buildings, rock crevices and trees	P	Known to occupy bridges, could inhabit Kings River Bridge
AMPHIBIANS AND REPTILES				
California red-legged frog *Rana aurora draytonii*	T/CSC	Marshes, slow-moving water; prefers areas with good plant cover	P	No recent records in or near the project area; only suitable habitat are backwater pools on the southwest bank of the Kings River
Alameda whipsnake *Masticophis lateralis euryxanthus*	PE*/T	Valley foothill hardwood habitat of the coast ranges	A	No nearby or recent records, no suitable habitat on or near project site
Blunt-nosed leopard lizard *Gambelia (=Crotaphytus) sila*	E/E	Open habitats with scattered low shrubs on alkali flats, low foothills	A	No nearby or recent records, no suitable habitat on or near project site

Table H-2. Regional Wildlife Species of Concern Potentially Occurring in the Vicinity of Mountain View Avenue/Avenue 416/El Monte Way Widening Project Area, Fresno and Tulare Counties *(Continued)*

Species	Status Fed/State	Preferred Habitat	Habitat Present/ Absent	Rationale
		AMPHIBIANS AND REPTILES		
California horned lizard *Phrynosoma coronatum frontale*	SC/CSC	**Grasslands, brushlands, woodlands, and open coniferous forests with sandy or loose soil**	A	**No nearby or recent records, no suitable habitat on or near project site**
California tiger salamander *Ambystoma californiense*	C/CSC	**Vernal pools, seasonal ponds in annual grasslands and foothill hardwood habitat**	A	**No pools or seasonal ponds in project area, Kings River and canals do not provide suitable habitat**
Foothill yellow-legged frog *Rana boylii*	SC/SSC	Creeks or rivers in woodland or forests with rock and gravel substrate and low overhanging vegetation up to 1,829 m (6,000 ft); usually found near riffles with rocks and sunny banks nearby	A	Kings River and canals do not provide suitable habitat
Giant garter snake **Thamnopis gigas**	T/T	Occurs in waterways where small fish and amphibians provide prey base; needs grassy banks and emergent vegetation as well as high ground protected from flooding during winter	A	No historical or current records from project vicinity; no suitable habitat in canals or Kings River
Southwestern pond turtle *Clemmys marmorata pallida*	SC/CSC	Ponds, marshes, streams, irrigation canals with aquatic vegetation, cover, and basking sites	P	Canals in project area may provide seasonal foraging and basking habitat; limited habitat in Kings River
Northwestern pond turtle *Clemmys marmorata marmorata*	SC/CSC	Ponds, marshes, streams, irrigation canals with aquatic vegetation, cover, and basking sites	P	Canals in project area may provide seasonal foraging and basking habitat; limited habitat in Kings River
San Joaquin coachwhip (=whipsnake) *Masticophis flagellum Ruddocki*	SC/CSC	Scrublands broken by scattered grassy patches, rocky hillsides, stream courses	A	No nearby records, no suitable habitat in or near project site
Western spadefoot toad *Scaphiopus hammondi*	SC/SSC	Shallow streams with riffles and seasonal wetlands such as vernal pools in annual grasslands and oak woodlands	A	No suitable streams or seasonal wetlands in project area

Table H-2. Regional Wildlife Species of Concern Potentially Occurring in the Vicinity of Mountain View Avenue/Avenue 416/El Monte Way Widening Project Area, Fresno and Tulare Counties *(concluded)*

Species	Status Fed/State	Preferred Habitat	Habitat Present/ Absent	Rationale
FISH				
Delta smelt *Hyposmesus transpacificus*	T/T	Estuarine waters of the San Joaquin-Sacramento Delta	A	No suitable habitat in project area; absent.
Kern brook lamprey **Lampetra hubbsi**	SC/	Silty backwaters of large rivers; has been found in lower reaches of Merced, Kaweah, Kings, and San Joaquin rivers	A	Range and habitat poorly known, but no current or historical records
Sacramento splittail *Pogonichthys macrolepidotus*	PT/CSC-	Slow-moving stretches of Delta and Central Valley rivers	A	No suitable habitat in project area; absent
Longfin smelt *Spirinchus thaleichthys*	SC/CSC	Occur in salt and brackish water of estuaries	A	No suitable habitat in project area; absent
INVERTEBRATES				
Molestan blister beetle *Lyta molesta*	SC/-	Vernal pools in San Joaquin Valley	A	No seasonal wetlands, pools, or long-standing rain puddles in or near project site; no potential for occurrence.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/-	Riparian and oak savanna habitats with elderberry shrubs	P	Elderberries present in Kings River riparian habitat, and 1991 record for exit holes in elderberries at the site; high potential for occurrence
California linderiella *Linderiella occidentalis*	SC/-	Vernal pools and other seasonal freshwater wetlands	A	No seasonal wetlands, pools, or long-standing rain puddles in or near project site
Midvalley fairy shrimp *Branchinecta vallensis*	SC/	Vernal pools and other seasonal freshwater wetlands	A	No seasonal wetlands, pools, or long-standing rain puddles in or near project site
Longhorn fairy shrimp *Branchinecta longiantenna*	E/-	Vernal pools and other seasonal freshwater wetlands	A	No seasonal wetlands, pools, or long-standing rain puddles in or near project site
Vernal pool fairy shrimp *Branchinecta lynchi*	T/-	Vernal pools and other seasonal freshwater wetlands	A	No seasonal wetlands, pools, or long-standing rain puddles in or near project site

Key: FEDERAL
E = Endangered Listed in the Federal Register as being in danger of extinction
T = Threatened Listed likely to become endangered within the foreseeable future
P= Proposed Officially proposed (in the Federal Register) for listing as endangered or threatened
C = Candidate Candidate to become a proposed species

SC = Species of Concern May be endangered or threatened. Not enough biological information has been gathered to support listing at this time
PE = Proposed endangered
* = Possibly extirpated from this quad
STATE E = Endangered Listed as endangered under the California Endangered Species Act
T = Threatened Listed as threatened under the California Endangered Species Act
CSC = California Species of Special Concern

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: Ave 416 - Kings River City/County: Tulare Sampling Date: April 30 07

Applicant/Owner: County of Tulare / CalTrans State: CA Sampling Point: #1

Investigator(s): Virginia Bains Section, Township, Range: _____

Landform (hillside, terrace, fan, etc.): Flood plain Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): C Lat: 36 32' 45.76905 N Long: 119 29' 12.03451 W Datum: WGS 1984

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____
Hydric Soil Present?	Yes X	No _____
Wetland Hydrology Present?	Yes X	No _____

Is the Sampled Area within a Wetland? Yes X No _____

Remarks:
Extremely low rainfall year

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	30	X	OBL
2.			
3.			
4.			
Total Cover:	30		
Sapling/Shrub Stratum			
1. None			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum Relative Cover			
1. Stachys ~~bullata~~ ajugoides	60	X	OBL
2. Euthamia occidentalis	T		OBL
3. Urtica dioica	5		FACW
4. Phalaris arundinacea	35	X	OBL
5. Polygonum hydropiper	T		OBL
6. ~~Sisymbrium~~ ine	T		
7. Barbarea orthoceras	T		FACW
8.			
9.			
Total Cover:	100		
Woody Vine Stratum			
1. None			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 60% % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ~~75~~ 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: #1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR3/2	85	10YR4/4	15	RM	M	loamy Sand (Fine)	
7-13	10YR 4/3	100%					loamy Sand (Fine)	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ Red Parent Material (TF2)
- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

> 4" of distinct mottles

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)**(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3)**(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation on Aerial Imagery (B7)
- ___ Water-stained Leaves (B8)
- ___ Biotic Crust (B10)
- ___ Aquatic Invertebrates (B11)
- ___ Crayfish Burrows (B12)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C2)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ Muck Surface (C7)
- ___ Saturation on Aerial Imagery (C8)
- ___ Shallow Aquitard (D4)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- X Sediment Deposits (B2) **(Riverine)**
- X Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B9)
- ___ Dry Season Water Table (C3)
- ___ Salt Deposits (C5)
- ___ ~~Mud Casts (C9)~~
- ___ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): >13"

Water Table Present? Yes ___ No X Depth (inches): >13"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >13"

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Evidence for some flooding this year found under ground vegetation

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: Ave 416 – Kings River City/County: Tulare Sampling Date: April 30 '07

Applicant/Owner: County of Tulare - CalTrans State: CA Sampling Point: #2

Investigator(s): Virginia Pains Section, Township, Range: _____

Landform (hillside, terrace, fan, etc.): Flood plain Local relief (concave, convex, none): convex Slope (%): _____

Subregion (LRR): C Lat: 36°32'48.47221 N Long: 119°29'12.01976 W Datum: WGS1984

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)

Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation NO, Soil NO, or Hydrology NO naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ~~X~~	No _____	Is the Sampled Area within a Wetland? Yes X No _____
Hydric Soil Present?	Yes _____	No _____	
Wetland Hydrology Present?	Yes _____	No _____	

Remarks:
Extremely dry rainfall year

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Juncus effusis	5		OBL
2. Eleocharis occidentalis	25	X	OBL
3. Gnaphalium palustre	T		FACW
4. Urtica dioica	15		FACW
5. Polypogon monspeliensis	30	X	FACW
6. Polygonum lapathifolium	15		OBL
7. Conyza sp.	T		–
8. Agrostis	15		
9.			
Total Cover:	100 (70)		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 30% % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: #2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 6/2	70	10YR 4/6	30	RM	M/RC	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ Red Parent Material (TF2)
- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

>4" of distinct mottles

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)(**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3)(**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation on Aerial Imagery (B7)
- ___ Water-stained Leaves (B8)
- ___ Biotic Crust (B10)
- ___ Aquatic Invertebrates (B11)
- ___ Crayfish Burrows (B12)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C2)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ Muck Surface (C7)
- ___ Saturation on Aerial Imagery (C8)
- ___ Shallow Aquitard (D4)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B9)
- ___ Dry Season Water Table (C3)
- ___ Salt Deposits (C5)
- ___ Mud Casts (C9)
- ___ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Some drift deposits maybe from previous water years.

WETLAND DETERMINATION DATA FORM – Arid West Region (DRAFT)

Project/Site: Ave 416 - Kings River City/County: Tulare Sampling Date: April 30 '07
Applicant/Owner: County of Tulare - Cal Trans State: CA Sampling Point: #3
Investigator(s): Virginia Dains Section, Township, Range: _____
Landform (hillside, terrace, fan, etc.): Levee bank Local relief (concave, convex, none): Convex Slope (%): 20
Subregion (LRR): C Lat: 36°32'47.70219"N Long: 119.29'10.33042"W Datum: WGS 1984
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X
Are Vegetation NO, Soil NO, or Hydrology NO naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: Extremely dry rainfall year

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Sorgum jalapense	~~15~~ 60%	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
Total Cover: 10			
Woody Vine Stratum			
1. Rubus discolor	~~10~~ (40%)	X	FAC
2.			
Total Cover:			

% Bare Ground in Herb Stratum 75% % Cover of Biotic Crust _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species	40	x 3 = 120
FACU species	60	x 4 = 240
UPL species		x 5 =
Column Totals:	100 (A)	360 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Both dominants are perennials - not as affect by low rainfall year as annuals

SOIL

Sampling Point: #3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 3/3	100					loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ Red Parent Material (TF2)
- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks:

No evidence for saturation

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)**(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3)**(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation on Aerial Imagery (B7)
- ___ Water-stained Leaves (B8)
- ___ Biotic Crust (B10)
- ___ Aquatic Invertebrates (B11)
- ___ Crayfish Burrows (B12)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C2)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ Muck Surface (C7)
- ___ Saturation on Aerial Imagery (C8)
- ___ Shallow Aquitard (D4)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B9)
- ___ Dry Season Water Table (C3)
- ___ Salt Deposits (C5)
- ___ Mud Casts (C9)
- ___ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence for saturation

Routine Wetland Delineation Data Form

Applicant: Cal Trans	Project: Ave 416	Observer: Virginia Dains
State: CA	County: Tulare	T16S R23E Sec 8 and 17
Date: October 22, 2001	Data Point : 1B	

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed? Yes
Is the area a potential Problem Area? No

Vegetation						
Status	**Strata**	**Cover**	**Status**	**Species**	**Strata**	**Cover**
Juncus effusis	Herb	>20	OBL			
Polygonum hydropiperoides	Herb	>20	OBL			

% of dominant species that are OBL, FACW, and/or FAC: 100%
Other Indicators:
Hydrophytic vegetation present? yes
Basis? > 50% fac, facw, obl

Soil			
Map Unit: Riverwash			Subgroup: not classified
Field Observations: stratified sand and silt			
Depth	Texture	Color (Matrix/mottle)	Notes
8"	silt	10YR4/2 with 7.5YR ¾ mottle	Finer grained material showes bright mottling

Hydric soil Indicators: __ Histosol __ Histic epipedon __ Sulfidic Odor __ Aquic moisture regime
__ Reducing conditions __ Gleyed or low-chroma colors __ Concretions
__ High o.c. in surface layer in sandy soils __ Organic streaking in sandy soils __
__ Listed on local hydric soils list Listed on national hydric soils list

Hydric Soils Present? yes	Basis?: evidence for reducing conditions

Hydrology		
Inundated? no	Depth of standing water:	Note: Observation of standing water in aerial photograph
Saturated? Yes	Depth to saturated soil: 10"	

Other primary indicators: __ Water marks __ Drift lines _xx_Sediment deposits
_xx_Drainage patterns in wetlands

Secondary indicators: __ Oxidized rhizospheres in upper 12" _xx_ Water-stained leaves
__ Local soil survey data FAC_Neutral test

Wetland Hydrology present? yes	Basis: evidence for long duration saturation

Wetland Determination

Is this data point in a wetland? yes
Reason?: all three criteria are met.

Routine Wetland Delineation Data Form

Applicant: Cal Trans	Project: Ave 416	Observer: Virginia Dains
State: CA	County: Tulare	T16S R23E Sec 8 and 17
Date: October 22, 2001	Data Point : 1 A	

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed? Yes
Is the area a potential Problem Area? No

Vegetation

Species	Strata	Cover	Status	Species	Strata	Cover	Status
Salix gooddingii	tree	100	OBL				

% of dominant species that are OBL, FACW, and/or FAC: 100%
Other Indicators:
Hydrophytic vegetation present? yes
Basis? > 50% fac, facw, obl

Soil

Map Unit: Riverwash	Subgroup: not classified

Field Observations: stratified sand and silt, surface 10 " sandy

Depth	Texture	Color (Matrix/mottle)	Notes
10"	silt	10YR4/2	

Hydric soil Indicators: __ Histosol __ Histic epipedon __ Sulfidic Odor __ Aquic moisture regime
__ Reducing conditions __ Gleyed or low-chroma colors __ Concretions
__ High o.c. in surface layer in sandy soils __ Organic streaking in sandy soils __
__ Listed on local hydric soils list Listed on national hydric soils list

Hydric Soils Present? no	Basis?: no evidence for reducing conditions in the upper soil horizon

Hydrology

Inundated? no
Depth of standing water:
Note:
No evidence of standing water in aerial photograph

Saturated? no
Depth to saturated soil: > 16"

Other primary indicators: __ Water marks __ Drift lines _ _Sediment deposits
_ _Drainage patterns in wetlands
Secondary indicators: __ Oxidized rhizospheres in upper 12" _ _ Water-stained leaves
__ Local soil survey data __ FAC_Neutral test
Wetland Hydrology present? no Basis: evidence for long duration saturation

Wetland Determination

Is this data point in a wetland? no
Reason?: Only the vegetation criterium is met.

Routine Wetland Delineation Data Form

Applicant: Cal Trans	Project: Ave 416	Observer: Virginia Dains
State: CA	County: Tulare	T16S R23E Sec 8 and 17
Date: October 22, 2001	Data Point : 2B	

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed? Yes
Is the area a potential Problem Area? No

Vegetation							
Species	**Strata**	**Cover**	**Status**	**Species**	**Strata**	**Cover**	**Status**
Typha domingensis	Herb	>20	OBL				

% of dominant species that are OBL, FACW, and/or FAC: 100%
Other Indicators:
Hydrophytic vegetation present? yes
Basis? > 50% fac, facw, obl

Soil			
Map Unit: Riverwash		Subgroup: not classified	
Field Observations: stratified sand and silt			
Depth	Texture	Color (Matrix/mottle)	Notes
4"	loam	10YR4/1	
Hydric soil Indicators: __ Histosol __ Histic epipedon __ Sulfidic Odor __ Aquic moisture regime __ Reducing conditions __ Gleyed or low-chroma colors __ Concretions __ High o.c. in surface layer in sandy soils __ Organic streaking in sandy soils __ __ Listed on local hydric soils list __ Listed on national hydric soils list			
Hydric Soils Present? yes		Basis?: evidence for reducing conditions	
Hydrology			
Inundated? yes	Depth of standing water: 2"	Note: Observation of standing water in aerial photograph	
Saturated? yes	Depth to saturated soil: surface		
Other primary indicators: __ Water marks __ Drift lines _ Sediment deposits _xx_ Drainage patterns in wetlands			
Secondary indicators: __ Oxidized rhizospheres in upper 12" Water-stained leaves __ Local soil survey data __ FAC_Neutral test			
Wetland Hydrology present? yes		Basis: evidence for long duration saturation	
Wetland Determination			

Is this data point in a wetland? yes
Reason?: all three criteria are met.

Routine Wetland Delineation Data Form

Applicant: Cal Trans	Project: Ave 416	Observer: Virginia Dains
State: CA	County: Tulare	T16S R23E Sec 8 and 17
Date: October 22, 2001	Data Point : 2A	

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed? Yes
Is the area a potential Problem Area? No

Vegetation							
Species	**Strata**	**Cover**	**Status**	**Species**	**Strata**	**Cover**	**Status**
Salix gooddingii	tree	100	OBL				

% of dominant species that are OBL, FACW, and/or FAC: 100%
Other Indicators:
Hydrophytic vegetation present? yes
Basis? > 50% fac, facw, obl

Soil			
Map Unit: Riverwash			Subgroup: not classified
Field Observations: stratified sand and silt, surface 10 " sandy			
Depth	Texture	Color (Matrix/mottle)	Notes
10"	Sandy loam	10YR4/2	

Hydric soil Indicators: __ Histosol __ Histic epipedon __ Sulfidic Odor __ Aquic moisture regime
__ Reducing conditions __ Gleyed or low-chroma colors __ Concretions
__ High o.c. in surface layer in sandy soils __ Organic streaking in sandy soils __
__ Listed on local hydric soils list __ Listed on national hydric soils list

Hydric Soils Present? no	Basis?: no evidence for reducing conditions in the upper soil horizon

Hydrology		
Inundated? no	Depth of standing water:	Note: No evidence of standing water in aerial photograph
Saturated? no	Depth to saturated soil: > 12"	

Other primary indicators: __ Water marks __ Drift lines __ Sediment deposits
__ Drainage patterns in wetlands

Secondary indicators: __ Oxidized rhizospheres in upper 12" __ Water-stained leaves
__ Local soil survey data __ FAC Neutral test

Wetland Hydrology present? no	Basis: evidence for long duration saturation
Wetland Determination	

Is this data point in a wetland? no
Reason?: Only the vegetation criterium is met.

BAT HABITAT ASSESSMENT

Including a Discussion of Impacts and Mitigations

KINGS RIVER BRIDGE
AVENUE 416
TULARE COUNTY, CALIFORNIA

1/17/03

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BAT HABITAT ASSESSMENT AVE 416

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SUMMARY

The Avenue 416 bridge that crosses the Kings River in Tulare County, California is planned for either replacement or widening (final determination has not yet been made). A daytime habitat assessment for roosting bats was conducted by Wildlife Research Associates on October 17, 2001, in order to determine whether the bridge provided suitable roosting habitat for bat species. Although complete focused surveys were not conducted during the habitat assessment, it was found that the bridge provided day roosting habitat for a large population of a diverse assemblage of bats at the time of the assessment, and evidence of extensive night roosting was also observed (Wildlife Research Associates 2001). The results of the 2001 survey indicates that the proposed bridge construction project, whether entailing widening or removal and replacement, will have significant impacts to a large number of bats, including reproductive females and their young.

This report examines those impacts, and provides a range of mitigation measures for each bridge alternative.

1.0 INTRODUCTION

Par Environmental Inc. contracted with Wildlife Research Associates to conduct a habitat assessment for roosting bats on the Kings River bridge crossing on Avenue 416, approximately ~~four miles south of the City of Visalia~~, five miles west of the City of Dinuba in Tulare County, California. [*revised 2/16/05*]

The proposed Avenue 416 project include alternatives for rehabilitation of the existing bridge, rehabilitation and widening of the existing bridge, or replacement with a new bridge, though the final determination has not been made it this time (Sanders, pers. comm.).

This report presents the results of the bat roosting habitat assessment of the bridge, a discussion of impacts per proposed project alternative, and proposed mitigation measures that will reduce the impacts to less than significant for two of the four project alternatives.

1.1 Project Setting

Avenue 416 in Tulare County, California, crosses the Kings River at approximate coordinates 36º 32' 48", 119º 29' 13". Please refer to Figure 1 for a map showing the project location. The bridge over the river is constructed of concrete, and is of a girder design (actually, arched girders). Compared statistically to other bridge designs, the girder design of this bridge is used heavily by bats for night roosting activity, and used moderately for day roosting when expansion joints are available (Erickson, et al. 2000). About 60% of the known bridge roosts are girder designs. The bridge is surrounded by foraging habitat; riparian habitat occurs beneath the bridge, and farmlands occur in the surrounding area.

A review of the Reedley and Selma USGS topographic quad maps indicates a total of four additional road crossings over the Kings River within a five-mile radius of the project site; Manning, Huntsman Ave., Avenue 400, and Highway 99. Surveys were not conducted of these bridges, therefore no evaluation of bat roost habitat suitability is provided in this report.

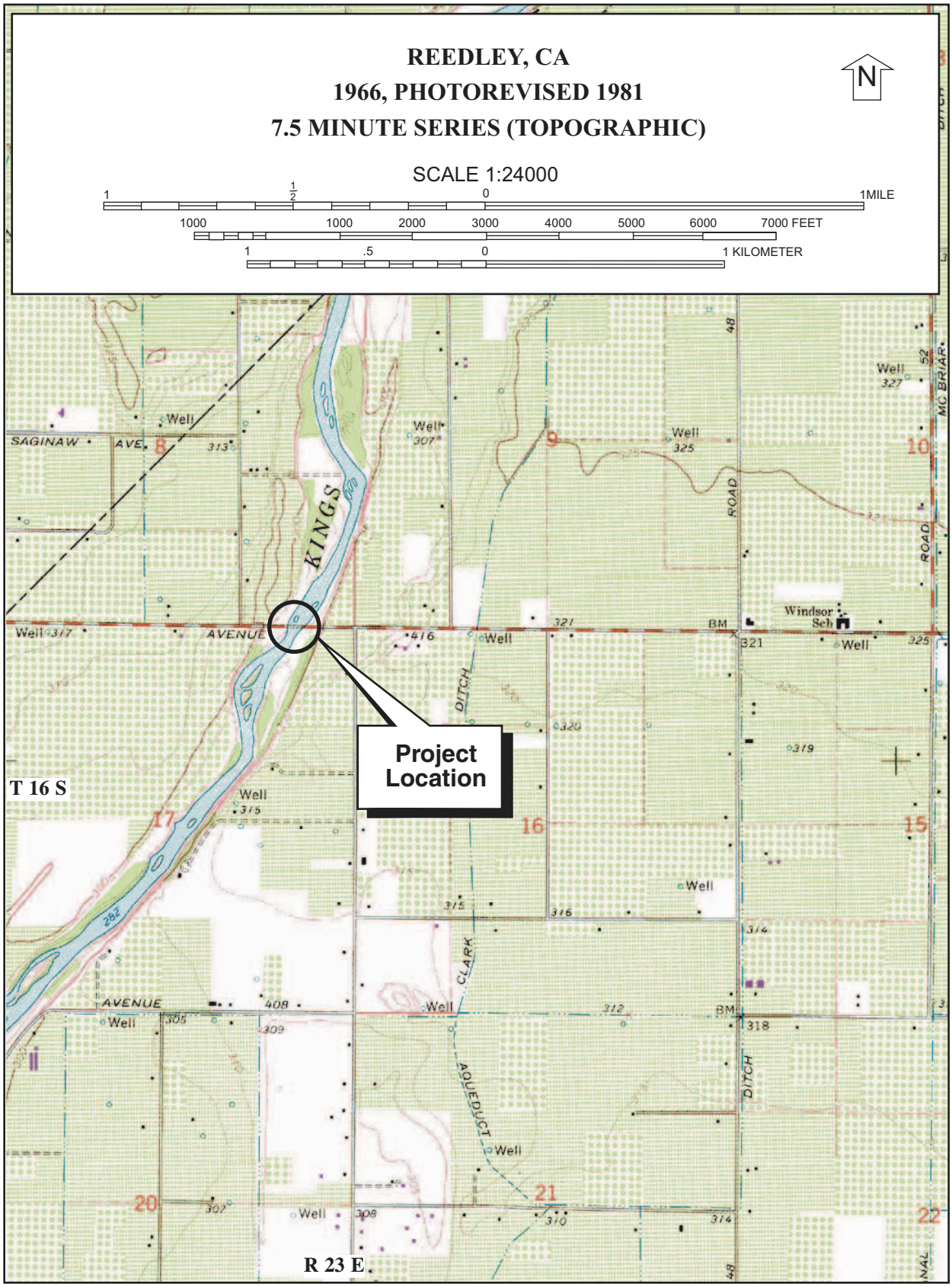
2.0 BACKGROUND

2.1 Bat Roosting Ecology

In California, bats use a wide variety of roost sites, which can be divided into "natural roosts", and man-made or "anthropogenic" roosts. Natural roost sites include caves, tree hollows, rock crevices, and exfoliating tree bark. Anthropogenic roost sites are analogs to natural sites, and include buildings, mines and bridges (Barbour and Davis 1969, Constantine 1961, Davis and Cockrum 1963, Fenton 1983, Kunz 1982). Some species roost only in tree cavities or under bark, while others use a wider range of roost types – both natural and anthropogenic.

Roost sites provide protection and comfort for bats as they sleep, rest between foraging bouts, hibernate, mate, socialize, and consume prey. Most of these activities occur at particular times - either day or night - and roosts are generally classified as either day or night roosts. Since bats are nocturnal, day roosts typically involve periods of rest, while night roosts are associated with temporary rest, prey processing, and intraspecific communication interspersed with periods of foraging (Kunz 1982). Depending upon the species, day roosts generally consist of crevices and cavities, with males often roosting separately from females. Breeding and maternity care may take place in day roosts in addition to resting.

While some species exhibit preferences for caves, mines and rock outcroppings, many species adapt readily to structures such as some bridges, because they can provide day roosting opportunities in crevices, and larger cavities that provide protection during the day, retain heat during night-roosting hours. Bats roosting



Project Location Map

in bridges become acclimated to noise from traffic, and as long as the crevice or cavity is safe from falling debris, light, or other disturbance, bats will readily take up residence in large numbers in bridge structures. In general, bat species are considered to be roost limited. Bats typically show strong site fidelity to permanent roost sites, both natural and anthropogenic, and maternity roost sites elicit very high site fidelity (Kunz 1982). In general, bats are opportunistic in their selection of night roosts, which implies that site fidelity at these roosts would be low. However, recent studies (Lewis 1994, Pierson 1996, and ongoing radio telemetry studies by Tatarian) suggest that night roosts elicit high night-to-night and year-to-year site fidelity. Bats are sensitive, in varying degrees, to roost disturbance.

Because of this high site fidelity behavior by bats, signs of usage are often well established. Typical signs of presence of roosting bats in bridges include urine staining on exterior landing surfaces, fecal pellet accumulation, and characteristic odor. These signs are also usually present to varying degrees in natural roost sites such as trees, rocks and caves.

2.2 Importance of Bridge Roosts to Bats

In 1995, the California Department of Transportation began collecting data on the use of bridge roosts in the state. Their data, and other research (Pierson et al. 1996), describes the importance of bridges to many bat species.

Of the 25 known species of bats in California, 14 species (56%) are known to roost on bridges (Erickson, et al. 2000). Six species (24%) may possibly roost on bridges, but have not been recorded doing so in California. Eleven of California's 25 bat species (44%) are classified as California Special Concern (CSC) species (CDFG 2002a). Of those eleven CSC species, the pallid bat (*Antrozous pallidus*) is commonly found roosting on bridges. Two other CSC species, Townsends' big-eared bat (*Corynorhinus townsendii*), and cave myotis (*Myotis veliver*), are sometimes found roosting on bridges.

Statewide, bridges provide significant roosting habitat, and it appears that large bat populations are supported by the availability of bridges. Not all bridges provide habitat; most steel bridges, concrete bridges with very smooth surfaces and/or no crevices, and bridges in intensely urban environments are least likely to have bats. Conversely, bridges with crevices such as hinges and expansion joints, open dark chambers (such as with concrete girder construction) are among the most likely to have bats. Bridges in more rural settings with nearby available fresh water and minimal human activity below the bridge are most likely to support populations of bats (Erickson, et al. 2000, Rainey and Pierson 1996). It is common for a single bridge or even a single crevice, such as an expansion joint or hinge with no ventral packing, to be inhabited by several species of bats. Bats have become highly dependent upon bridges in areas where bridges are the primary available roost sites.

Bridge use by bats, for both day and night roosts, varies significantly with season and location. Large-scale seasonal weather patterns, and smaller-scale, within-season patterns, affect activity, migration and hibernation of bats (Pierson 1996). These variations mean that surveys must be conducted and interpreted carefully. In order to eliminate, minimize, or mitigate for impacts to roosting bats, such seasonal usage must be considered when scheduling bridge maintenance, repair or replacement.

3.0 METHODS

The habitat assessment was conducted between 1100 and 1330, on October 17, 2001, by Greg Tatarian. Weather was clear and mild (72ºF – 74ºF). Visual surveys were conducted using 10 x 40 roof prism binoculars, 1 – 500,000 candlepower spotlight, 1 – 50,000 candlepower spotlight, and a Sony Digital 8 video camera with NightShot and a 20x optical zoom lens were used to render detail more accurately and record still photos.

All bridge undersurfaces were examined for adhered bat fecal matter and urine staining, and surfaces beneath the bridge were examined for accumulated fecal material, insect prey remains and bat carcasses. Expansion joints were carefully examined, and bats that were observed were identified to species and counted where possible.

4.0 RESULTS

Six of the total of seven expansion joints were surveyed. All exhibited extensive urine staining, and all contained roosting bats at the time of the survey. The remaining joint could not be inspected from directly beneath, because it was in a portion of the bridge over the river with no access from beneath, however it did exhibit extensive urine staining, indicating it also is used by day roosting bats.

An approximate count of individuals by species observed was as follows; 1,020 Brazilian free-tailed bat (*Tadarida brasiliensis)*; 120 pallid bat (*Antrozous pallidus*); 55 *Myotis* (presumed *yumanensis*), and; 10 *Myotis* (presumed *thysanodes*). The high population of bats using these expansion joints is indicative of the high habitat suitability the joints possess, providing significant day and night-roosting areas protected from light, water, wind, and most disturbances.

The survey was conducted during the post-reproductive dispersal season for bats, rather than during the reproductive period (ca. April – August), however juvenile bats roosting together with adults were observed, suggesting this bridge provides critical maternity roost habitat. Four species were observed using the day roost habitat created by the expansion joints, however it is very likely that additional species use the expansion joints during pup-rearing and pre-dispersal for day roosting. It is possible that the bridge also provides overwintering habitat, although surveys have not been conducted to make such a determination.

Extensive night roosting occurs under this bridge. Large amounts of fecal matter were found adhered to the vertical surfaces of the girder beams, and extensive urine staining was observed at inside corners formed by piers join girders, and at the joints of girder sections. Large accumulations of fecal matter was found on the ground surfaces beneath roost areas Given the size of the bridge and numerous discrete roosting pockets formed by the junction of pier and girder, and girder-to-girder joints, it is very likely that additional species of bats use this bridge for night roosting.

Foraging habitat immediately beneath and around the bridge is excellent. Airspace to the bridge is mostly unobstructed, and access to the water and surrounding riparian vegetation is excellent.

Evidence of extensive nesting by cliff swallows (*Petrochelidon pyrrhonota*) was observed beneath the bridge. Please see Figure 10.

5.0 IMPACT SIGNIFICANCE AND MITIGATION STRATEGIES

5.1 Impact Significance

Short-term Impacts:
Impacts to individuals and colonies are often considered to be short-term impacts if construction activities, known to cause roost abandonment and/or mortality of adults or young, occur. Day roosting typically occurs during spring, summer and fall (between late February and late October) in California, and is usually associated with maternity usage. The maternity season occurs between mid-April and late August, and is the most critical time period because it is difficult for females to relocate young to another roost when young are present and are unable yet to fly.

Short-term impacts to night roosting individuals and colonies can occur in the form of habitat loss from project activities - including bat eviction, or disturbance, eg. if construction was to occur at night. In

addition, not all bat species migrate, and some may overwinter on a bridge structure, exposing them to risk of mortality during construction projects.

Roost habitat loss is considered a significant impact to the colony. The degree of short-term loss determines the degree of significance. If construction begins before the maternity season commences (late February) individuals are less likely to move into the bridge for maternity roosting, but the roost habitat would be lost to the colony, at least temporarily.

Long-term Impacts:
Significance of impacts is also evaluated for long-term sustainability of the population based on the degree of long-term habitat loss, and can be referred to as long-term impacts. Long-term impacts include permanent alterations to existing bridges that prevent bat roosting, and replacement of bridge roost habitat with a bridge design that does not provide roost habitat.

A project is considered to have high impacts to bats when (Erickson, et al. 2000);

a) day or night construction is within 100 feet of occupied roost habitat,
b) airspace access to and from the bridge is altered extensively,
c) lighting shines on the structure,
d) combustion equipment or vehicles are parked or operated under or adjacent to the structure, and
e) personnel are present under the bridge during evening and night hours.

5.2 Mitigation Strategies

Mitigation of impacts to bats includes considerations of local ecology, alternative roost site availability, bat species affected, collateral species impacts, and construction methods and timing (Erickson, et al., 2000). It may be valuable to conduct surveys to determine suitability of similar bridge roost habitat within a five-mile radius of the Kings River Bridge, although it is likely that those bridges with suitable day roost habitat are occupied to capacity, and will provide little replacement value for temporary or permanent habitat loss resulting project activities. Mitigation should always focus first on avoidance of impacts to bats. If avoidance is not possible then impacts should be mitigated.

Bridge replacement should only be used as a last resort. The best impact avoidance measure during construction is to work when the colony is not present and retain the roost characteristics when work is complete. The best solutions are simple and fit within the parameters of normal operations. The replacement of lost bat roosting habitat with artificial roosts should not be considered without conducting additional surveys to better assess species composition and population during different seasons, and subsequently following a monitoring plan, since artificial roost design is not always successful and provides habitat for only a limited number of species when compared to bridges.

Mitigation of impacts to day roosting bats is somewhat more complicated than with night roosting bats, since day roosting bats are normally present during typical construction working hours during spring, summer and fall months in California. In cases where avoidance of impacts to bats may not be possible, such as with the Kings River bridge project, then it is necessary to block roosting crevices and evict adult bats, either prior to establishment of the maternity roost and subsequent birth of young (April 15), or after volancy and before topor/hibernation (typically approximately August 15 – October 15).

For the purposes of this report, “exclusion” means to seal openings or crevices in which no bats are present. “Eviction” means to install one-way exits on openings or crevices, using partial exclusion when necessary, in order to permit the bats to escape but prevent their reentry.

Exclusion and eviction are considered best management practices to remove day roosting bats, though exclusion and/or eviction of bats is only a part of the mitigation process, and construction work must be scheduled to allow proper exclusion before April 15 of the construction year (Erickson, et al. 2000).

Additional detail regarding exclusion and eviction methods and materials, as well as contractor selection recommendations, are provided in Appendix B.

Exclusion of night roosting bats should not be necessary, because seasonal and daily timing of construction can be tailored to eliminate impacts. To avoid impacts to night roosting bats, work schedules can be structured so that work is conducted during the time that bats are not present (between ~~sunset and sunrise~~ sunrise and sunset). Airspace access to and from the bridge should not be impeded. Other precautions may be necessary. [*revised 2/16/05*]

Netting material used to prevent swallows from nesting on the bridge structure can create a variety of impacts to roosting bats if not implemented properly. For example, netting made of fine, flexible material can entangle bats. Netting improperly installed can be ineffective, allowing bats to enter were gaps occur between the netting and structure. Netting hanging vertically from the bridge down to the ground can entangle bats, and can be vandalized, or damaged by large animals. Netting does not always need to be applied to the entire structure; if work will progress slowly, or begin at one end and progress to the other, netting to exclude swallows may be unnecessary on the portions not being worked on during swallow nesting season. The preferred strategy where netting is used is daily removal; workers remove the applicable section of netting while conducting bridge construction during the day, and replace it at the close of the workday. It is usually not necessary, nor feasible, to use daily removal of an entire net assembly.

When bridge replacement is deemed necessary, the replacement should use a similar bridge design where feasible if the roost is large, unique, or supports a rare species (Erickson, et al. 2000). The ideal is to replace the existing roost habitat with identical habitat with the same physical parameters. If an alternative design is used, it may be possible to modify it to provide similar roost characteristics.

If a box structure is proposed, minor modifications to permit access into the box cavities can possibly provide adequate replacement habitat (Erickson, et al. 2000). Access, ventilation and protection from predators and vandals are all critical issues. Crevice roosts, such as expansion joints in existing bridges, should be replaced with crevices of similar area. Cavity roosts should be replaced with cavities of similar characteristics.

Off-site artificial roosts can be considered to provide replacement roost habitat for retrofitting projects that will extend over several seasons, or for bridge replacement. Off-site artificial roosts include bat houses and larger structures erected near the bridge structure. Bat houses have been effective in agricultural and rural settings in California, but only for a few species. Bat houses require careful design and construction, and most important, careful monitoring and seasonal maintenance to minimize mortality (Tatarian, personal observations). Because of their design, bat houses offer large amounts of interior surface area for roosting, but as a result, characteristics common to many bridges are not available. Augmentation should be considered before the use of off-site artificial roosts in most cases.

6.0 IMPACTS AND MITIGATIONS FOR PROPOSED PROJECT ALTERNATIVES

Impact 1 – Rehabilitate/Widen Existing Bridge

Alternative A-1 for the Kings River Bridge, as described in the *General Plan Estimate* (Quincy Engineering, Inc. 2002), entails rehabilitating the existing bridge structure and adding approximately 7.33 feet to the existing width. No information is yet available about the proposed construction schedule and duration, or whether the entire bridge would be widened at one time, or work begun at one end, working toward the other end. However, it is assumed that existing roosting habitat, providing both day (expansion joints) and night (inside corners of the T-beams) roost availability, will remain after construction and the 7.33-foot expansion will provide more area of the same types of habitat available presently.

Alternative A-1 will create short-term impacts to bats by eliminating day roosting habitat during construction activities, and potentially for a limited time after construction ends. Night roosting habitat will also be impacted if work proceeds during nighttime hours, or if construction materials and equipment will obstruct the area under the bridge or bridge undersurface.

However, because this bridge is currently very actively used by bats, widening of the existing bridge, as opposed to removal and replacement with another type, should create the lowest degree of long-term impacts to roosting bats, since existing roost habitat will still remain after construction activities are complete. Widening the bridge using matching girders would probably create additional bat habitat for both day and night roosting activities.

Impacts to foraging habitat during the proposed expansion would be low, assuming limited clearing of riparian vegetation beneath the bridge, and only temporary loss of aquatic foraging habitat within the construction zone.

Mitigation 1 - Rehabilitate/Widen Existing Bridge

Day Roosts:

1) Bats should be excluded from directly affected work areas prior to April 15 of the construction year. Exclusion should be done selectively and only to the extent necessary to prevent acute morbidity or mortality to the colony.
2) **A survey by a qualified bat biologist must be conducted before exclusion and/or eviction is performed, in order to verify that bats are not present in the expansion joint(s).**
3) If bats are found to be present in any expansion joints, bats will be evicted from the crevice under supervision of the bat biologist. Eviction is accomplished by packing portions of the expansion joint, then installing one-way exits at locations determined by the bat biologist. One-way exits will remain in place for at least 7 days, then the expansion joint will be inspected to ensure bats have vacated the joint. The one-way exists should then be removed, and the remaining openings blocked with exclusion materials.
4) Exclusion is accomplished by packing the expansion joints with foam pipe insulation material, ¼" hardware cloth, or expandable foam.
5) If a survey by a qualified bat biologist reveals no bats in any expansion joint, that joint must be sealed within 24 hours, as described above.
6) Swallow exclusion netting should be installed as described above, and should not be used as bat exclusion material over day roost crevices; it may entangle bats attempting to enter the roost crevice, and could provide a foothold directly beneath the crevice, which confused bats might continue to use for extended periods.
7) All exclusion materials must be removed after completion of construction activities to allow bats to reoccupy the bridge structure.

Night Roosts:

1) Work should not occur within 100 feet of the bridge between sunset and sunrise.
2) Airspace access to and from the bridge should not be severely restricted.
3) Clearing and grubbing should be minimized where possible.
4) Combustion equipment such as generators, pumps, and vehicles should not be parked or operated under or adjacent to the structure.
5) Personnel should not be present under the colony, especially during the evening exodus.
6) Swallow exclusion netting should be installed as described above, and so that it does not cover or interfere with any occupied expansion joint.
7) Netting must be removed after completion of construction activities to allow bats to reoccupy the bridge structure.

Implementation of Mitigation 1 will reduce *short-term impacts* to roosting bats to *less than significant.*

Implementation of Mitigation 1 will reduce *long-term impacts* to roosting bats to *insignificant.*

Impact 2 – Rehabilitate Existing Bridge

Alternative A-2, as described in the *General Plan Estimate* (Quincy Engineering, Inc. 2002), entails a rehabilitation of the entire bridge span as with Alternative A-1, however no widening will occur. No progress print was provided to Wildlife Research Associates for review, and for the purposes of this document, it is assumed that disturbance to the entire bridge structure will occur during bat occupancy periods, similar to Alternative A-1. It is assumed that existing roosting habitat, providing both day (expansion joints) and night (inside corners of the T-beams) roost availability, will remain after construction

Alternative A-2 will create short-term impacts to bats by eliminating day roosting habitat during construction activities. Night roosting habitat will also be impacted if work proceeds during nighttime hours. No additional bat roosting habitat will be created.

Impacts to foraging habitat during the proposed expansion would be low, assuming limited clearing of riparian vegetation beneath the bridge, and only temporary loss of aquatic foraging habitat within the construction zone.

Mitigation 2 – Rehabilitate Existing Bridge

Day Roosts:

1) Bats should be excluded from directly affected work areas prior to April 15 of the construction year. Exclusion should be done selectively and only to the extent necessary to prevent acute morbidity or mortality to the colony.
2) **A survey by a qualified bat biologist must be conducted before exclusion and/or eviction is performed, in order to verify that bats are not present in the expansion joint(s).**
3) If bats are found to be present in any expansion joints, bats will be evicted from the crevice under supervision of the bat biologist. Eviction is accomplished by packing portions of the expansion joint, then installing one-way exits at locations determined by the bat biologist. One-way exits will remain in place for at least 7 days, then the expansion joint will be inspected to ensure bats have vacated the joint. The one-way exists should then be removed, and the remaining openings blocked with exclusion materials.
4) Exclusion is accomplished by packing the expansion joints with foam pipe insulation material, ¼" hardware cloth, or expandable foam.
5) If a survey by a qualified bat biologist reveals no bats in any expansion joint, that joint must be sealed within 24 hours, as described above.
6) Swallow exclusion netting should be installed as described above, and should not be used as bat exclusion material over day roost crevices; it may entangle bats attempting to enter the roost crevice, and could provide a foothold directly beneath the crevice, which confused bats might continue to use for extended periods.
7) All exclusion materials must be removed after completion of construction activities to allow bats to reoccupy the bridge structure.

Night Roosts:

1) Work should not occur within 100 feet of the bridge between sunset and sunrise.
2) Airspace access to and from the bridge should not be severely restricted.
3) Clearing and grubbing should be minimized where possible.
4) Combustion equipment such as generators, pumps, and vehicles should not be parked or operated under or adjacent to the structure.
5) Personnel should not be present under the colony, especially during the evening exodus.

6) Swallow exclusion netting should be installed as described above, and so that it does not cover or interfere with any occupied expansion joint.
7) Netting must be removed after completion of construction activities to allow bats to reoccupy the bridge structure.

Implementation of Mitigation 2 will reduce *short-term impacts* to roosting bats to *less than significant.*

Implementation of Mitigation 2 will reduce *long-term impacts* to roosting bats to *insignificant.*

Impact 3 – Bridge Replacement with Box Girder Design

Alternative B entails the replacement of the bridge with a cast-in-place prestressed concrete box girder bridge. No expansion joints are shown on the progress print supplied to Widlife Research Associates. Box girder bridges provide no day or night roost habitat for bats, unless they are modified to include expansion joints or suitable openings designed into the girder box sections.

Alternative B would create significant short-term and long-term impacts to roosting bats by permanently eliminating both day and night roost habitat.

Mitigation 3 – Bridge Replacement with Box Girder Design
Mitigation 3A
Day Roosts:

1) Bats should be excluded from directly affected work areas prior to April 15 of the construction year. Exclusion should be done selectively and only to the extent necessary to prevent acute morbidity or mortality to the colony.
2) **A survey by a qualified bat biologist must be conducted before exclusion and/or eviction is performed, in order to verify that bats are not present in the expansion joint(s).**
3) If bats are found to be present in any expansion joints, bats will be evicted from the crevice under supervision of the bat biologist. Eviction is accomplished by packing portions of the expansion joint, then installing one-way exits at locations determined by the bat biologist. One-way exits will remain in place for at least 7 days, then the expansion joint will be inspected to ensure bats have vacated the joint. The one-way exists should then be removed, and the remaining openings blocked with exclusion materials.
4) Exclusion is accomplished by packing the expansion joints with foam pipe insulation material, ¼" hardware cloth, or expandable foam.
5) If a survey by a qualified bat biologist reveals no bats in any expansion joint, that joint must be sealed within 24 hours, as described above.
6) Swallow exclusion netting should be installed as described above, and should not be used as bat exclusion material over day roost crevices; it may entangle bats attempting to enter the roost crevice, and could provide a foothold directly beneath the crevice, which confused bats might continue to use for extended periods.

Night Roosts:

1) Work should not occur within 100 feet of the bridge between sunset and sunrise.
2) Airspace access to and from the bridge should not be severely restricted.
3) Clearing and grubbing should be minimized where possible.
4) Combustion equipment such as generators, pumps, and vehicles should not be parked or operated under or adjacent to the structure.
5) Personnel should not be present under the colony, especially during the evening exodus.
6) Swallow exclusion netting should be installed as described above, and so that it does not cover or interfere with any occupied expansion joint.
7) Netting must be removed after completion of construction activities to allow bats to reoccupy the bridge structure.

Implementation of Mitigation 3A will reduce *short-term* impacts to roosting bats to *less than significant.*

Mitigation 3B

1) Design replacement box girder bridge to provide access openings into box cavities. Cavities should limit access to humans and predators. Entrances into the cavities should be at least 4-6" by 14" with a clear flight path in and out (Erickson, et al. 2000). Modifications to access doors and coverings, or utility access plates can provide suitable openings.
2) One entrance per cell should be provided to permit future partial exclusion if needed.
3) Diaphrams between sections should be modified within engineering limits to allow passage by bats between cells. The passage should be consistent with passage used for utilities.

Implementation of Mitigation 3B *may* reduce *long-term* impacts to roosting bats to *less than significant.*

Impact 4 – Bridge Replacement with Bulb-T Design

Alternative C would replace the existing bridge with a Bulb-T design. No expansion joints are shown on the progress print supplied to Widlife Research Associates, and it is unknown whether the bulb-T design will provide expansion joints, or how many if so. Loss of day and night roosting habitat would be very likely to occur during construction. Although night roost habitat will be provided it will be a smaller area than currently existing due to the fewer number of piers and the pier junction design is less conducive to roosting. If construction is limited to daylight hours and other precautions are followed, night roosting activity might not be impacted.

Alternative C would create high impacts to roosting bats by permanently eliminating day roosts and reducing the area of night roost habitat.

Mitigation 4 - Bridge Replacement with Bulb-T Design
Mitigation 4A
Day Roosts:

1) Bats should be excluded from directly affected work areas prior to April 15 of the construction year. Exclusion should be done selectively and only to the extent necessary to prevent acute morbidity or mortality to the colony.
2) **A survey by a qualified bat biologist must be conducted before exclusion and/or eviction is performed, in order to verify that bats are not present in the expansion joint(s).**
3) If bats are found to be present in any expansion joints, bats will be evicted from the crevice under supervision of the bat biologist. Eviction is accomplished by packing portions of the expansion joint, then installing one-way exits at locations determined by the bat biologist. One-way exits will remain in place for at least 7 days, then the expansion joint will be inspected to ensure bats have vacated the joint. The one-way exists should then be removed, and the remaining openings blocked with exclusion materials.
4) Exclusion is accomplished by packing the expansion joints with foam pipe insulation material, ¼" hardware cloth, or expandable foam.
5) If a survey by a qualified bat biologist reveals no bats in any expansion joint, that joint must be sealed within 24 hours, as described above.
6) Swallow exclusion netting should be installed as described above, and should not be used as bat exclusion material over day roost crevices; it may entangle bats attempting to enter the roost crevice, and could provide a foothold directly beneath the crevice, which confused bats might continue to use for extended periods.

Night Roosts:

1) Work should not occur within 100 feet of the bridge between sunset and sunrise.
2) Airspace access to and from the bridge should not be severely restricted.
3) Clearing and grubbing should be minimized where possible.
4) Combustion equipment such as generators, pumps, and vehicles should not be parked or operated under or adjacent to the structure.
5) Personnel should not be present under the colony, especially during the evening exodus.
6) Swallow exclusion netting should be installed as described above, and so that it does not cover or interfere with any occupied expansion joint.
7) Netting must be removed after completion of construction activities to allow bats to reoccupy the bridge structure.

Implementation of Mitigation 4A will reduce *short-term* impacts to roosting bats to *less than significant.*

Mitigation 4B

1) Within engineering limits, provide replacement crevice roost habitat (expsnsion joints) equivalent to that found in the expansion joints of the existing bridge.
2) If not already incorporated into the design for Alternative C, provide lateral interstices between Bulb-T girders, such as where girders rest on pier platforms, to create cavities similar to those found in the existing bridge.

Implementation of Mitigation 4B *may* reduce *long-term* impacts to roosting bats to *less than significant.*

7.0 LITERATURE CITED

BARBOUR, R. W. AND W. H. DAVIS. 1969. BATS OF AMERICA. UNIVERSITY OF KENTUCKY PRESS, LEXINGTON, KY.

BROWN, P. E. AND E. D. PIERSON. 1996. ORGANIZERS, NATURAL HISTORY AND MANAGEMENT OF BATS IN CALIFORNIA AND NEVADA. NOVEMBER 13-15, 1996.THE WILDLIFE SOCIETY WESTERN SECTION.

CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG). 2002A. SPECIAL ANIMALS. WILDLIFE AND HABITAT DATA ANALYSIS BRANCH. CALIFORNIA NATURAL DIVERSITY DATA BASE. JULY.

CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG). 2002B. STATE AND FEDERALLY LISTED ENDANGERED AND THREATENED ANIMALS OF CALIFORNIA. WILDLIFE AND HABITAT DATA ANALYSIS BRANCH. CALIFORNIA NATURAL DIVERSITY DATA BASE. JULY.

CONSTANTINE, D. G. 1961. LOCALITY RECORDS AND NOTES ON WESTERN BATS. J. MAMM. 42:404-405. THE AMERICAN SOCIETY OF MAMMALOGISTS.

DAVIS, R. AND E. L. COCKRUM. 1963. BRIDGES UTILIZED AS DAY-ROOSTS BY BATS. J. MAMM. 44(3):428-430.

ERICKSON, G. A., E. D. PIERSON, ET AL. 2002. MICROCHIROPTERAN BRIDGE UTILIZATION (HITCH HIKERS' GUIDE TO BAT ROOSTS), CALIFORNIA DEPARTMENT OF TRANSPORTATION, STOCKTON, CA. – UNPUBLISHED REPORT.

FENTON, M.B. 1983. JUST BATS. UNIVERSITY OF TORONTO PRESS, TORONTO.

KUNZ, T. H. 1982. ROOSTING ECOLOGY OF BATS. PP. 1-55, *IN* ECOLOGY OF BATS. (ED., T. H. KUNZ). PLENUM PRESS, NY.

LEWIS, S. E. 1994. NIGHT ROOSTING ECOLOGY OF PALLID BATS (*ANTROZOUS PALLIDUS*) IN OREGON. AMERICAN MIDLAND NATURALIST 132:219-226.

PIERSON, E. D. 1999 *IN* BAT BIOLOGY & CONSERVATION (EDS. T. H. KUNZ, P. RACEY). CHAPTER 22, PP. 309-325.

QUINCY ENGINEERING, INC. 2002 GENERAL PLAN ESTIMATES AND PROGRESS PRINTS FOR KINGS RIVER BRIDGE *PREPARED FOR* COUNTY OF TULARE.

RAINEY, W. E. AND E. D. PIERSON. 1996. BATS AND BRIDGES IN CALIFORNIA *IN* NATURAL HISTORY & MANAGEMENT OF BATS IN CALIFORNIA & NEVADA. PP. 1-4, SECTION 6 *IN* WORKSHOP OF THE WESTERN SECTION OF THE WILDLIFE SOCIETY.

TATARIAN, G. K. 1992-2002. PERSONAL OBSERVATIONS.

TATARIAN, G. K. IN PREPARATION. INDIVIDUAL PREFERENCES FOR AERIAL FORAGING BY PALLID BATS (*ANTROZOUS PALLIDUS*).

WILDLIFE RESEARCH ASSOCIATES. 2001. PRELIMINARY REPORT – BAT HABITAT ASSESSMENT FOR KINGS RIVER BRIDGE AT AVENUE 416, TULARE COUNTY, CALIFORNIA. OCTOBER.

PERSONAL COMMUNICATION

SUSAN SANDERS. 2002. PAR ENVIRONMENTAL SERVICES INC. BIOLOGIST. JANUARY.

APPENDIX A

SITE PHOTOGRAPHS

Figure 1. View of Kings River Bridge

Figure 2. East abutment

Figure 3. Evidence of night-roosting by bats @ abutment

Figure 4. Heavy fecal accumulation from night-roosting

Figure 5. Expansion joints heavily used for day-roosting

Figure 6. Pallid and Brazilian free-tailed bats

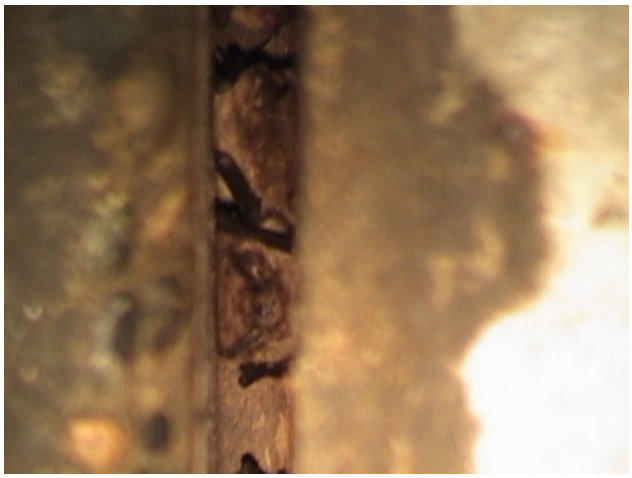


Figure 7. *Myotis* (presumed *thysanodes*)

Figure 8. Expansion joint showing efflorescence/staining

Figure 9. Heavy urine staining at expansion joints

Figure 10. Swallow nests beneath bridge

APPENDIX B

EXCLUSION/EVICTION TECHNIQUES AND MATERIALS

WORKING WITH PCOS; CAUTIONS AND CONCERNS

B-1 Seasonal Time Frames

The eviction of day-roosting bats can be performed during two seasonal time windows of opportunity. These windows are variable; the first window opens after overwintering bats become active, usually around the middle of March. This opportunity closes before parturition (which varies with species and locale), no later than April 15. The next window opens after young have fully developed and are volant - usually by mid-late August. This opportunity closes before the onset of torpor or hibernation - usually around October 15. Seasonal variability may allow for work slightly outside those dates, but presence/absence surveys should be conducted by a qualified bat biologist to determine metabolic, reproductive, and developmental states before attempting such out-of-season work. An example of when out-of-season exclusion may be feasible is; after a survey confirms absence of bats from a crevice, the crevice may be blocked immediately, before bats return to the bridge from overwintering sites or hibernacula.

B-2 Exclusion Procedures and Materials

Exclusion and eviction are two distinct, but inter-related actions. Blockage of alternate crevices (those that bats could use if they chose, but are currently unoccupied) is first completed. This is the first stage of exclusion. Next, one-way exits are installed; these allow the bats to safely escape from the crevice in the course of normal feeding routines. After the correct interval, the one-way exits are removed and the remaining openings are sealed or blocked, completing the second stage of exclusion.

Netting is not a suitable material with which to block crevices. The preferred material for blocking crevices completely seals the crevice after the bats have been evicted. Extruded poly foam used for insulating water and gas pipes is an excellent material - readily available in various sizes, it can be cut easily and is economical. It should not be considered suitable for permanent blockage however; other packing materials such as those normally used for packing bridge expansion joints beneath the road deck are preferable. Crevices may also be blocked with steel wool, wood, or metal flashing, depending upon bridge construction. A design for effective, sturdy one-way exits for crevices, and another for use at abutments, is provided in Appendix B.

B-3 Eviction Device Materials

The preferred materials for construction of one-way exits are fiberglass window screen material, aluminum flashing and high-quality duct tape. Netting can be used, but must be somewhat stiff, rather than flexible. Additionally, the preferred mesh size for netting used for one-way exits is 1/4", rather than 1/2" mesh more widely used by PCOs for bat eviction from structures. Though the risk of entanglement in 1/2" mesh is not high, using 1/4" mesh or fiberglass window screen material can significantly reduce it. The mesh should be attached at the top, outer edges of the crevice so that no gaps exist between the mesh and the structure. If a hinge or expansion joint forms the crevice, two pieces of mesh will be used to form a "chute", through which the bats will exit.

If duct tape will not adhere to the surface, sandwiching under wood tack strips installed with concrete fasteners can fasten the mesh. The mesh should hang down approximately 24", and should be tightly attached at the ends down about 12" forming the chute, which is tightly sealed at the top and sides but open at the bottom.

The aluminum flashing is used as a non-grip backing when an abutment, pier, or walls form a landing surface beneath the roost crevice. The flashing takes the place of one of the pieces of mesh, and is attached against the bridge surface, extending down about 24". It can be attached with duct tape if it will be removed within 2

weeks. If removal and subsequent blockage of the crevice will be delayed past this time, the flashing should be attached with short concrete fasteners installed with a hammer-drill or rotary hammer. The fiberglass mesh is then attached to the outside top edge of the crevice as described above. These materials permit extensive adaptation to a wide variety of roost types. After the appropriate interval, all of the materials are removed, and the crevice is blocked with the appropriate material which will serve as exclusion until the bridge construction is complete, when it is then removed to allow use by bats.

B-3 Eviction Device Materials

Pest Control Operators (PCOs) may be contracted with to exclude bats. PCOs should provide details to the County regarding their proposed methods and materials for removing bats day roosting in bridges. There are a variety of PCOs attempting to provide such work. In the author's experience, PCOs are still early in the learning curve for bat exclusion from private structures; therefore, proposals for exclusion and eviction from bridge structures by PCOs should be carefully reviewed.

Selection of a PCO for bat exclusion/eviction and/or swallow exclusion should be based upon responsiveness of the PCO to established specifications, not just stated prior experience. PCOs should use methods and materials as described in this report, since those used to exclude and evict bats from residential and commercial structures may not be appropriate for use in a bridge bat habitat setting. For example, in residential and commercial structures, private ownership provides the property owner with greater latitude in the treatment of bats inhabiting such structures (this is known as the property damaging, non-game mammal exemption in Section 4152 of the California Fish and Game Code). This means that any *legal* means to kill bats causing property damage to a structure may be used by the property owner or his/her agent (PCO, in most cases). This latitude may lead some PCOs to use the most expedient means available to them, resulting in injury or mortality to bats. Lethal control methods, whether intentional or unintentional, are not considered best management practices even when in such settings; in a bridge roost setting, such methods are totally inappropriate.

APPENDIX C

LAWS AND REGULATIONS PERTAINING TO BATS

There are several laws, regulations and policies which attempt to limit impacts to wildlife species which include bats. Bats are not specifically protected, because none are currently listed as Threatened or Endangered by the California Department of Fish (CDFG) and Game or the U.S. Fish and Wildlife Service (USFWS). However, eleven species are listed as Species of Special Concern by CDFG, and nine are Federal Species of Concern (formerly FC2 category).

Bats are afforded protection under the California Fish and Game Code. Sections of the Code pertinent to this project include:

Section 86 defining "Take"
Section 2000 – Unlawful taking…
Section 2014 – State Policy: Conservation of natural resources…
Section 3007 – License or permit; necessity of
Section 4150 – Nongame mammals

Several Sections under TITLE 14 of the California Code of Regulations also apply, including but not limited to;

Section 251.1 – Harassment of Animals

Under Chapter 3;

Several Sections under Articles 1 and 2
Article 20;
Section 15380 - Endangered, Rare or Threatened Species
Section 15382 – Significant Effect on the Environment
Several Sections under the California Public Resources Code, Division 13

Also;
Caltrans Environmental Policy
Caltrans Environmental Procedures
FHWA Environmental Policy
FHWA Environmental Procedures

The CDFG Special Animals list, July 2002, classifies the following species that are are known to, or could possibly occur, on bridges in Tulare County with the following CNDDB Rank:

Pallid Bat (*Antrozous pallidus*)	CDFG: CSC G5S3 (State rank 3 = restricted range, rare: about 21-100 EO's, or 3,000-10,000 individuals, or 10,000-50,000 acres of occupied habitat)
Pale big-eared bat (*Corynorhinus townsendii pallescens*)	CDFG: CSC G4T3T4S2S3 (Subspecies rank 3and 4, as above. State rank 2 = full species endangered: about 6-20 EO's, or 1,000-3,000 individuals, or 2,000 to 10,000 acres of occupied habitat)
Townsend's western big-eared bat (*Corynorhinus townsendi townsendii*)	(As above)

Fringed myotis (*Myotis thysanodes*)	G4G5S4
Long-legged myotis (*Myotis volans*)	G5S4?
Yuma bat (*Myotis yumanensis*)	G5S4? (State rank 4? = proper rank is probably 4 – apparently secure: some factors exist to cause some concern such as narrow habitat or continuing threats)

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October 17, 2002

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RE: Bat-Friendly Bridge Designs for Kings River Bridge, Tulare County, CA (PAR No. 01-905)

Hello Melinda,

Susan Sanders called me yesterday to inform me that the replacement Kings River Bridge is in the design phase, and she asked me to provide some information regarding bat-friendly bridge designs.

I'll provide some basic information here, which was developed primarily by CALTRANS. I'll limit my information to concrete bridges.

Bat use of bridges is strongly correlated to bridge design and materials. One factor in bridge design is age, and the bridges most occupied by day-roosting bats (like those in the existing bridge), were built from 1965 – 1969. Girder bridges have a high occupancy rate of night roosting bats, and a medium-high rate for day-roosting bats. About 60 percent of the known bridge roosts are girder designs. It is important that girders are at least a meter tall.. Slab bridges are not particularly bat-friendly, though some contain numerous expansion joints that can be used by day and night-roosting bats. Box bridges can be very bat friendly, if they incorporate accessible cavities or hollows, and expansion joints or other crevices.

In general, bridges with expansion joints with a gap of 1" to 1-1/2", or other crevices or cavities, can provide suitable roost habitat for day-roosting bats. Abutments often provide roosting opportunities, but because they are not as high off the ground, may not be suitable for day-roosting bats. Bat-unfriendly bridges can be improved by providing roost augmentation panels or similar crevices or cavities.

Please call if you have any questions. Also, I suggest that the architects call Gregg Erickson at CALTRANS for more specific information regarding current ideas on bat-friendly bridge designs. Gregg's phone number is (916)654-4504.

Sincerely,

Greg Tatarian

Greg Tatarian

Wildlife Research Associates

Greg and Trish Tatarian
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Santa Rosa, CA 95407
707-544-6273 Fax 707-544-6317
http://www.wildliferesearch1.com
greg@wildliferesearch1.com
trish@wildliferesearch1.com

12/14/04

Patricia Ann Moyer
Associate Biologist
San Joaquin Environmental Management Branch
California Department of Transportation
2015 East Shields Avenue Suite # 100
Fresno, California 93726-5248
Phone: (559) 243 8309
Fax: (559) 243-8215

RE: Bat Roost Mitigation Options, King's River Bridge at Avenue 416, Tulare County, CA

Dear Patricia,

The following is a brief letter, written at your request, evaluating the proposed mitigation measures and describing various mitigation measures for the Avenue 416 Bridge over Kings River, in Tulare County. As we discussed by phone last week, the County is finalizing the environmental documents for the bridge replacement project, and has reduced the bridge design options to two alternatives each of two different designs. Each of these designs will, if not mitigated, result in loss of day-roosting, and potentially night-roosting, habitat reproductive colonies of at least three species of bats, including pallid bat (*Antrozous pallidus*), a California Special Concern species (CSC), Mexican free-tailed bat (*Tadarida brasiliensis*), and Yuma myotis (*Myotis yumanensis*), which were idenitified in 2001 (Wildlife Research Associates 2001, 2003).

The various mitigation measures discussed in this letter, though they do not include exact details regarding measurements, locations, etc., can be used for planning the mitigation design and cost budgeting as the project proceeds through the planning stages.

Current Project Alternatives

The existing concrete Avenue 416 Bridge will be replaced with another concrete bridge. The date of replacement is not yet known, although it may occur in about 10 years (Sanders personal communication). The duration of the project is also not yet known, but may last more than one season. Two alternatives each of two basic designs are being considered for the replacement bridge; Alternatives 3B – two separated box girder sections, 3C – two separated Bulb-T girder sections, 4B – a single-width box girder design made up of two sections with a closure pour, and 4C – a single-width Bulb-T girder design made up of two sections with a closure pour. See Progress Prints dated 12/31/03 for more detail.

Current Bat Mitigation Strategy

The current strategy for the bat population roosting on the bridge is to permanently exclude them from the new bridge by making the new expansion joints unavailable to returning bats (Moyer personal communication). Provision of off-structure roost(s) has been suggested as mitigation, presumably coupled with humane exclusion conducted using appropriate methods, as described in *Bat Habitat Assessment: A Discussion of Impacts and Mitigations, Kings River Bridge, Avenue 416, Tulare County, CA* (Wildlife Research Associates 2003).

Discussion

Currently Available Alternate Bridge Roosts

Surveys of other bridges within a five mile radius of the project area have not been conducted as part of this project, and no data is available to me regarding bridge type or bat use of nearby bridges. A review of topographic maps for a 5-mile radius of the Avenue 416 Bridge resulted in a total of five crossings of the King's River that are assumed to be large enough to require a bridge crossing, rather than a culvert crossing. Canal, ditch and slough crossings are excluded because they are not likely to provide a structure large enough. Additional crossings occur over the Kingsburg branch of the Kings River, Travers Creek, and Caesar Ditch. These crossings may potentially provide additional roost habitat for bats, however the structures crossing these waterways is not known.

Impacts and Significance

The permanent exclusion of bats from the replacement bridge will create long-term impacts to breeding colonies of three or more species of bats, including a CSC species. In addition, important night-roost habitat that is currently available in the existing bridge will be lost. For a discussion of roosting ecology and bridge habitat significance, please refer to Wildlife Research Associates 2003.

Approximately 120 individual *A. pallidus* bats were observed during my 2001 habitat assessment. Colonies of this species typically range from 20-200 (Hermanson and O'Shea 1983), with the largest populations being up to 325 individuals, comprising primarily females and young (Tatarian, personal observations). As a result, the *A. pallidus* population at the Kings River bridge is considered to be significant in size and the loss of this size colony would be considered a significant impact.

Mitigation Effectiveness

The proposal to provide off-structure mitigation roost(s) is unlikely to be sufficient to properly mitigate for the loss of the bridge roost habitat. Very few bat species are known to use free-standing bat houses in California – perhaps 5 of the 9 or 10 bat species that roost in bridges in the region of the Avenue 416 Bridge. Research into comparisons of bridge roost habitat vs. off-structure habitat is still in its infancy, however a pool of data is being formed, and some strong correlations are beginning to emerge.

In the course of conducting a research project for Caltrans on California bat mitigation techniques, solutions and effectiveness, we have found that off-structure mitigations for bats on bridges have been marginally or not at all effective (H.T. Harvey and Associates, et. al. in preparation). In many cases this is because the off-structure roosts are not properly designed for the species involved, do not have the capacity required, are installed too distant from the bridge, or in an area where they are subject to vandalism due to their high visibility. Also, free-standing bat houses require maintenance because wood is most typically and effectively used in their construction. In addition, bats may not recognize the artificial roost as such, and since bats are thought to rely on visual and sonic clues to investigate and establish new roosts, replacement roosts with a different search image may not be occupied by bats for many seasons, if at all.

This is not to say that artificial roosts (bat houses) can not be viable; over the past 13 years I have designed and constructed many successful bat houses, and participants in Bat Conservation International's Bat House Project have developed many effective designs. Various state Departments of Transportation have been experimenting with placement of roosts on their bridge structures, as has Caltrans. However, relatively few

stand-alone bat roost designs are suitable for large colonies, and all have limitations with respect to longevity, maintenance, succeptibility to vandalism, and species diversity. In a transportation setting, where rights-of-way are limited and acceptable roost locations are few, effectiveness of off-structure roost declines significantly, compared to on-structure mitigations (Tatarian, personal observations, Pierson, personal communications, Johnston, personal communications).

The most successful mitigation roost habitat closely replicates the original bridge habitat. The primary factors in selection of roosts by bats are temperature, humidity, size and orientation of openings, and size and surface texture of roost cavity or crevice. Loss of the expansion joint crevices on the Avenue 416 Bridge, which provide large amounts of protected roost area, is best mitigated by provision of crevices of similar dimensions and conditions, located on the new structure.

In cases where bats are permanently excluded from the original bridge roost crevice or cavity post-project, or when the replacement bridge elminates those roost features altogether, the next best chance for re-occupancy is from the inclusion of integral roost crevices, or add-on panels. Several examples will be discussed in this letter.

The success of bat houses installed as temporary mitigation during bridge construction is also unclear; those bat houses placed away from the construction area are less prone to disturbance from project activities, but less visible and recognizable as roost habitat to displaced bats. Despite this, some form of alternate temporary roost is generally advisable during construction with long term roost availability after construction.

Recommendations

It is understood that bridge engineers and maintenance staff are generally interested in not having bats roosting on bridges, or at least not in areas that require inspection and maintenance. If Tulare County is intent on permanent exclusion of all bats on the replacement bridge, then at the least, surveys should be conducted of all bridges in a 5-mile radius (a larger, 25-kilometer radius is now becoming standard, however the 5-mile radius is consistent with the original habitat assessment document (Wildlife Research Associates 2001, 2003). These surveys would be used to determine whether suitable habitat exists on these bridges for the population excluded from the Avenue 416 Bridge. A night-emergence survey of the bridge should be conducted to provide an accurate count and species list for the bridge prior to exclusion. Additionally, a radio-telemetry and wing banding study of a subset of the bats on the bridge should be conducted to track them to alternate roosts.

These studies are fairly extensive and will incur cost. Therefore, to minimize the expense of extensive surveys I recommend against permanent exclusion of the colony. It is feasible for on-structure mitigations to be cost-effective and safe. There are areas on many bridges that probably do not require close visual inspection or maintenance. Such areas can include the inside of a closure pour where expansion joints do not occur, and on the exterior surfaces of box girder designs, again, away from expansion joints or other maintenance and inspection-prone features. Augmentation roosts can provide deep crevices where bats can roost away from human activity, including normal bridge inspections. Depending upon the level of future maintenance or repairs required, some accomodations might have to be made for avoidance or temporary exclusion of bat colonies, but if the augmentation roosts are properly designed with input from engineering staff, these accomodations can be limited.

In the past few years, new mitigation designs have been developed and are being tested. Information provided in my 2001 habitat assessment does not include the following methods for roost replacement in box girder and bulb-T girder bridges. The following basic designs recommendations are provided based upon the bridge design finally implemented. These are generalized, and would require the finalized bridge design to be known, along with updated surveys of the bat colony to determine species and population.

Impact Alternative 3B: Two Separate Box Girder Roadways

Mitigation Roost Design 3B: Two-inch-thick, cast lightweight concrete panels mounted on spacers on the two facing exterior box girder surfaces. These should be installed longitudinally, the top edge of the panels should be capped, and the panels mounted as close to the deck/girder joint as reasonable. They should extend down at least 36", up to 72" if possible. The gap created by mounting on spacers should be equal to the size of the gap in the existing expansion joints, and can be varied by mounting on tapered spacers. Total roost area should replicate that available in the existing bridge. Please see attached figures.

This mitigation will provide primarily day-roost habitat, and will not replace night-roost habitat lost with the box girder replacement design.

Impact Alternative 3C: Two Separate Bulb-T Girder Roadways

Mitigation Roost Design 3C: Two-inch thick, cast lightweight concrete panels mounted on vertical surfaces of selected Bulb-T Girders. These should be installed longitudinally, the top edge of the panels should be capped, and the panels mounted as close to the deck/girder joint as reasonable. Panel height should be at least 24", although 36" or more is preferable. The bottom, open portion of the panel shall be mounted at least 12" above the girder bulb to permit unrestricted ingress/egress. The gap created by mounting on spacers should be equal to the size of the gap in the existing expansion joints, and can be varied by mounting on tapered spacers. Total roost area should replicate that available in the existing bridge. Please see attached figures.

This design will provide primarily day-roost habitat. To replace lost night roost habitat, lateral interstices between Bulb-T girders should be designed-in, such as where girders rest on pier platforms, to create pockets similar to those found in the existing bridge that will trap warm air.

Impact Alternative 4B: Single-width Box Girder Design of Two Sections With Closure Pour

Mitigation Roost Design 4B(1): Two-inch-thick, cast lightweight concrete panels mounted on spacers one or both of the vertical surfaces of the closure pour. These should be installed longitudinally, the top edge of the panels should be capped, and the panels mounted as close to the deck/girder joint as reasonable. They should extend down at least 36", up to 72" if possible. The gap created by mounting on spacers should be equal to the size of the gap in the existing expansion joints, and can be varied by mounting on tapered spacers. Total roost area should replicate that available in the existing bridge. Please see attached figures.

Mitigation Roost Design 4B(2): Hanging, cast lightweight concrete single-crevice sections mounted on the ventral surface of the closure pour. These should be installed centrally along the axis of the closure pour. They should extend down at least 36", further if possible. Total roost area should replicate that available in the existing bridge. Please see attached figures.

These designs will provide primarily day-roost habitat, and will probably only replace a small percentage of existing night-roost habitat lost with the box girder replacement design. To replace lost night roost habitat, lateral interstices should be designed into the closure pour to create pockets similar to those found in the existing bridge that will trap warm air.

Impact Alternative 4C: Single-Width Bulb-T Girder Roadways With Closure Pour

Mitigation Roost Design 4C(1): Two-inch thick, cast lightweight concrete panels mounted on vertical surfaces of selected Bulb-T Girders. These should be installed longitudinally, the top edge of the panels should be capped, and the panels mounted as close to the deck/girder joint as reasonable. Panel height should be at least 24", although 36" is preferable. The bottom, open portion of the panel shall be mounted at least 12" above the girder bulb to permit unrestricted ingress/egress. The gap created by mounting on spacers should be equal to the size of the gap in the existing expansion joints, and can be varied by mounting on tapered spacers. Total roost area should replicate that available in the existing bridge. Please see attached figures.

Mitigation Roost Design 4C(2): Hanging, cast lightweight concrete single-crevice sections mounted on the ventral surface of the closure pour. These should be installed centrally along the axis of the closure pour. They should extend down at least 36", further if possible. Total roost area should replicate that available in the existing bridge. Please see attached figures.

These designs will provide primarily day-roost habitat. To replace lost night roost habitat, lateral interstices between Bulb-T girders should be designed-in, such as where girders rest on pier platforms, to create pockets similar to those found in the existing bridge that will trap warm air.

Finally, as noted above, follow-up bat surveys, consisting of a night-emergence survey, should be conducted after a bridge design has been selected, so that the precise locations of panels can be determined, and to provide a current population estimate and species identification. In addition, mitigations should be monitored with night surveys after construction - 5 years is typical - and would help to provide information on efficacy of the mitigations and insights into adaptive management that may be required to correct problems with the mitigation roosts.

I hope this letter answers your questions about suitable mitigations for the Avenue 416 Bridge. Please call or email with any questions.

Sincerely,

Greg Tatarian

References

Hermanson, John W., and T.J. O'Shea. 1983. *Antrozous pallidus*. Mammalian Species account No. 213, pp. 1-8. The American Society of Mammalogists. December.

H.T. Harvey and Associates, G. Tatarian, and E.D. Pierson. In preparation. California Bat Mitigation Techniques, Solutions and Effectiveness. Prepared for Gregg Erickson, Chief, Office of Biological Studies and Technical Assistance. California Department of Transportation (Caltrans).

Wildlife Research Associates. 2001. Preliminary Report - Bat Habitat Assessment for Kings River Bridge at Avenue 416, Tulare County, California. Prepared for Par Environmental Services, Inc. October 19.

Wildlife Research Associates. 2003. Bat Habitat Assessment, Including a Discussion of Impacts and Mitigations. Kings River Bridge, Avenue 416. Tulare County, California. January 17, 2003.

Personal Communications

Johnston, David. Senior Wildlife Biologist, H.T. Harvey and Associates. Telephone and email discussions. 2004.

Moyer, Patricia. Associate Biologist, San Joaquin Environmental Management Branch, California Department of Transportation. Telephone and email discussions. 12/6-12/13/04.

Pierson, E. D. Bat Consultant. Telephone and email discussions 2003-2004.

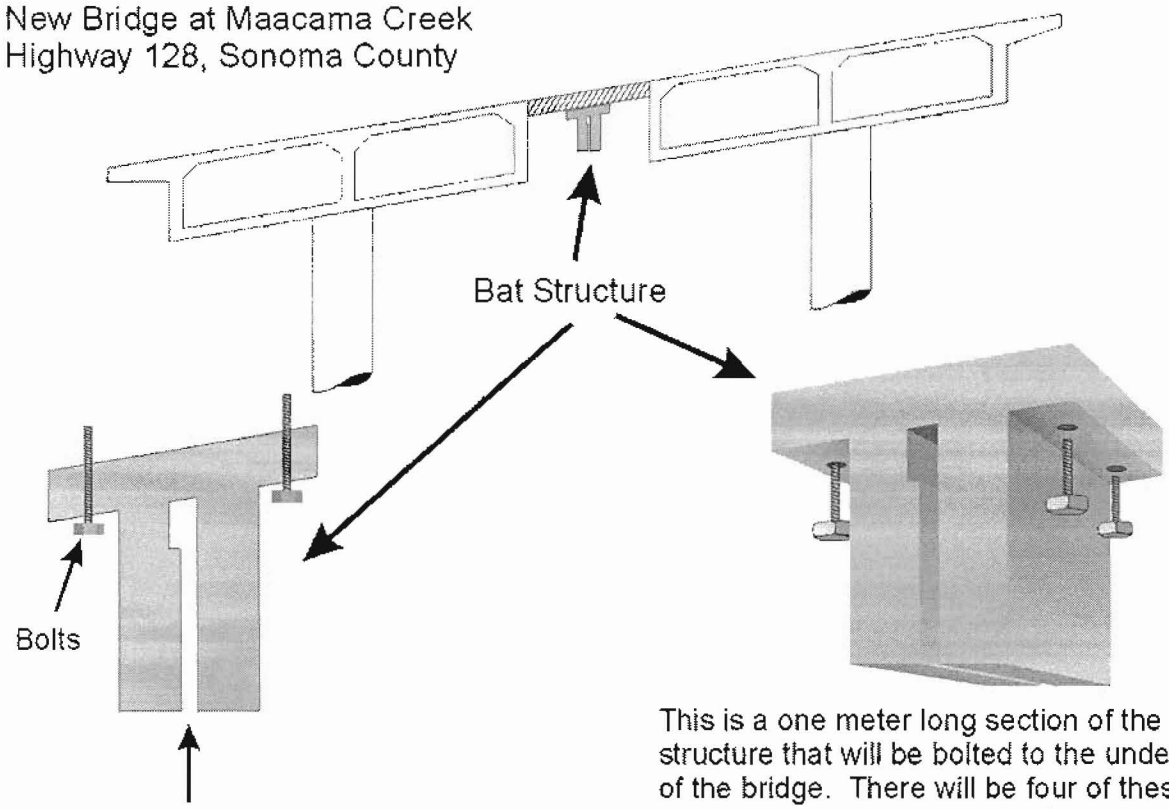
Sanders, Susan. Par Environmental Services Inc. Telephone conversation. 12/13/04.

Example of design described in Mitigations 3B, 3C, 4B(1) and 4C(1), as designed for San Joaquin River (Skaggs) Bridge (Caltrans photo).

Example of design described in Mitigations 4B(2) and 4C(2), as designed for Maacama Creek Bridge (Caltrans drawing).

Summary of the Maacama Creek Bat Structure

New Bridge at Maacama Creek
Highway 128, Sonoma County



The Crevice is 1.75 inches wide and about 18 inches deep. Toward the top of the crevice there is a one inch wide ledge about four inches from the top.

This is a one meter long section of the bat structure that will be bolted to the underside of the bridge. There will be four of these bolted in a row forming a four meter long crevice. There will be two four meter section, one on each side of the center pile of the bridge.

Memorandum

Flex your power!
Be energy efficient!

JAVIER ALMAGUER
Environmental Planner
San Joaquin Valley Management Branch

Date: October 6, 2006

File: Ave 416/Mt View
2-4 Lane Widening
Local Assistance

: CARRIE BLICKENSTAFF CB
Associate Biologist
Central Region Biology Branch

:ct: San Joaquin kit fox surveys

This memo is meant to summarize the field surveys for San Joaquin kit fox (*Vulpes macrotis mutica*) (kit fox) that the Caltrans biology branch recently conducted for the Avenue 416 two to four-lane widening project in Fresno and Tulare Counties. Due to the below list of recent occurrences and as well as the best available scientific information, it was determined that surveys should be conducted in order to more accurately determine the potential affect that the proposed project may have on this species.

- California Department of Fish and Game (DFG) 2003, road kill on State Route (SR) 41 near Harlan Avenue in Southern Fresno County. 18 miles from project site.
- Rachel Kleinfelter/CT 2002, road kill near intersection of SR 245 and SR 198 in Tulare County. 26 miles from project site.
- Caltrans 2002, sighting during surveys near SR 41 and Grangeville Road in Kings County. 21 miles from project site.
- Caltrans 2001, sighting during surveys near Goshen in Tulare County. 15 miles from project site.
- Caltrans 2000, sighting during surveys near SR 198 and 19th Avenue, Kings County. 26 miles from project site.
- Endangered Species Recovery Program 1999, potential kit fox den near SR 41 and Jackson Avenue, Kings County. 28 miles from project site.
- Tim Kroeker/DFG (pers. comm.) 1972-80, north of Sequoia Field and south of SR 201. 7 miles from project site.

Spotlighting surveys were conducted according to the DFG *Region 4 Approved Survey Methodologies for Sensitive Species*, on September 26, 27, 28, 29 and October 2 and 3. These surveys extended 2 days outside of the optimum survey period and therefore a discussion with the DFG and the United States Fish and Wildlife Service should ensue to insure further field surveys, such as scent stations, would not be necessary.

There were no kit foxes or other special-status species observed during the spotlighting surveys. Additionally, there was very little common wildlife observed during the extensive surveys. The land use in the project area was approximately 90 percent agriculture and 10 residential or urban. There were 2 separate parcels, approximately totaling 5 acres that are fallow and/or used for pasture that may provide marginal foraging habitat. It should be noted that herbicides or pesticides had recently been applied to much of the agriculture in the area, possibly affecting the presence of the kit fox or its prey.

The results of these surveys should be taken into consideration along with other field surveys conducted for this project in order to determine an appropriate affect determination.

I have attached the original data sheets from these field surveys for your file. Please let me know if you have any questions.

Attachment

c: Zachary Parker, Central Region Biology Branch Chief, Acting

FIELD OBSERVATIONS

Date: 9/26/06 Observer(s): Rachel Kleinfelter, Heather Baker, Sarah Keyes, Sarah Soliman Page ____ of ____

Location: Mountain View / 416

County: TUL State: CA T ____ R ____ S ____ ____ ¼ of ____ ¼ of ____ ¼ of ____

EA 965100 3ENRV 6ENVRREV Route: 416 PM: ____

Moon Phase: (N) 1st F L Sky (Beaufort Code): 0 Wind (Beaufort Code): 0-1

Temp – Start: 81.1°F End: ____ Miles – Start: ____ End: ____

24 hr Time – Begin: 19:57 End: ____ Comments: Tulare Co Project

SPECIES		TIME	MILE	TYPE	COMMENTS
ottontail	1	20:02			
at	1	20:05			
ottontail	2	20:07			
at	1	20:11			
at	1	20:18			
at	1	20:21			
alldeer	1	20:32			
at	1	20:46			
t	1	21:13			
ttontail	1	21:14			
at	1	21:18			
at	2	21:19			
at	1	9:33			
ottontail	1	21:41			
ack-tailed hare	1	21:41			
ottontail	1	21:43			
ing	1	21:48			
og	2	21:50			
ing	1	21:52			
ottontail	1	21:55			

FIELD OBSERVATIONS

Date: _____ Observer(s): _____ Page 1 of 3

Location: _____

County: _____ State: _____ T ____ R ____ S ____ ____¼ of ____¼ of ____¼ of ____

Rte: _____ Route: _____ PM: _____

Moon Phase: N 1st F L Sky (Beaufort Code): _____ Wind (Beaufort Code): _____

Temp – Start: _____ End: _____ Miles – Start: _____ End: _____

24-hr Time – Begin: _____ End: _____ Comments: _____

SPECIES	#	TIME	MILE	TYPE	COMMENTS
Cat	1	22:02			
dog	1	22:04			
Cat	1	22:05			
Cat	1	22:06			
bullfrog	2	22:12			
dog	1	22:16			
barn owl	1	22:16			
dog	1	22:21			
cat	1	22:21			
Killdeer	1	22:23			
Cat	1	22:23			
opossum	1	22:27			
					North Side
Cat	2	22:56			
Cat	2	23:00			
Cat	1	23:02			
Cat	1	23:15			
Cat	1	23:33			
dog	1	23:34			
black-tailed hare	1	23:59			

FIELD OBSERVATIONS

Date: 9/26/00 Observer(s): _____ Page 2 of 2

Location: _____

County: _____ State: _____ T ____ R ____ S ____ ____¼ of ____¼ of ____¼ of ____

EA: _____ Route: _____ PM: _____

Moon Phase: N 1st F L Sky (Beaufort Code): _____ Wind (Beaufort Code): _____

Temp – Start: _____ End: _____ Miles – Start: _____ End: _____

24-hr Time – Begin: _____ End: _____ Comments: _____

SPECIES	#	TIME	MILE	TYPE	COMMENTS
dog	1	23:59			
Cottontail	1	00:02			
Black-tailed hare	1	00:03			
barn owl	1	00:09			
Killdeer	1	00:10			
dog	1	00:15			
Black-tailed hare	1	00:19			
Great horned owl	1	00:19			
cat	1	00:21			
dog	1	00:47			
barn owl	2	00:56			
cat	1	1:13			
Cottontail	1	1:18			
cat	2	1:19			

FIELD OBSERVATIONS

Date: 9/27/06 Observer(s): Carrie Bickenstaff, Christy Mixios, Javier, Heather Baker Page 1 of 2

Location: Dinuba

County: Tul State: CA T ____ R ____ S ____ ____¼ of ____¼ of ____¼ of ____

EA: ____ Route: ____ PM: ____

Moon Phase: (N) 1st F L Sky (Beaufort Code): ____ Wind (Beaufort Code): ____

Temp – Start: 77.4 End: 63.5 Miles – Start: 0.0 End: ____

24-hr Time – Begin: 8:00PM End: 1:57 Comments: ____

SPECIES	#	TIME	MILE	TYPE	COMMENTS
feline	1	8:03	0.1		
feline	1	8:04			
dog	1	8:05			
dog	1	8.09			
feline	1	8.16			
feline	1	8:18			
dog	1	8.31			
feline	1	8.45			
OPPOSSUM	1	8:51			
dog	1	8:57			
cat	1	9:26			
cement lions	2	9:30			
cat	1	9:35			
cat	1	9:36			
dogs	4	9.38			
cat	1	9:46			
cat	1	10:15			
ontail	1	10:31			
tail	1	10.39			
cat	1	11:03			South Side

FIELD OBSERVATIONS

Date: 9/27/06 Observer(s): C. Blick, C. Macias, H. Baker, J. Page 2 of 2

Location: Tul 4/10 / Mountain View

County: Tul State: CA T ___ R ___ S ___ ___ ¼ of ___ ¼ of ___ ¼ of ___

EA: Local Ass. Route: 4/10 PM: ___

Moon Phase: (N) 1st F L Sky (Beaufort Code): ___ Wind (Beaufort Code): ___

Temp – Start: ___ End: ___ Miles – Start: ___ End: ___

24-hr Time – Begin: ___ End: 1:57 Comments: ___

SPECIES	#	TIME	MILE	TYPE	COMMENTS
mase	1	1110			
cat	1	1124			
cottontail	1	1124			
cat	1	1144			
dog	1	1152			
cat	1	1159			
cat	1	1204			
bth	1	1224			
Short eared owl	1	1233			
cat	1	1238			
cat	1	1251			
owl spp.	1	1255			
cat	1	1:00			
dog	1	1:01			
bth	111	1:05			
dog	1	1:10			
dog	1	1:14			
cottontail	1	1:19			
bullfrogs	1	1:22			
unidentified	1	1:30			488

Killdeer 11 1:32 dogs 1111 1:54
Cottontail 1 1:39 cat 1 1:55
Cat 11 1:51

FIELD OBSERVATIONS

Date: 9/28 Observer(s): Macias, Blick, Baker, Javier Page 1 of 2

Location: _____

County: TUL State: CA T ____ R ____ S ____ ____¼ of ____¼ of ____¼ of ____

LA: _____ Route: _____ PM: _____

Moon Phase: 1st F L Sky (Beaufort Code): _____ Wind (Beaufort Code): 2

Temp – Start: 72.9 End: 69.6 Miles – Start: 0.0 End: _____

24-hr Time – Begin: 8:06 End: 11:35 Comments: _____

SPECIES	#	TIME	MILE	TYPE	COMMENTS
hare	2	8:11			
"	1	8:28			
feline	1	8:34			
feline	1	9:01			
feline	1	9:02			
dog	1	9:15			
feline	1	9:19			
coyote	1	9:38			S on Smith @ Rose
cat	1	10:10			
cottontail	1	10:22			
hare	2	10:36			
cat	1	10:43			
cat	2	10:50			
"	1	10:53			
cottontail	4	11:04			
"	2	11:05			
dog side hare	1	11:31			
cat	1	11:34			
hare	1	11:34			
hare	1	11:35			

FIELD OBSERVATIONS

Date: 9-28 Observer(s): Macias, Blick, Baker, Almaguero Page 2 of 2

Location: _____

County: Tul State: CA T ____ R ____ S ____ ____¼ of ____¼ of ____¼ of ____

EA: _____ Route: _____ PM: _____

Moon Phase: N 1st F L Sky (Beaufort Code): _____ Wind (Beaufort Code): _____

Temp – Start: _____ End: _____ Miles – Start: _____ End: _____

24-hr Time – Begin: _____ End: _____ Comments: _____

SPECIES		TIME	MILE	TYPE	COMMENTS
cat	3	1139			
dog	2	1146			
cat	1	1149			
cat	1	1210			
cat	1	1215			
cat	1	1225			
cat	1	1243			
Cat	1	12:55			
Cat	1	12:57			
Cat	1	1:08			
Cat	1	1:11			
Cat	1	1:12			
Cat	1	1:22			
Hare	1	1:25			
Bunny	1	1:26			
Cotton Tail	1	1:26			
Cotton Tail	1	1:28			
Hare	1	1:30			

FIELD OBSERVATIONS

Date: 29 Sept 2006 Observer(s): K Leinfelter, Keys, Solomon, Almaguer, Javier Page 1 of 2

Location:

County: State: T R S ¼ of ¼ of ¼ of

EA: Route: PM:

Moon Phase: N 1st F L Sky (Beaufort Code): 0 Wind (Beaufort Code): 0

Temp – Start: 81.5°C End: 67.2°C Miles – Start: End:

24-hr Time – Begin: 19:35 End: 1:30 Comments:

SPECIES	#	TIME	MILE	TYPE	COMMENTS
cottontail	1	19:35			
Cat	1	19:43			
Cat	1	19:44			
Cat	1	19:50			
Cat	1	19:54			
frog	1	19:59			
cottontail	1	20:02			
cottontail	1	20:05			
cottontail	1	20:11			
Cat	1	20:13			
opossum	1	20:14			
Cat	1	20:23			
Cat	2	20:31			
Cat	1	20:41			
Cat	1	20:52			
cottontail	2	20:57			
Cat	1	20:58			
killdeer	1	21:02			
cottontail	8	21:02			
Cat	1	21:04			

29 Sept. 2006

Species	#	Time
cottontail	1	21:04
Cat	1	21:05
Killdeer	1	21:22
Cottontail	1	21:24
cats	1	21:25
cottontail	2	21:49
cottontail	1	21:53
Cottontail	1	22:43
Killdeer	1	22:43
dog	1	22:56
cottontail	1	22:58
cottontail	2	23:01
cat	1	23:11
dog	1	23:15
Cat	1	23:16
Cat	2	23:18
cat	1	23:21
dog	1	23:37
cottontail	2	23:47
cat	2	23:47
cat	1	23:54
cat	1	00:02
cat	1	00:12
cat	1	00:18

FIELD OBSERVATIONS

Date: 10/2/06 Observer(s): H. Bakes, R. Klemfelter, K. O'Connor, S. Keys Page 1 of 2

Location: Tul 4/6 / Mountain View

County: TUL State: CA T ____ R ____ S ____ ____ ¼ of ____ ¼ of ____ ¼ of ____

EA: ____ Route: 4/6 PM: ____

Moon Phase: N (1st) F L Sky (Beaufort Code): 2 Wind (Beaufort Code): 1

Temp – Start: 70.2 End: 62.4 Miles – Start: ____ End: ____

24-hr Time – Begin: 19:54 End: 24:23 Comments: ____

SPECIES	#	TIME	MILE	TYPE	COMMENTS
Killdeer		1959			
Cottontail		2002			
Killdeer	15	2007			
Barn Owl		2008			
Unk Canid		2011			
Killdeer	20	2016			
Cottontail		2018			
Cat		2021			
Dogs	2	2028			
Unk Canid		2032			
Cottontail		2036			
Cat		2053			
GBH		2058			
Cat		2103			
Cat		2104			
Cat		2104			
Cottontail		2112			
Cat		2114			
Cat	III	2205			North side 4/6
Cottontail		2206			

FIELD OBSERVATIONS

Date: 10/2/04 Observer(s): RKleinfelder, H Baker, S Keys, K O'Connor Page 2 of 2

Location: TUL 416

County: _____ State: _____ T ____ R ____ S ____ ____¼ of ____¼ of ____¼ of ____¼

EA: _____ Route: _____ PM: _____

Moon Phase: N (1st) F L Sky (Beaufort Code): _____ Wind (Beaufort Code): _____

Temp – Start: 70.2 End: 62.4 Miles – Start: _____ End: _____

24-hr Time – Begin: 19:59 End: 24:23 Comments: _____

SPECIES	#	TIME	MILE	TYPE	COMMENTS
cottontail	1	22:07			
cat	1	22:19			
Killdeer	1	22:20			
cottontail	1	22:45			
cat	1	22:51			
cat	1	23:08			
Killdeer	1	23:16			
cat	1	23:21			
dog	11	23:21			
cottontail	1	23:27			
dog	1	23:35			
cat	1	23:38			
cottontail	11	23:40			
dog	1	23:41			
dog	1	23:43			
cottontail	1	23:47			
cat	1	23:51			
cat	1	23:58			
cat	11	2400			
cat	1	24:10			
dog	1	24:11			

FIELD OBSERVATIONS

Date: 10/03/06 Observer(s): Nunes, Keys, Macias, Soliman Page 1 of 2

Location:

County: Tul State: T R S ¼ of ¼ of ¼ of ¼

EA: Route: PM:

Moon Phase: N (1st) F L Sky (Beaufort Code): Wind (Beaufort Code): 0 – 1

Temp – Start: 75.2 End: 60.8 Miles – Start: End:

24-hr Time – Begin: 19:25 End: 00:30 Comments:

SPECIES	#	TIME	MILE	TYPE	COMMENTS
N cottontail	2	19:27			
cat	1	19:30			
cat	1	19:44			
cat	2	19:46			
dog	2	19:53			
cat	1	20:01			
cat	2	20:03			
cat	1	20:33			
cat	1	20:46			
dog	2	20:49			
cat	1	21:27			
cat	1	20:47			
cottontail	>10	20:51			
cat	1	22:18			
cat	1	22:24			
cat	1	22:27			
opossum	1	22:44			
cottontail	3	22:55			
cat	1	23:00			

3674564

FIELD OBSERVATIONS

Date: 10/3/06 Observer(s): Nunez, Marcus, Keys, Soliman Page 2 of 2

Location: _____

County: _____ State: _____ T ____ R ____ S ____ ____¼ of ____¼ of ____¼ of ____¼

EA: _____ Route: _____ PM: _____

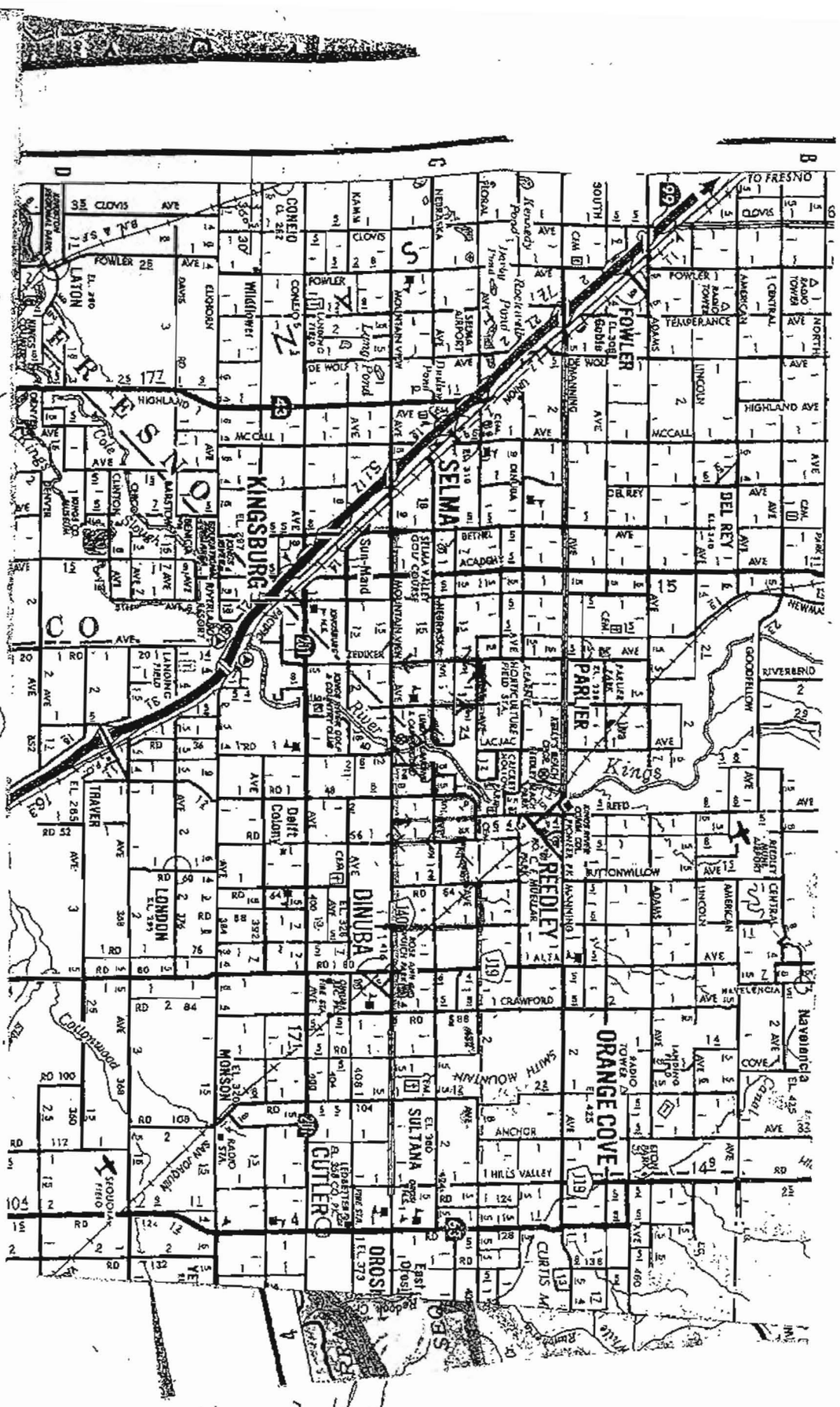
Moon Phase: N 1st F L Sky (Beaufort Code): _____ Wind (Beaufort Code): _____

Temp – Start: _____ End: _____ Miles – Start: _____ End: _____

24-hr Time – Begin: _____ End: _____ Comments: _____

SPECIES	#	TIME	MILE	STATE	COMMENTS
bullfrog	1	23:03			
Shorebird	1	23:20			
cottontail	3	23:23			
Cottontail	1	23:29			
barn owl	1	23:29			
cottontail	1	23:30			
Cat	1	23:30			
cottontail	1	23:37			

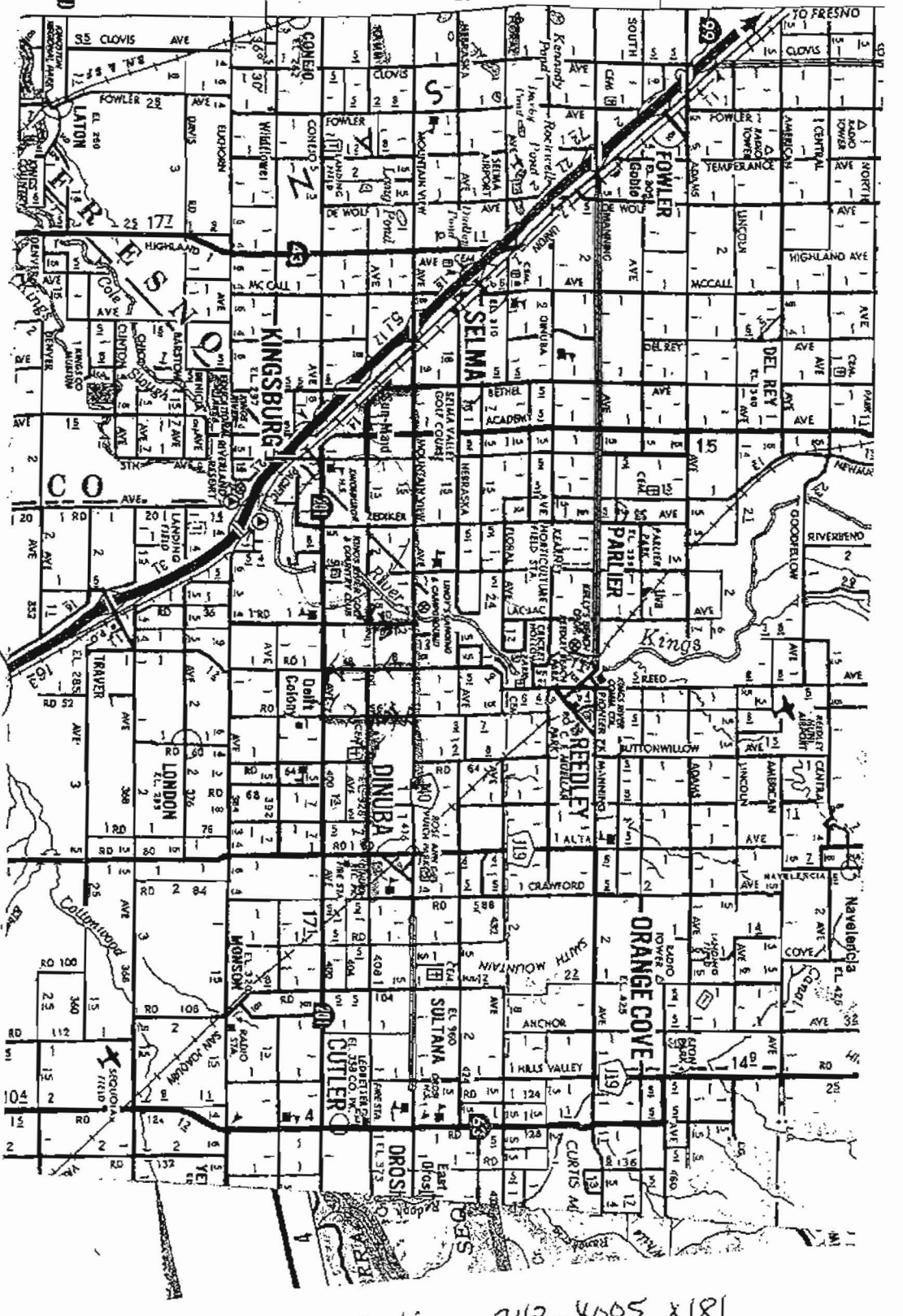
- West 426
- S. 56 to Mon View
- West on Mon V
- No 52 curves @ river + turns into 48.
- South 48
- West 424
- curves into 42
- south on 42 to Mont. View (46)
- West Mt. View
- No 38
- West on Nebraska
- No Smith
- West Floral
- South Zediker
- West Mt. View
- No. Madsen
- West Saginaw
- No Mendouno
- West Rose



- South Academy & South on Bethel
- East West Nebraska

South Bethel
East Kamm
South Madson
East Conejo
No on 24
Rt. Mt. View
South Smith
+ Carves into Rd. 29
going south.
East on Ave 400
No on 76
East on 408/Kamm
No on Rd 40
East on 416 (Mt. View)
South Rd. 48
East Conejo
No on 56
East on 408

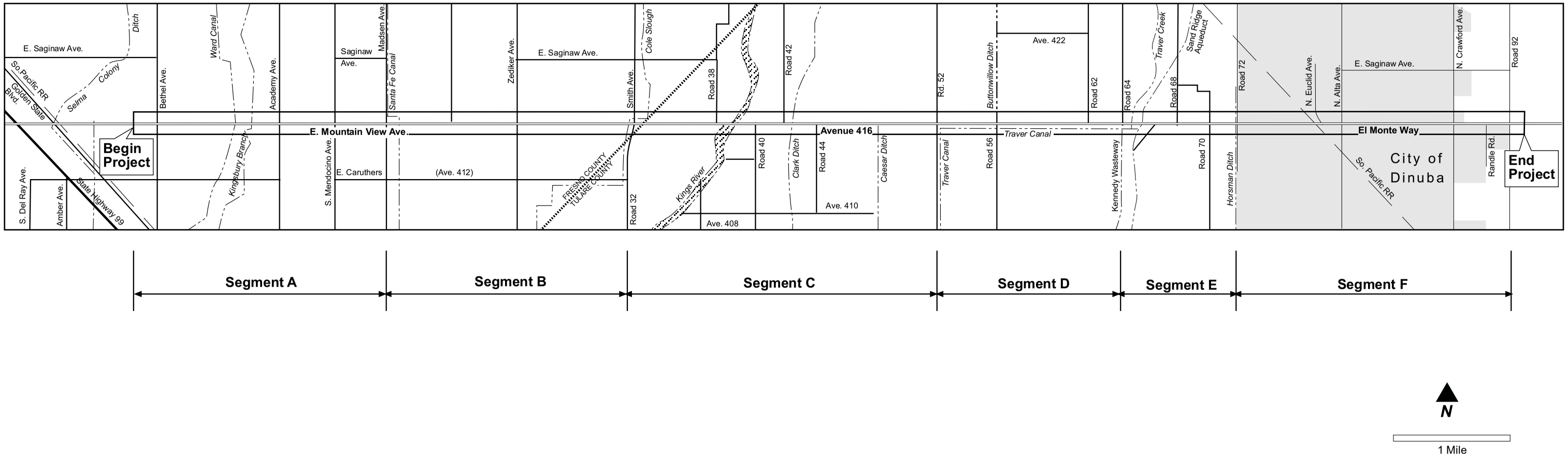
Sarah Solima ~~Con Sheriff~~ - Rachel



Clu Cotter 243-4005 x181
ccotter@dfg.ca.gov

APPENDIX I

Geometric Plans for Project Alternatives



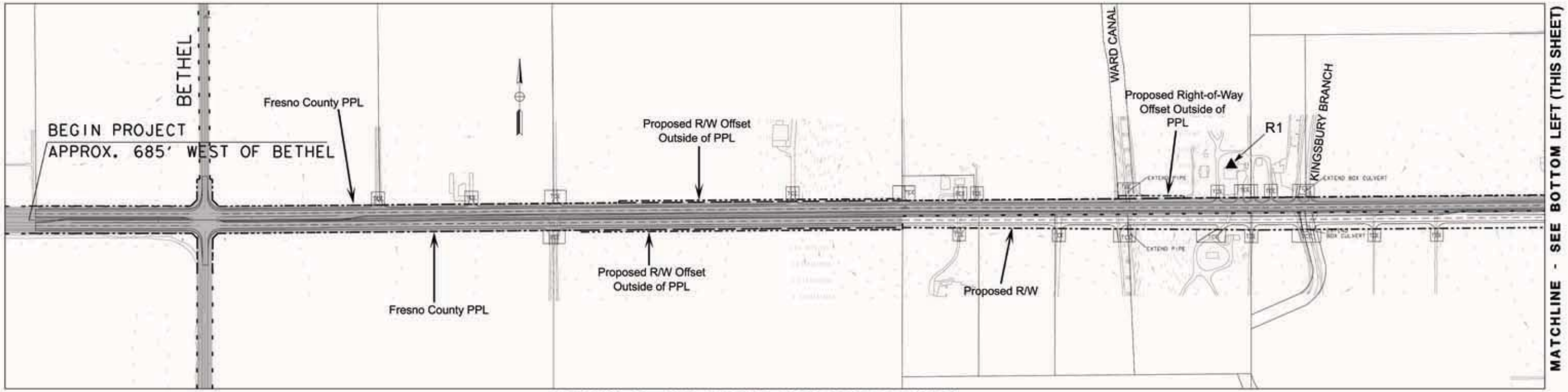
Alternative 1 = Figures 2-8, and Figure 16

Alternative 2 = Figures 9-15, and Figure 16

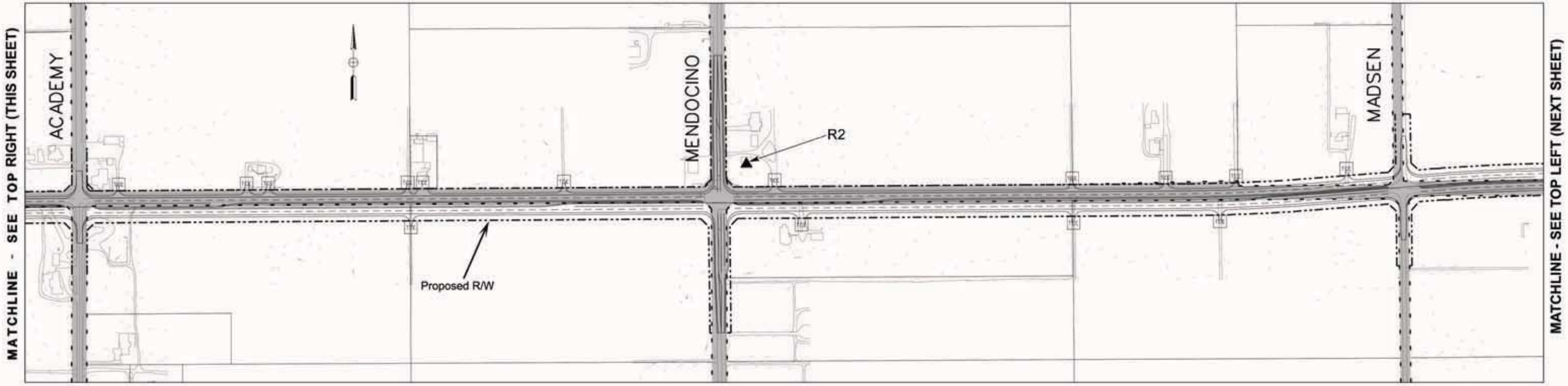
Appendix I : Geometric Drawings of Project Alternatives

Figure 1 : Key Map of Project Segments

Mountain View Avenue/Avenue 416/El Monte Way Widening Project
Fresno and Tulare Counties



SEGMENT A : ALTERNATIVE 1 (FRESNO COUNTY)



SEGMENT A : ALTERNATIVE 1 (FRESNO COUNTY)

Existing Right-of-Way

Fresno County Precise Plan Line (PPL)
Proposed Right-of-Way (R/W) = Unshaded Area Within PPL Boundary
Proposed Right-of-Way Offset (Outside of PPL)

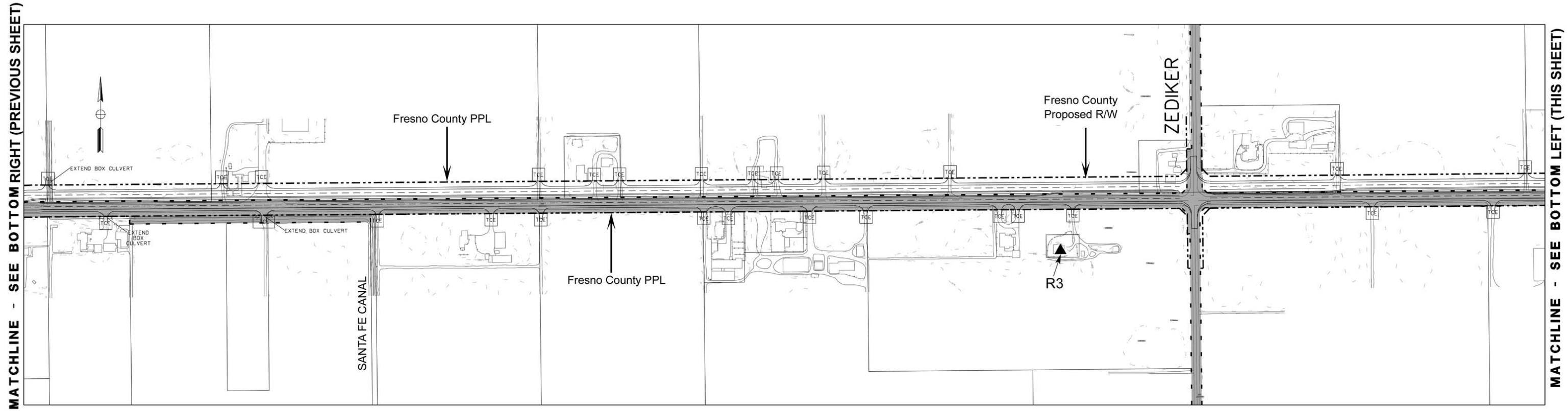
Acronyms and Abbreviations
R/W = Refers to County or City Right-of-Way, Unless Otherwise Noted
TCE = Temporary Construction Easement

R = Noise Study Receptor Location

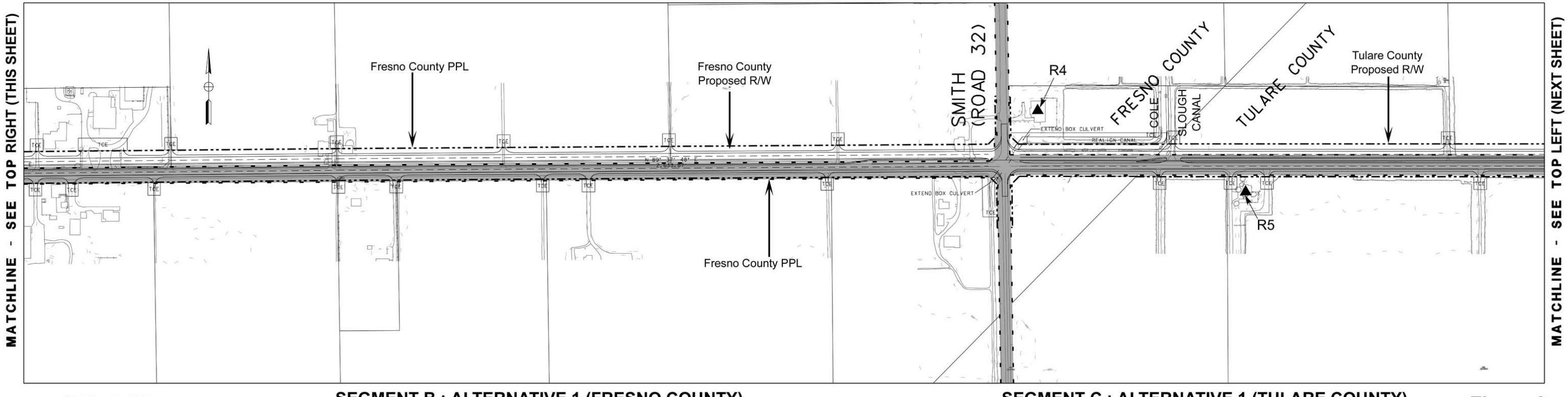
SCALE: 1" = 400'
0 100 200 400 600

Figure 2
Alternative 1
Segment A

Mountain View Avenue/Avenue 416/El Monte Way Widening Project



SEGMENT B : ALTERNATIVE 1 (FRESNO COUNTY)



SEGMENT B : ALTERNATIVE 1 (FRESNO COUNTY)

SEGMENT C : ALTERNATIVE 1 (TULARE COUNTY)

SCALE: 1"=400'

0 100 200 400 600

Existing Right-of-Way (R/W)

Fresno County Precise Plan Line (PPL) /Tulare County Proposed Right-of-Way

Proposed Right-of-Way (R/W) = Unshaded Area Within PPL Boundary

Proposed Right-of-Way Offset (Outside of PPL)

Acronyms and Abbreviations

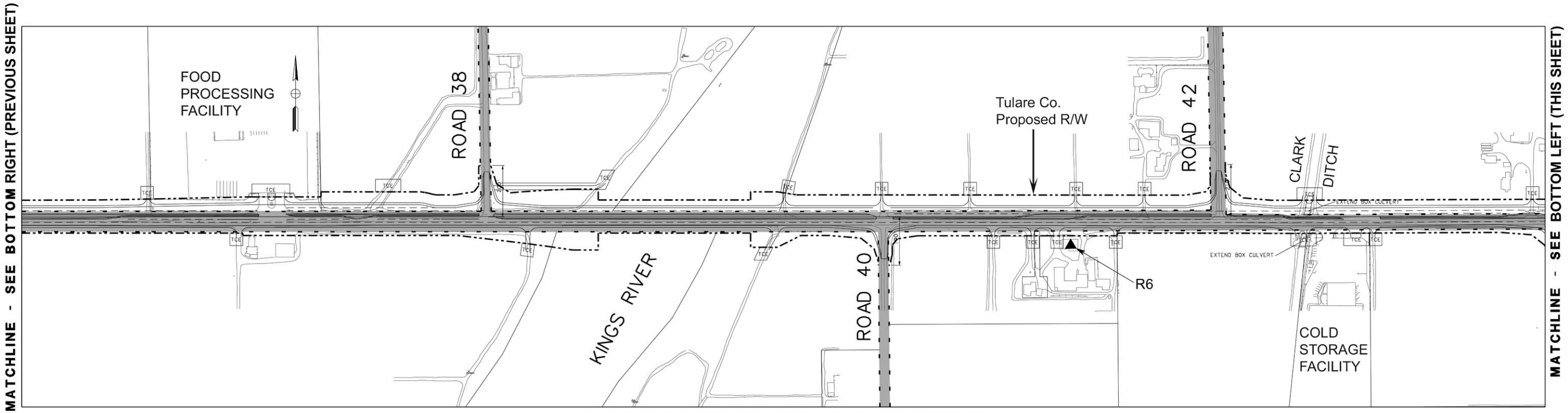
R/W = Refers to County or City Right-of-Way, Unless Otherwise Noted

TCE = Temporary Construction Easement

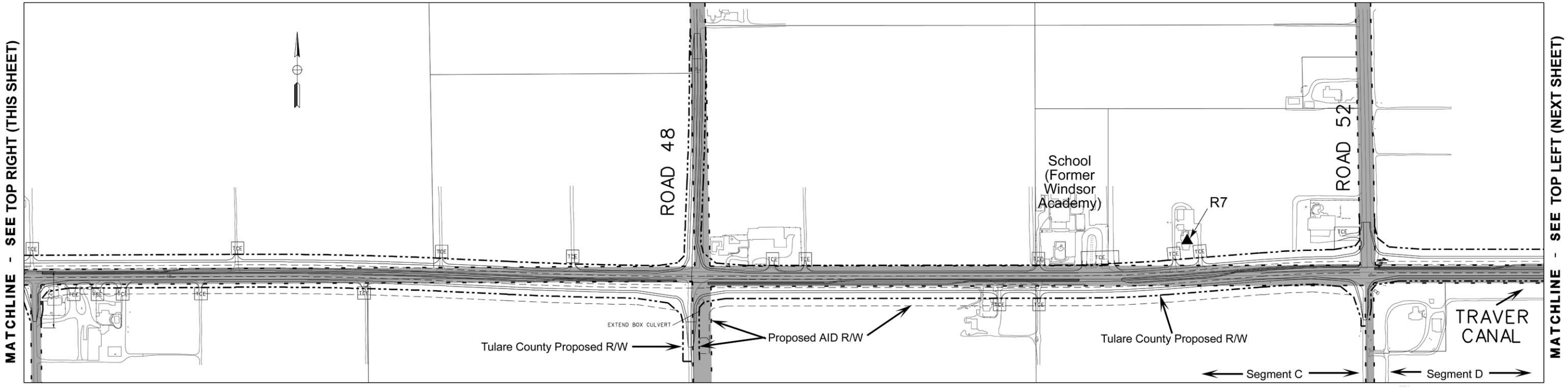
R=Noise Study Receptor Location

Figure 3
Alternative 1
Segment B

Mountain View Avenue/Avenue 416/El Monte Way Widening Project



SEGMENT C: ALTERNATIVE 1 (TULARE COUNTY)



SEGMENT C : ALTERNATIVE 1 (TULARE COUNTY)

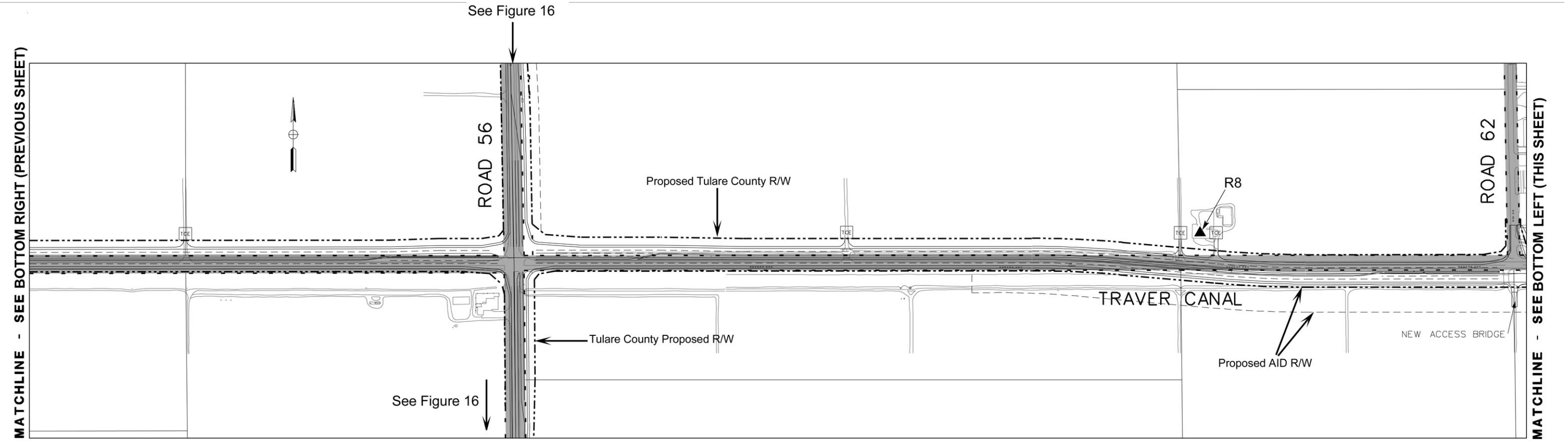
Proposed Right-of-Way (R/W)
Existing Right-of-Way (R/W)

Acronyms & Abbreviations
AID = Alta Irrigation District
R/W = Refers to County or City Right-of-Way Unless Otherwise Noted
TCE = Temporary Construction Easement

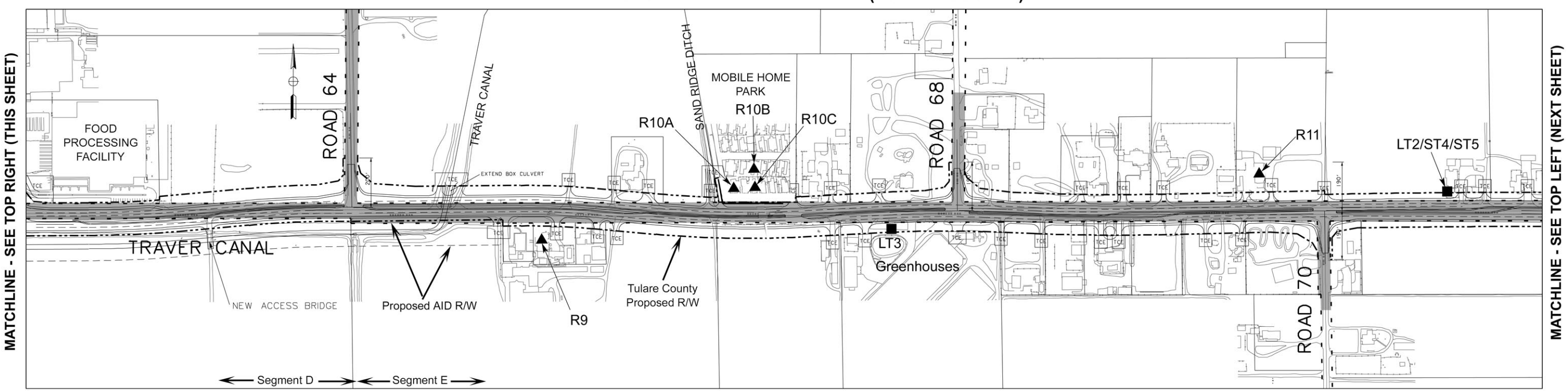
R = Noise Study Receptor Location

SCALE: 1" = 400'
0 100 200 400 600

Figure 4
Alternative 1
Segment C
Mountain View Avenue/Avenue 416/El Monte Way Widening Project



SEGMENT D : ALTERNATIVE 1 (TULARE COUNTY)



SEGMENT D : ALTERNATIVE 1 (TULARE COUNTY) **SEGMENT E : ALTERNATIVE 1 (TULARE COUNTY)**

Proposed Right-of-Way (R/W)
Existing Right-of-Way (R/W)

Acronyms & Abbreviations
AID = Alta Irrigation District
R/W = Refers to County or City Right-of-Way Unless Otherwise Noted
TCE = Temporary Construction Easement

R=Noise Study Receptor Location

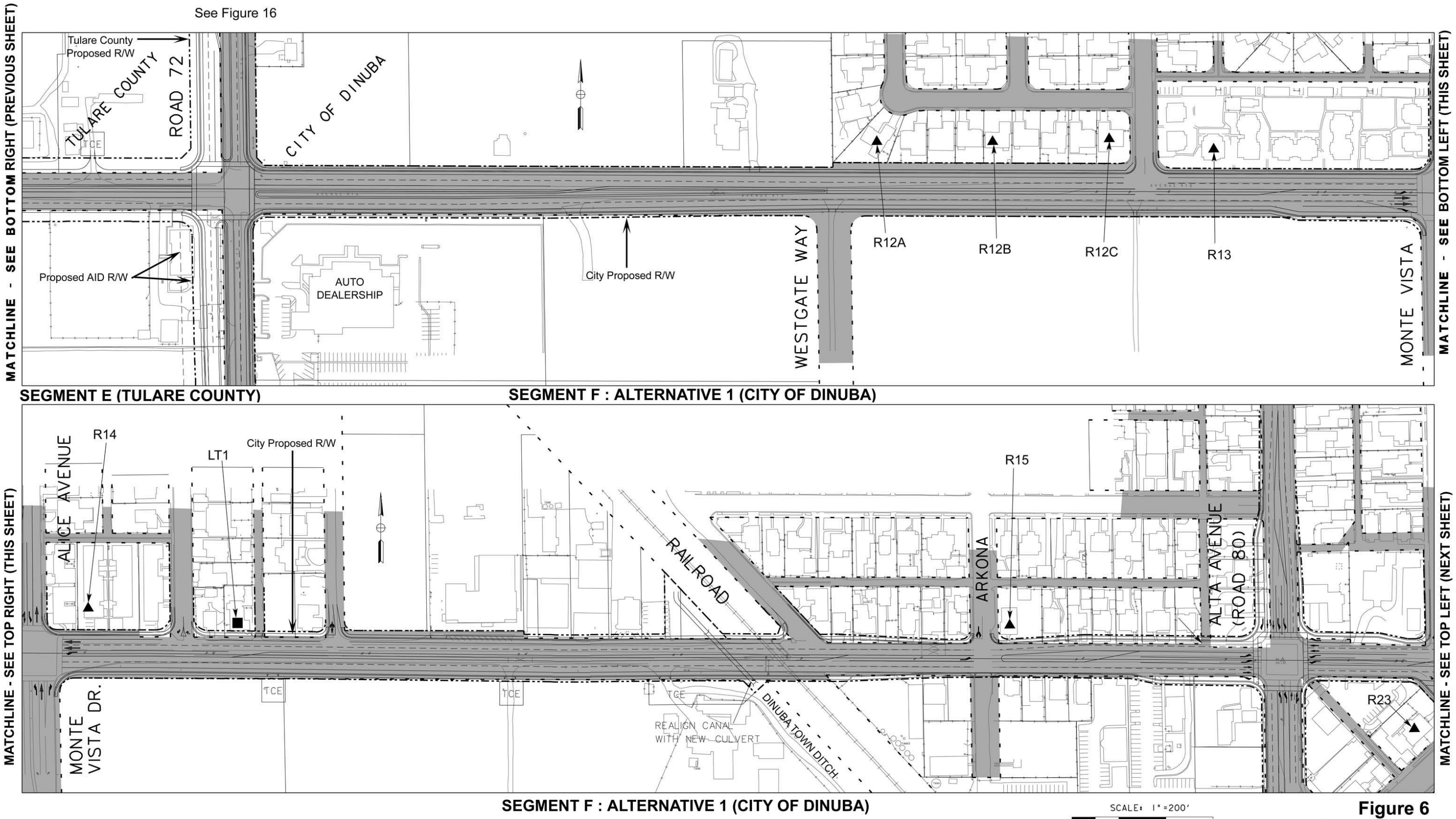
LT=Long Term Noise Monitoring Site

ST=Short Term Noise Monitoring Site

SCALE: 1" = 400'
0 100 200 400 600

Figure 5
Alternative 1
Segment D + E

Mountain View Avenue/Avenue 416/El Monte Way Widening Project



Existing Right-of Way (R/W)

Proposed Right-of-Way Boundary (R/W)

Acronyms and Abbreviations

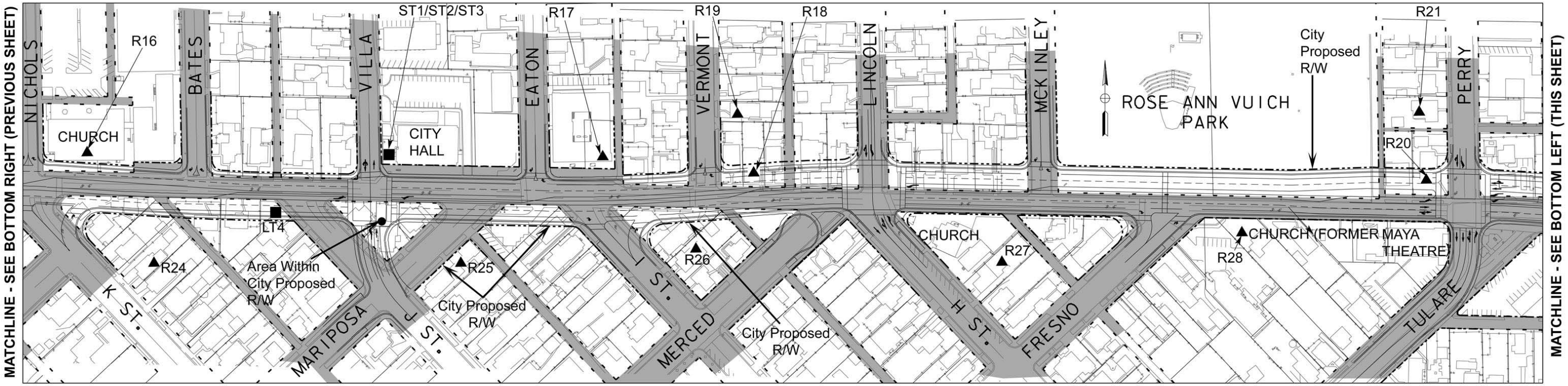
TCE=Temporary Construction Easement

R=Noise Study Receptor Site

LT=Long Term Noise Monitoring Site

Figure 6
Alternative 1
Segments E + F

Mountain View Avenue/Avenue 416/El Monte Way Widening Project



SEGMENT F : ALTERNATIVE 1 (CITY OF DINUBA)

SEGMENT F : ALTERNATIVE 1 (CITY OF DINUBA)

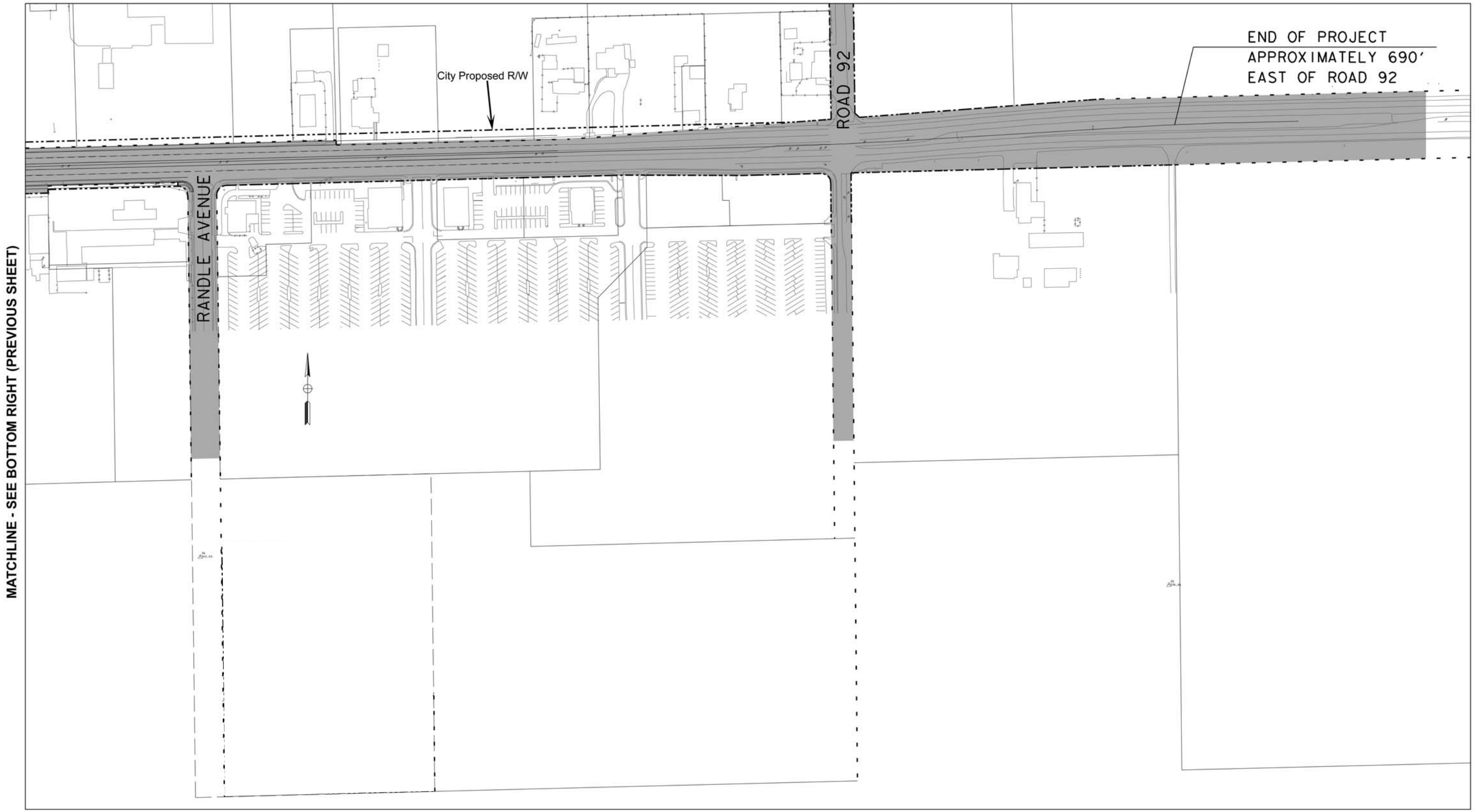
SCALE: 1"=200'
0 50 100 200 300

Existing Right-of-Way (R/W)

Proposed Right-of-Way Boundary (R/W)

R = Noise Study Receptor Location
LT = Long Term Noise Monitoring Site
ST = Short Term Noise Monitoring Site

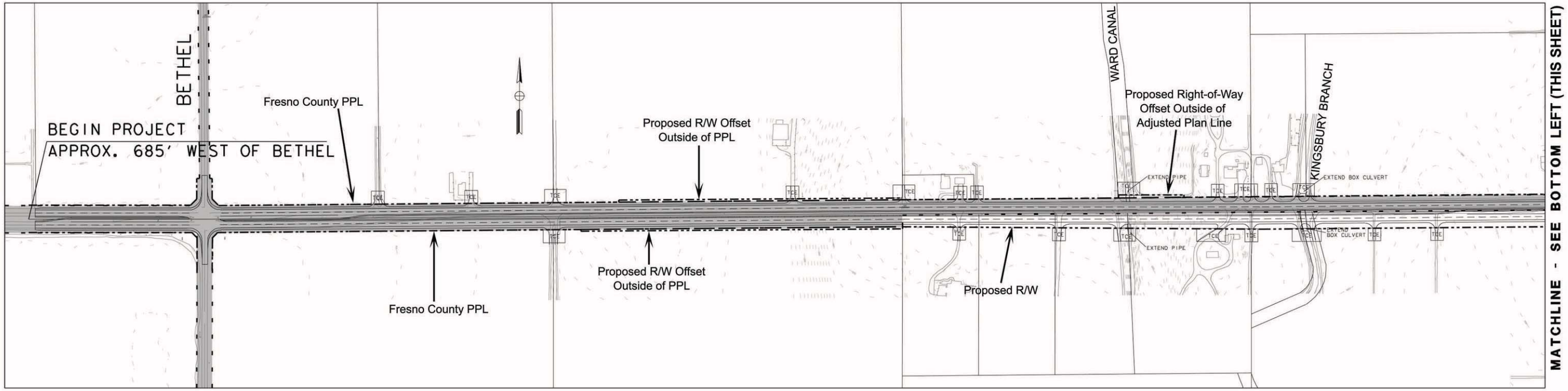
Figure 7
Alternative 1
Segment F
Mountain View Avenue/Avenue 416/El Monte Way Widening Project



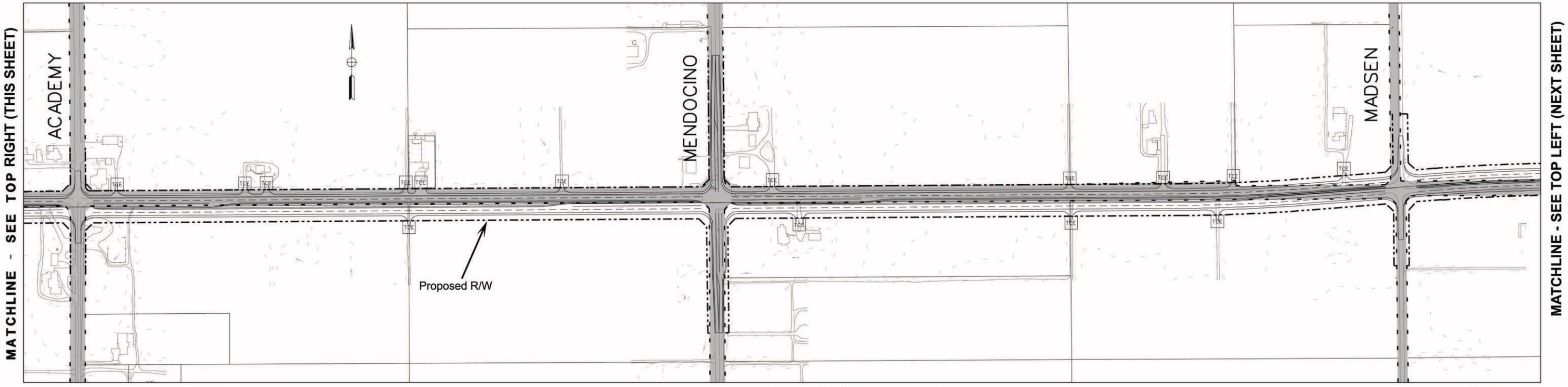
SEGMENT F : ALTERNATIVE 1 (CITY OF DINUBA)

Figure 8
Alternative 1
Segments F

Mountain View Avenue/Avenue 416/El Monte Way Widening Project



SEGMENT A : ALTERNATIVE 2 (FRESNO COUNTY)



SEGMENT A : ALTERNATIVE 2 (FRESNO COUNTY)

Existing Right-of-Way

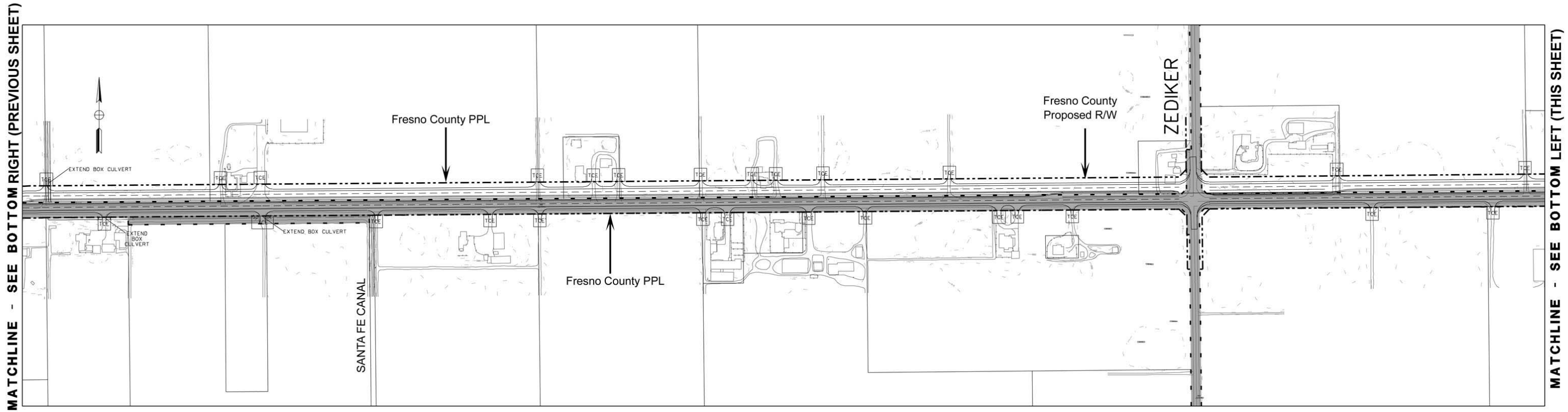
Fresno County Precise Plan Line (PPL)
Proposed Right-of-Way (R/W) = Unshaded Area Within PPL Boundary
Proposed Right-of-Way Offset (Outside of PPL)

Acronyms and Abbreviations
R/W = Refers to County or City Right-of-Way, Unless Otherwise Noted
TCE = Temporary Construction Easement

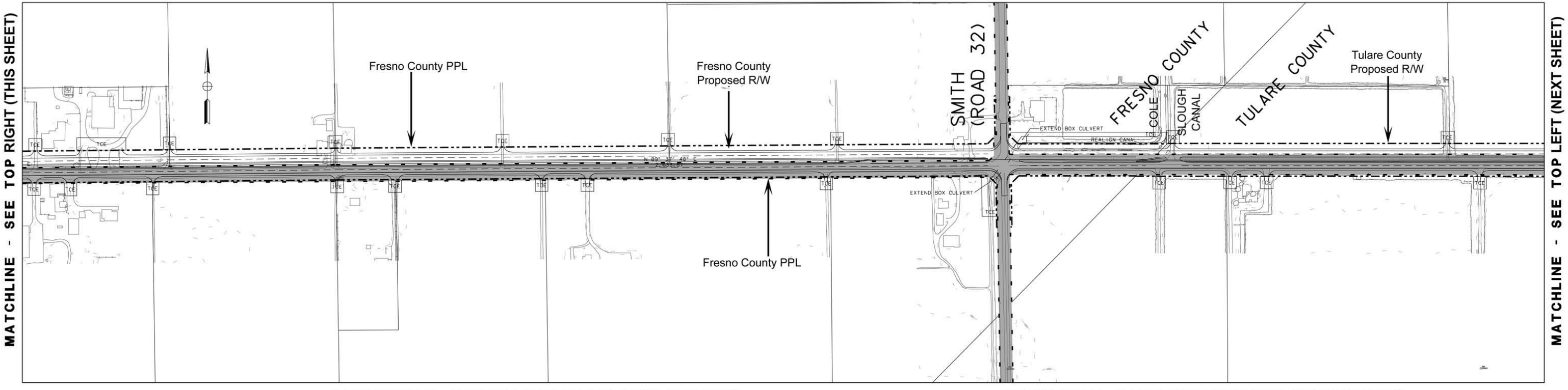
SCALE: 1" = 400'
0 100 200 400 600

Figure 9
Alternative 2
Segment A

Mountain View Avenue/Avenue 416/El Monte Way Widening Project



SEGMENT B : ALTERNATIVE 2 (FRESNO COUNTY)



SEGMENT B : ALTERNATIVE 2 (FRESNO COUNTY)

SEGMENT C : ALTERNATIVE 2 (TULARE COUNTY)

SCALE: 1" = 400'

0 100 200 400 600

Existing Right-of-Way (R/W)

Fresno County Precise Plan Line (PPL)/Tulare County Proposed Right-of-Way

Proposed Right-of-Way (R/W) = Unshaded Area Within PPL Boundary

Proposed Right-of-Way Offset (Outside of PPL)

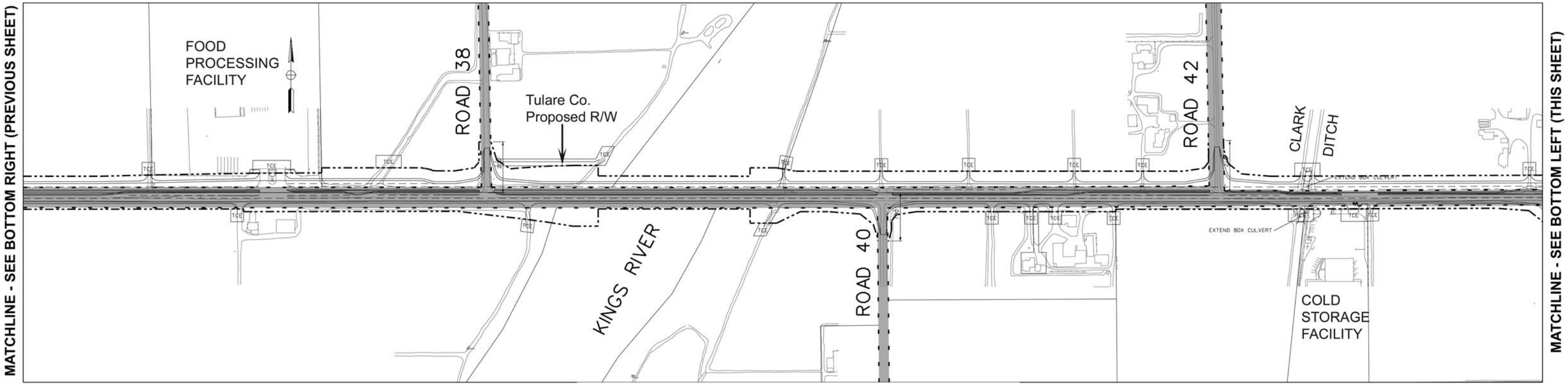
Acronyms and Abbreviations

R/W = Refers to County or City Right-of-Way, Unless Otherwise Noted

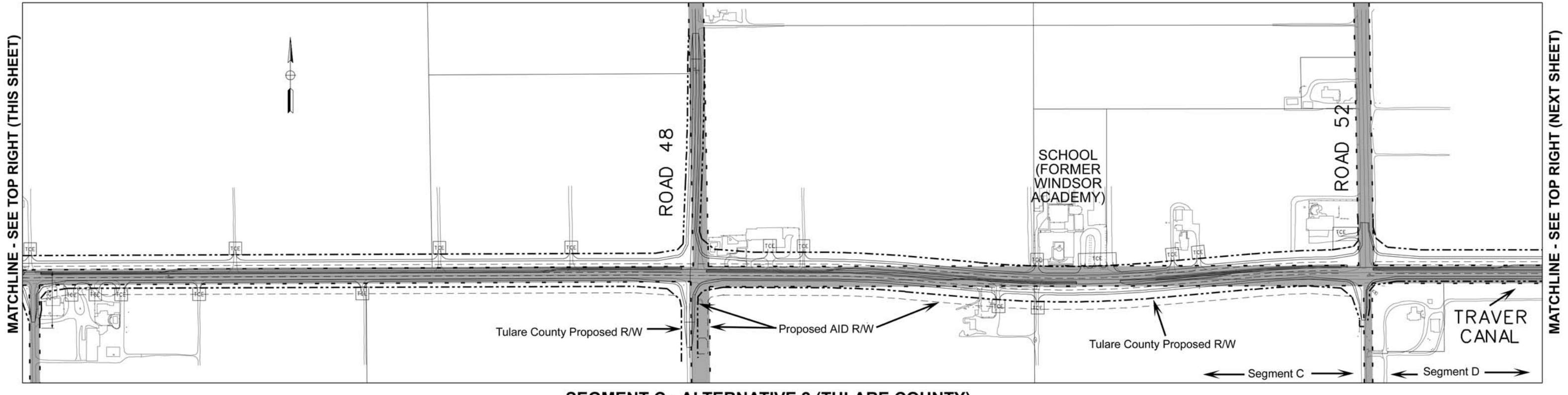
TCE = Temporary Construction Easement

Figure 10
Alternative 2
Segment B

Mountain View Avenue/Avenue 416/El Monte Way Widening Project



SEGMENT C : ALTERNATIVE 2 (TULARE COUNTY)



SEGMENT C : ALTERNATIVE 2 (TULARE COUNTY)

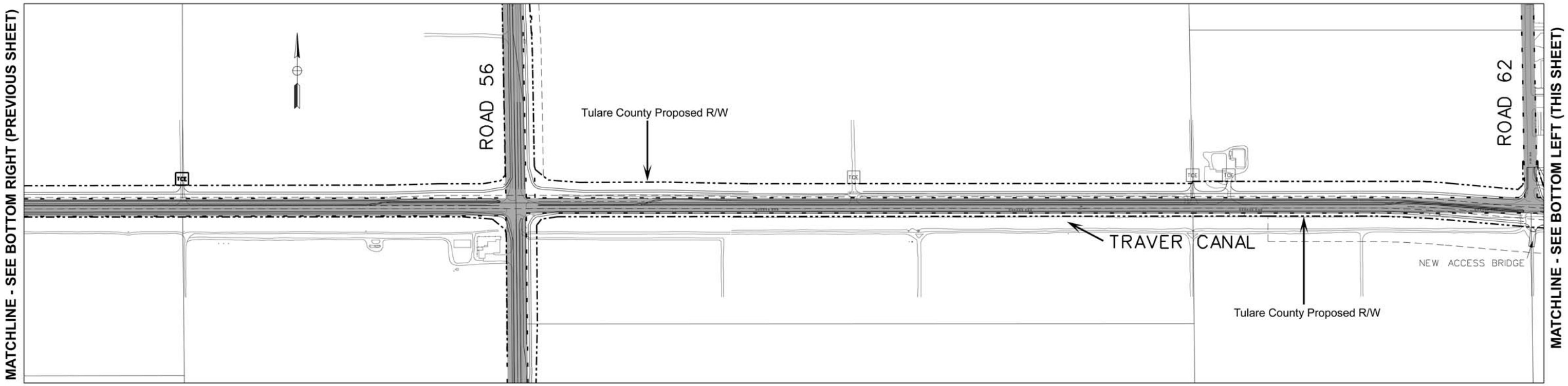
SCALE: 1" = 400'
0 100 200 400 600

Proposed Right-of-Way (R/W)
Existing Right-of-Way (R/W)

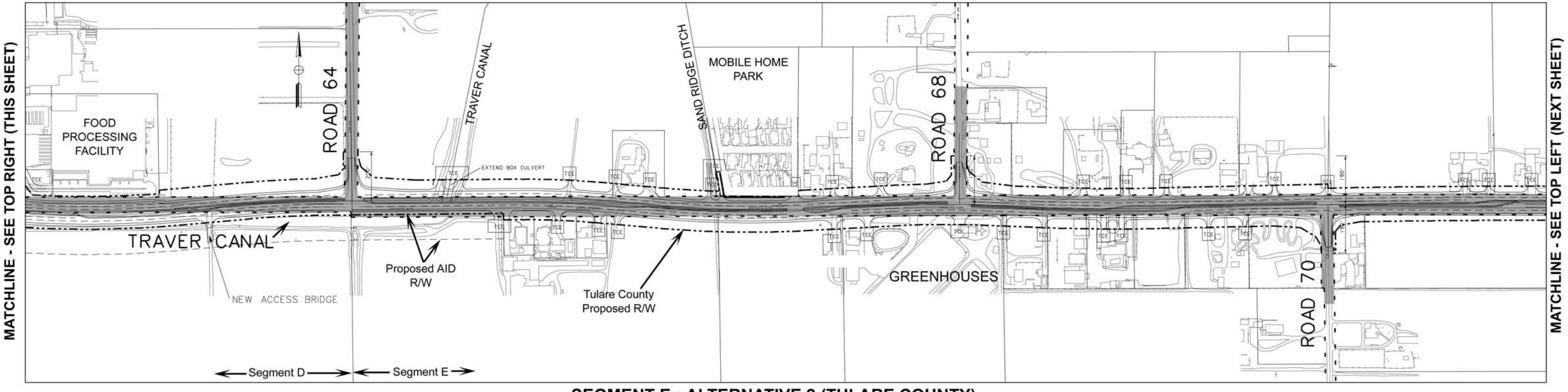
Acronyms & Abbreviations
AID = Alta Irrigation District
R/W = Refers to County or City Right-of-Way Unless Otherwise Noted
TCE = Temporary Construction Easement

Figure 11
Alternative 2
Segment C

Mountain View Avenue/Avenue 416/El Monte Way Widening Project



SEGMENT D : ALTERNATIVE 2 (TULARE COUNTY)



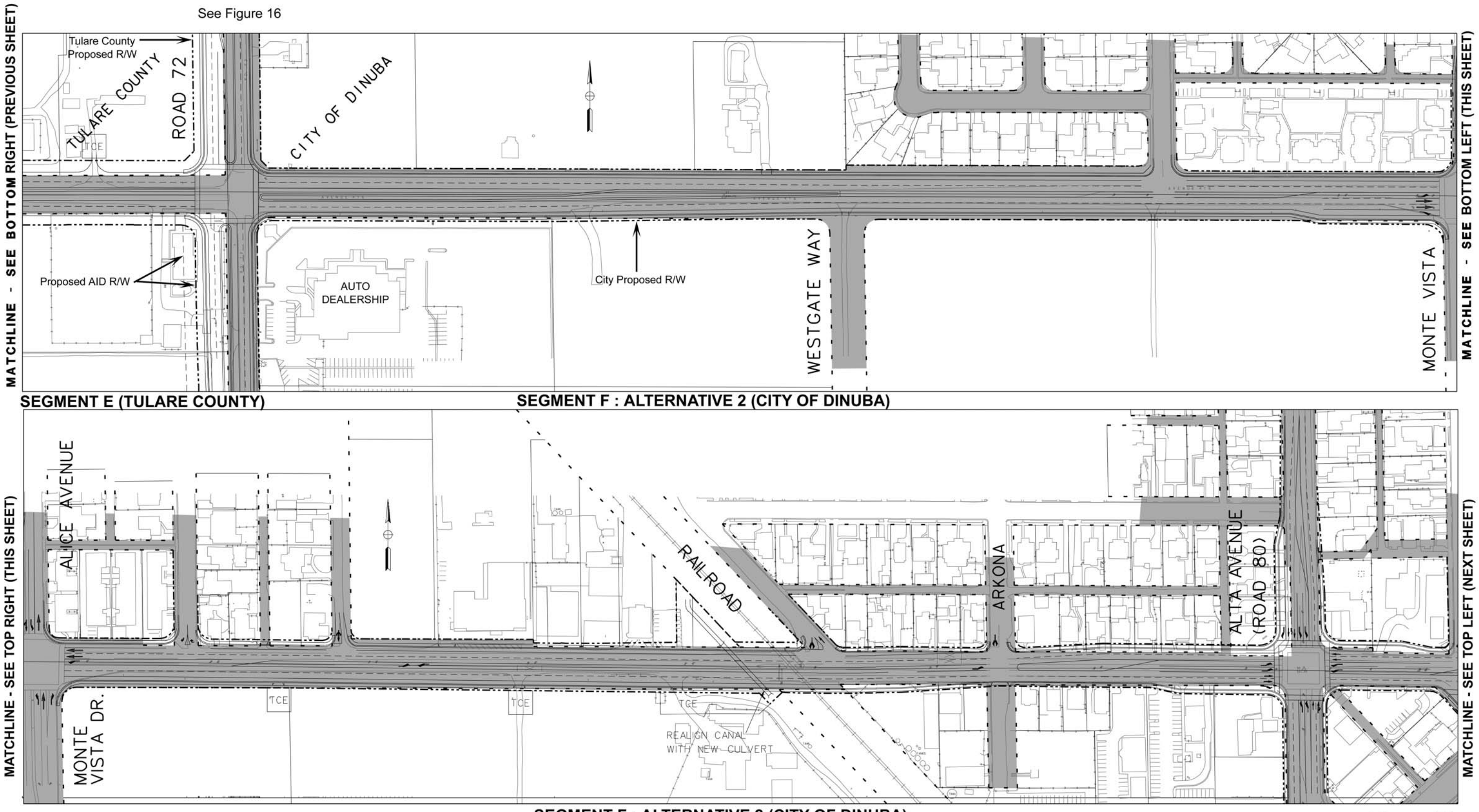
SEGMENT E : ALTERNATIVE 2 (TULARE COUNTY)

SCALE: 1" = 400'
0 100 200 400 600

Proposed Right-of-Way (R/W)
Existing Right-of-Way (R/W)

Acronyms & Abbreviations
AID = Alta Irrigation District
R/W = Refers to County or City Right-of-Way Unless Otherwise Noted
TCE = Temporary Construction Easement

Figure 12
Alternative 2
Segments D + E
Mountain View Avenue/Avenue 416/El Monte Way Widening Project



Existing Right-of Way (R/W)

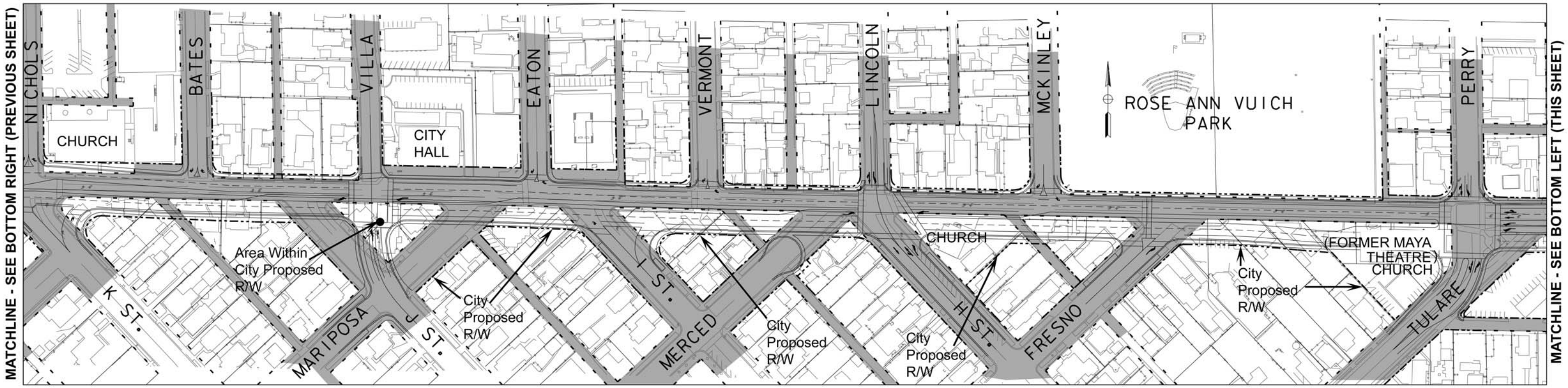
Proposed Right-of-Way Boundary (R/W)

Acronyms and Abbreviations

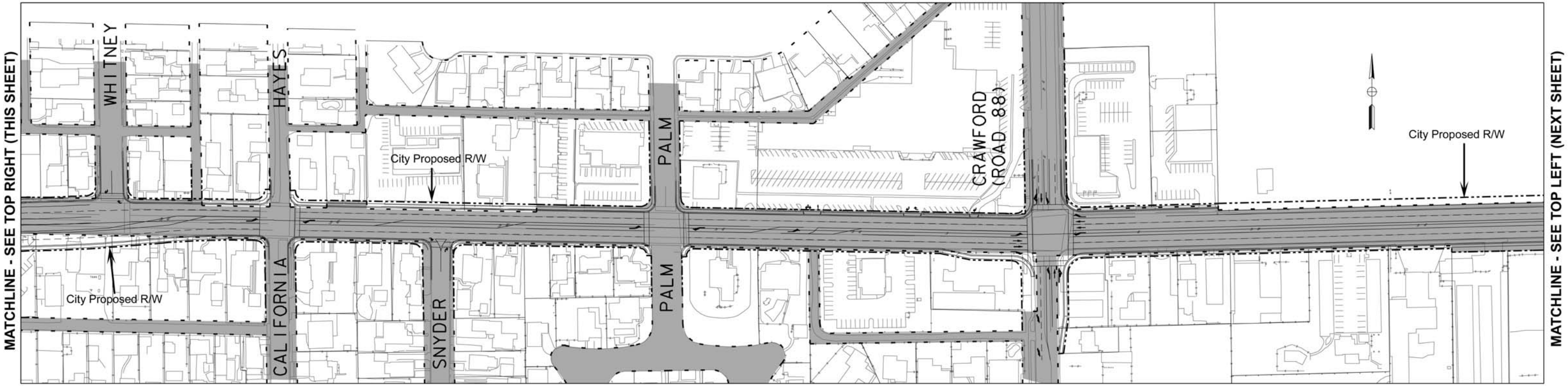
TCE=Temporary Construction Easement

Figure 13
Alternative 2
Segments E + F

Mountain View Avenue/Avenue 416/El Monte Way Widening Project



SEGMENT F : ALTERNATIVE 2 (CITY OF DINUBA)



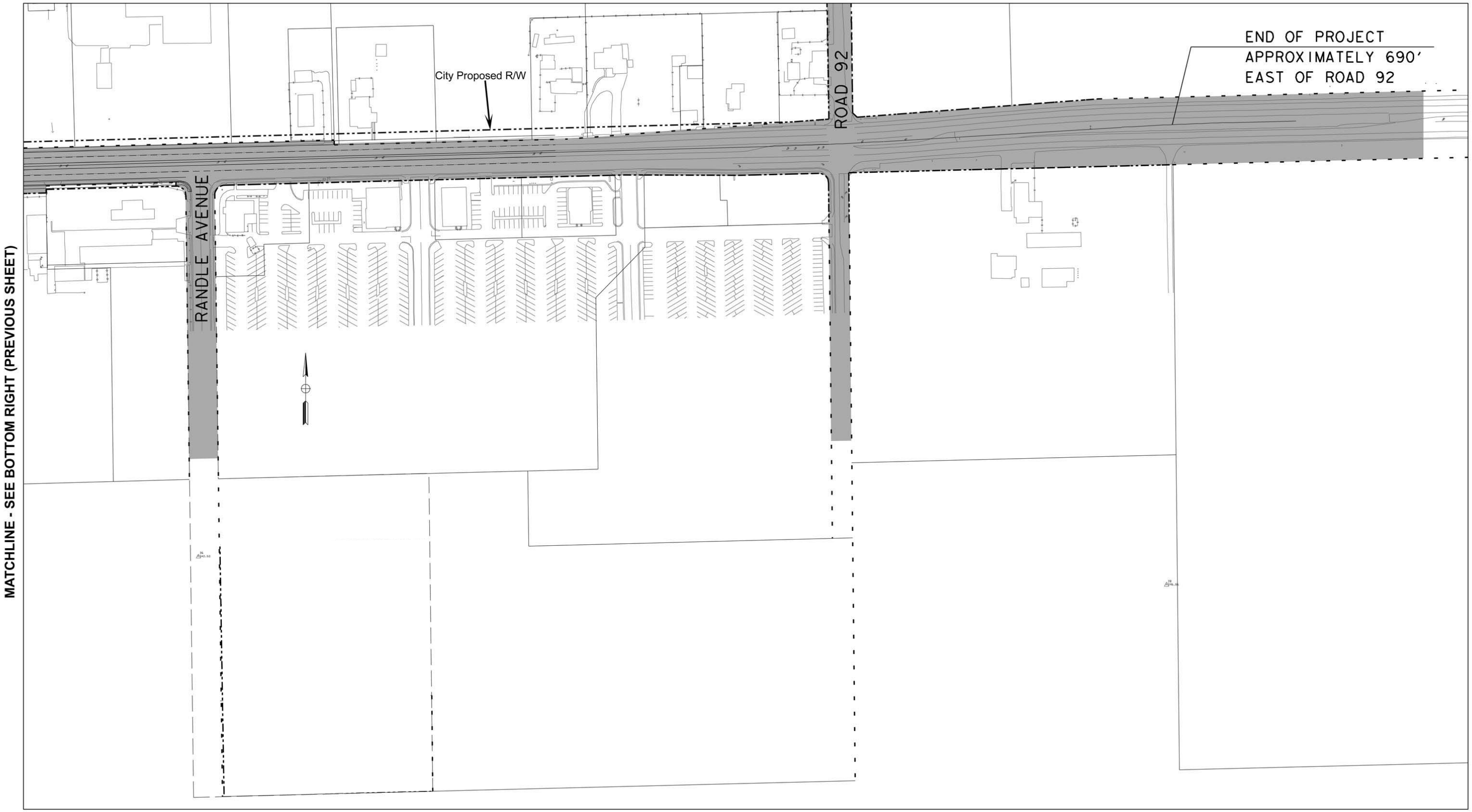
SEGMENT F : ALTERNATIVE 2 (CITY OF DINUBA)

SCALE: 1" = 200'
0 50 100 200 300

Existing Right-of-Way (R/W)

Proposed Right-of-Way Boundary (R/W)

Figure 14
Alternative 2
Segment F
Mountain View Avenue/Avenue 416/El Monte Way Widening Project



SEGMENT F : ALTERNATIVE 2 (CITY OF DINUBA)

SCALE: 1" = 200'

0 50 100 200 300

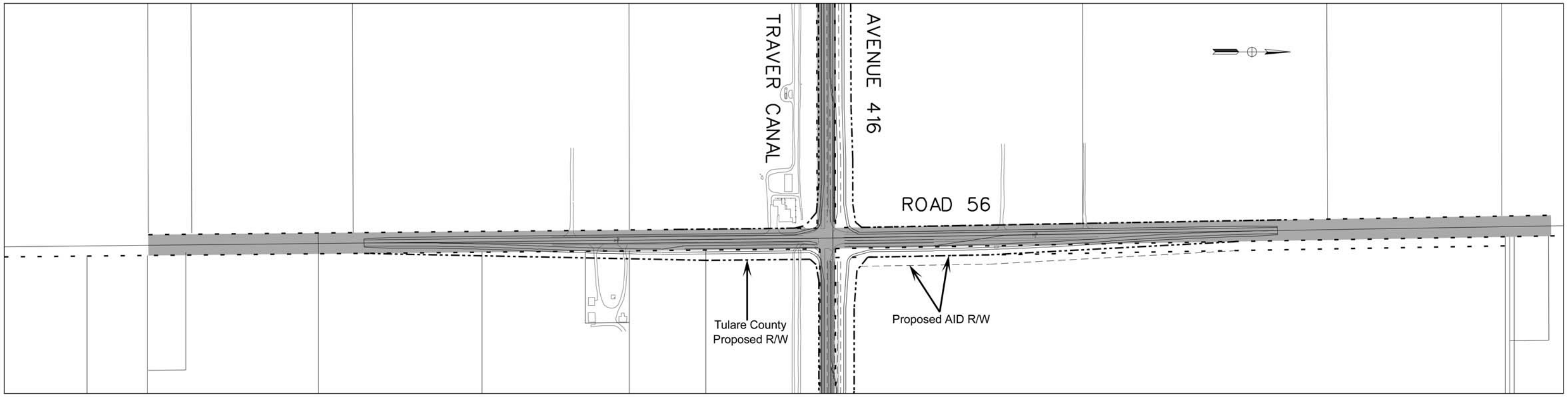
Existing Right-of Way (R/W)

Proposed Right-of-Way Boundary (R/W)

Figure 15
Alternative 2
Segment F

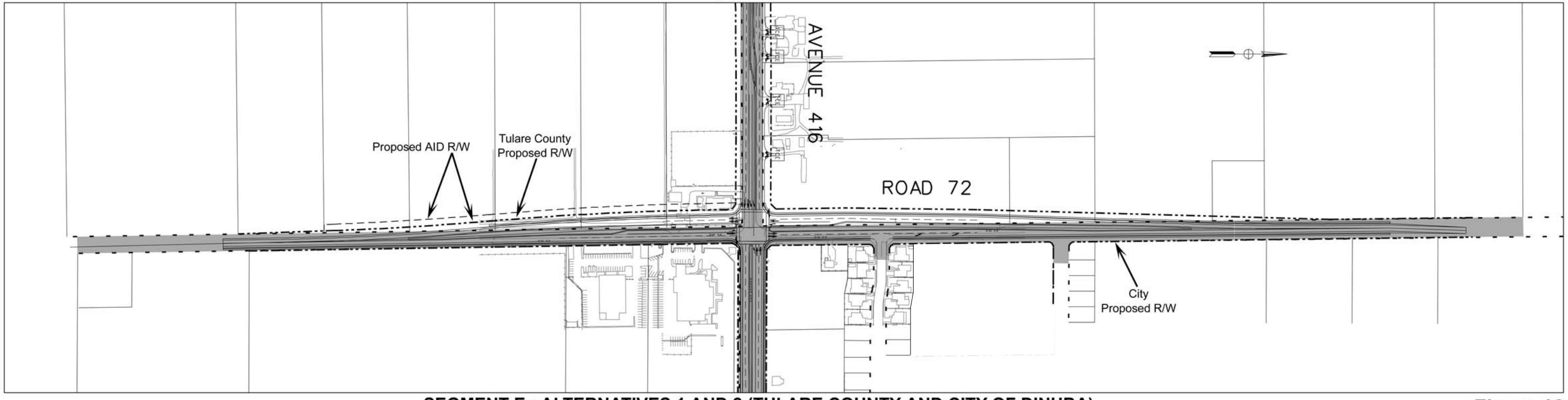
Mountain View Avenue/Avenue 416/El Monte Way Widening Project

See Figures 5 and 12



SEGMENT D : ALTERNATIVES 1 AND 2 (TULARE COUNTY)

See Figures 6 and 13



SEGMENT E : ALTERNATIVES 1 AND 2 (TULARE COUNTY AND CITY OF DINUBA)

SCALE: 1" = 400'

0 100 200 400 600

Proposed Right-of-Way (R/W)
Existing Right-of-Way (R/W)

Acronyms & Abbreviations
AID = Alta Irrigation District
R/W = Refers to County or City Right-of-Way Unless Otherwise Noted
TCE = Temporary Construction Easement

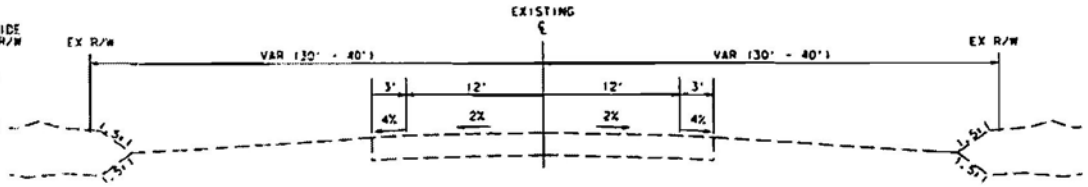
Figure 16
Alternatives 1 + 2
Segments D + E
Mountain View Avenue/Avenue 416/El Monte Way Widening Project

APPENDIX J

Existing and Proposed Roadway Cross Sections

NOTES:

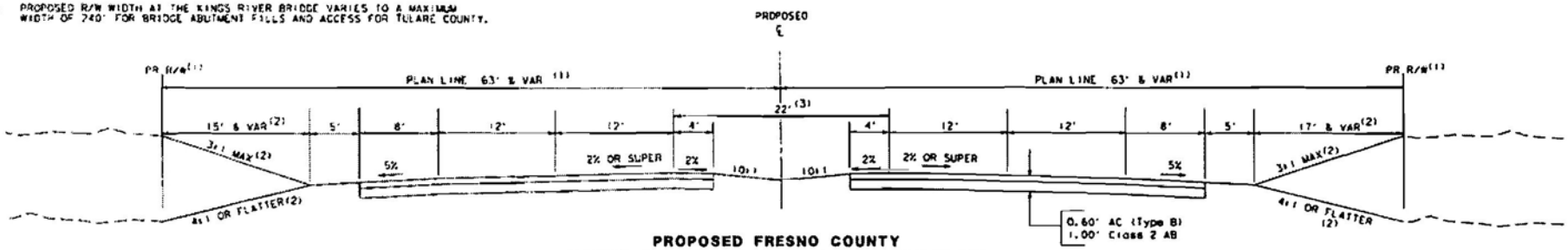
1. FRESNO COUNTY PLAN LINE VARIES FROM 106' WIDE AT BETHEL TO 126' WIDE AT ACADEMY. EAST OF ACADEMY, FRESNO'S PLAN LINE UTILIZES 63' OF R/W EACH SIDE OF CENTERLINE (126' TOTAL).
2. IN FRESNO COUNTY, BETWEEN BETHEL AND ACADEMY, A 15' VERTICAL DROP ALONG CENTERLINE REQUIRES INCREASING THE FOLLOWING PARAMETERS:
   - FILL SLOPE INCREASES TO 2:1 MAX
   - CUT SLOPE INCREASES TO 2:1 MAX
   - WIDTH OF FILL/CUT SLOPE VARIES GREATER THAN 15' AND MAY REQUIRE FILL SLOPE EASEMENTS THAT OCCUR OUTSIDE THE PLAN LINE R/W.
3. MEDIAN WIDTH IS REDUCED FOR LEFT TURN POCKETS. MEDIANS ARE REPLACED WITH CONTINUOUS PAVEMENT THROUGH THE INTERSECTIONS.
4. TULARE COUNTY TYPICAL R/W UTILIZES 55' OF R/W EACH SIDE OF CENTERLINE (110' TOTAL). THE WIDER R/W WIDTH THAT VARIES (130' TO 165' TOTAL) IS SHOWN FOR THIS PROJECT TO BE CONSERVATIVE AND INCLUDE AREA FOR WIDER SLOPES AND UTILITY RELOCATIONS.
5. NOTE THE OVERALL PROPOSED R/W WIDTHS ARE A WORST CASE SCENARIO FOR ENVIRONMENTAL STUDY PURPOSES. IN MOST CASES, THE UTILITY WIDTHS MAY BE ELIMINATED.
6. PROPOSED R/W WIDTH AT THE KINGS RIVER BRIDGE VARIES TO A MAXIMUM WIDTH OF 240' FOR BRIDGE ABUTMENT FILLS AND ACCESS FOR TULARE COUNTY.



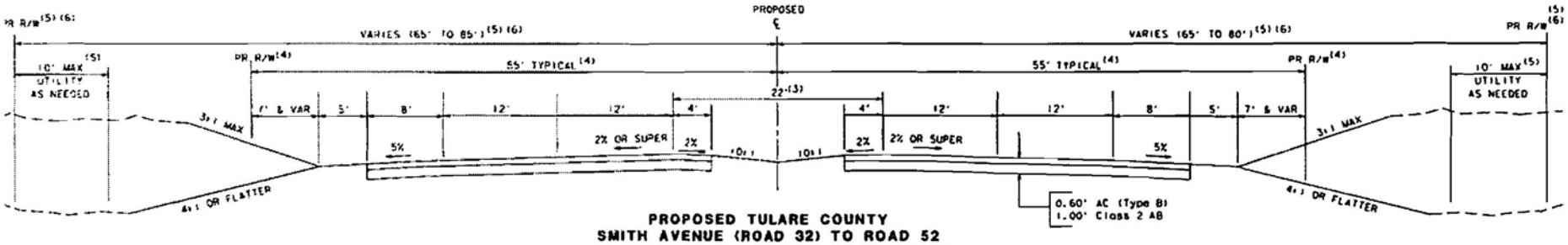
EXISTING TULARE COUNTY / FRESNO COUNTY

ABBREVIATIONS

℄	CENTERLINE
EX	EXISTING
MAX	MAXIMUM
PR	PROPOSED
R/W	RIGHT OF WAY
SUPER	SUPERELEVATION
TYP	TYPICAL
VAR	VARIES



PROPOSED FRESNO COUNTY
BETHEL AVENUE TO SMITH AVENUE (ROAD 32)



PROPOSED TULARE COUNTY
SMITH AVENUE (ROAD 32) TO ROAD 52
400 FEET EAST OF ROAD 64 TO ROAD 72

Appendix J
Figure 1

MOUNTAIN VIEW AVENUE/AVENUE 416/EL MONTE WAY WIDENING PROJECT

TULARE COUNTY/CITY OF DINUBA/FRESNO COUNTY/ TULARE COUNTY ASSOCIATION OF GOVERNMENTS

TYPICAL CROSS SECTIONS

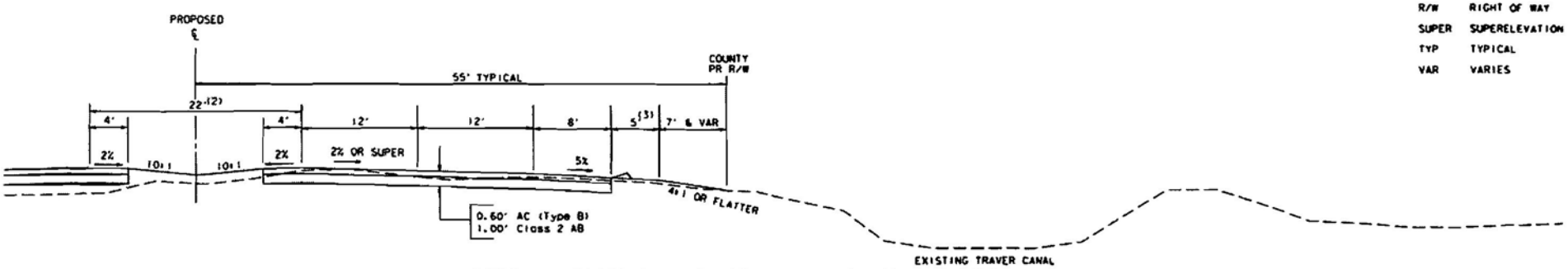
NO SCALE DATE: APRIL 19, 2004

NOTES:

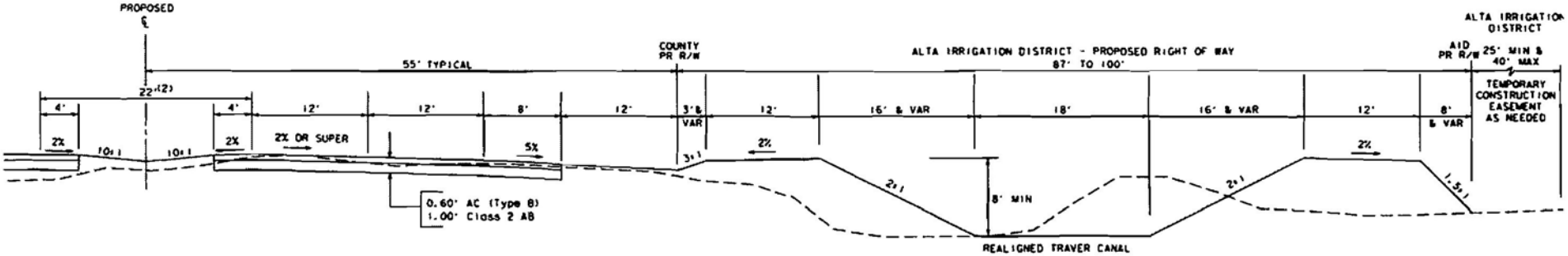
1. TULARE COUNTY TYPICAL R/W UTILIZES 55' OF R/W EACH SIDE OF CENTERLINE (110' TOTAL).
2. MEDIAN WIDTH IS REDUCED FOR LEFT TURN POCKETS. MEDIANS ARE REPLACED WITH CONTINUOUS PAVEMENT THROUGH THE INTERSECTIONS.
3. MOUNTABLE DIKE TO BE PLACED WHERE NECESSARY TO COLLECT STORM WATER RUNOFF FROM ROADWAY AND CONVEY DRAINAGE AWAY FROM THE EXISTING TRAVER CANAL.

ABBREVIATIONS

℄	CENTERLINE
EX	EXISTING
MAX	MAXIMUM
PR	PROPOSED
R/W	RIGHT OF WAY
SUPER	SUPERELEVATION
TYP	TYPICAL
VAR	VARIES



PROPOSED TULARE COUNTY AND ALTA IRRIGATION DISTRICT
AVENUE 416 PARALLEL TO EXISTING TRAVER CANAL
ROAD 52 TO 1800 FEET EAST OF ROAD 56
D-1 - 1800 FEET EAST OF ROAD 56 TO 400 FEET EAST OF ROAD 64 AT BEND IN TRAVER



PROPOSED TULARE COUNTY AND ALTA IRRIGATION DISTRICT
AVENUE 416 - REALIGNMENT OF TRAVER CANAL
D-2 - 3400 FEET EAST OF ROAD 56 TO 400 FEET EAST OF ROAD 64
D-5 - 1800 FEET EAST OF ROAD 56 TO 400 FEET EAST OF ROAD 64

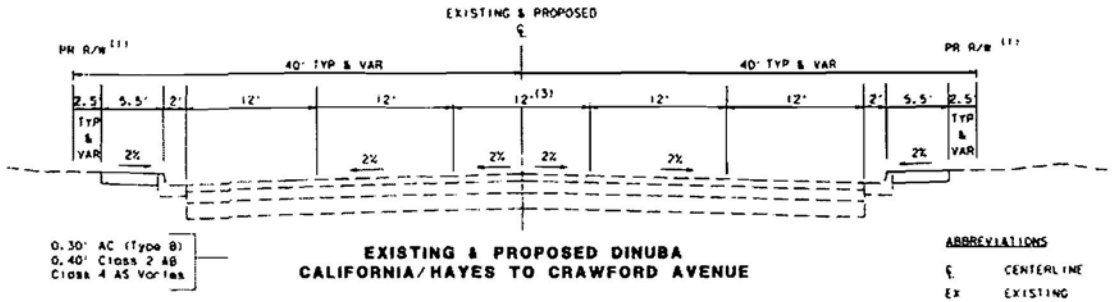
MOUNTAIN VIEW AVENUE/AVENUE 416/EL MONTE WAY WIDENING PROJECT

TULARE COUNTY/CITY OF DINUBA/FRESNO COUNTY/ TULARE COUNTY ASSOCIATION OF GOVERNMENTS

Appendix J
Figure 2
TYPICAL CROSS SECTIONS
NO SCALE DATE: APRIL 19, 2004

NOTES:

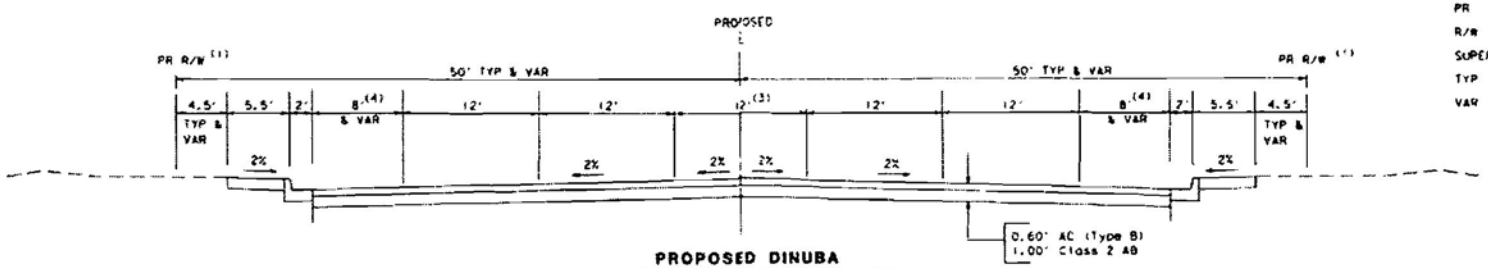
1. R/W WIDTH VARIES TO MINIMIZE IMPACTS TO RESOURCES THROUGH DINUBA. MEDIAN AND SIDEWALK WIDTHS MAY BE REDUCED TO FIT R/W CONSTRAINTS. UTILITY REQUIREMENTS. DOUBLE LEFT TURN POCKETS, AND RIGHT TURN CHANNELIZATION MAY ADD TO MINIMUM R/W WIDTHS.
2. RAISED MEDIANS ARE LANDSCAPED WHERE FEASIBLE. MEDIAN WIDTH IS REDUCED FOR LEFT TURN POCKETS. MEDIANS ARE REPLACED WITH CONTINUOUS PAVEMENT THROUGH THE INTERSECTIONS.
3. THE 12' WIDE CENTER LANE IS A SHARED LEFT TURN LANE OR A LEFT TURN POCKET AT INTERSECTION APPRROACHES.
4. THE 8' WIDE SHOULDER PROVIDES SPACE FOR ON-STREET PARALLEL PARKING. SHOULDER WIDTH VARIES AND MUST BE AT LEAST 3' WIDE TO PROVIDE THE MINIMUM SPACE FOR BICYCLISTS. THE SHOULDER MAY BE ELIMINATED AS NEEDED FOR RIGHT-TURN CHANNELIZATION AND CONFORMING TO AREAS WITHOUT A SHOULDER.



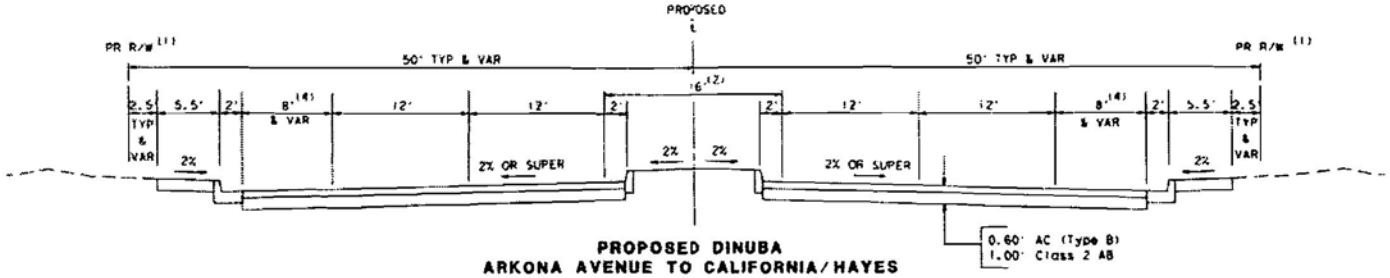
EXISTING & PROPOSED DINUBA
CALIFORNIA/HAYES TO CRAWFORD AVENUE

ABBREVIATIONS

℄	CENTERLINE
EX	EXISTING
MAX	MAXIMUM
PR	PROPOSED
R/W	RIGHT OF WAY
SUPER	SUPERELEVATION
TYP	TYPICAL
VAR	VARIES



PROPOSED DINUBA
ROAD 72 TO ARKONA AVENUE
CRAWFORD AVENUE TO ROAD 92



PROPOSED DINUBA
ARKONA AVENUE TO CALIFORNIA/HAYES

Appendix J
Figure 3

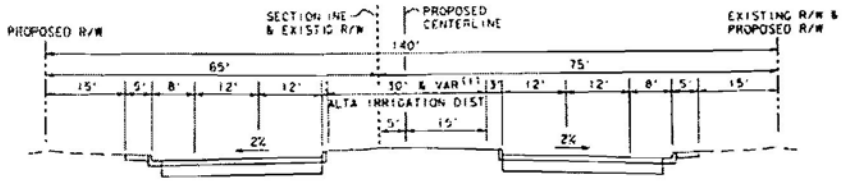
MOUNTAIN VIEW AVENUE/AVENUE 416/EL MONTE WAY WIDENING PROJECT

TULARE COUNTY/CITY OF DINUBA/FRESNO COUNTY/
TULARE COUNTY ASSOCIATION OF GOVERNMENTS

TYPICAL CROSS SECTIONS
NO SCALE DATE: APRIL 19, 2004

NOTES:

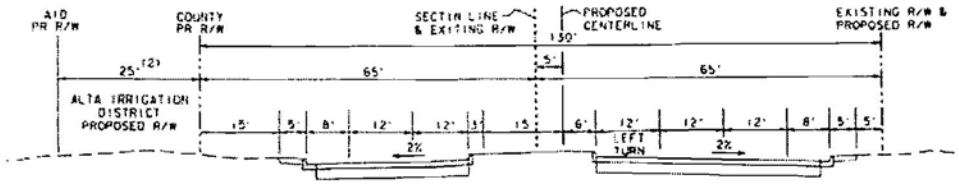
1. ALTA IRRIGATION DISTRICT MEDIAN WIDTH VARIES BASED ON CONFORM TAPER NORTH OF EL MONTE WAY.
2. IRRIGATION PIPE WILL CROSS UNDER ROADWAY THROUGH CONFORM AND THROUGH INTERSECTION. CONSTRUCTION ACCESS SHALL BE FROM COUNTY R/W.
3. PROPOSED BOX CULVERT FOR THE TRAVER CANAL WILL BE LOCATED IN APPROXIMATELY SAME LOCATION AS THE EXISTING CANAL. ALTA IRRIGATION DISTRICT PROPOSED RIGHT OF WAY WIDTH VARIES BASED ON TRANSITIONS OF THE AVENUE 416 ROADWAY.



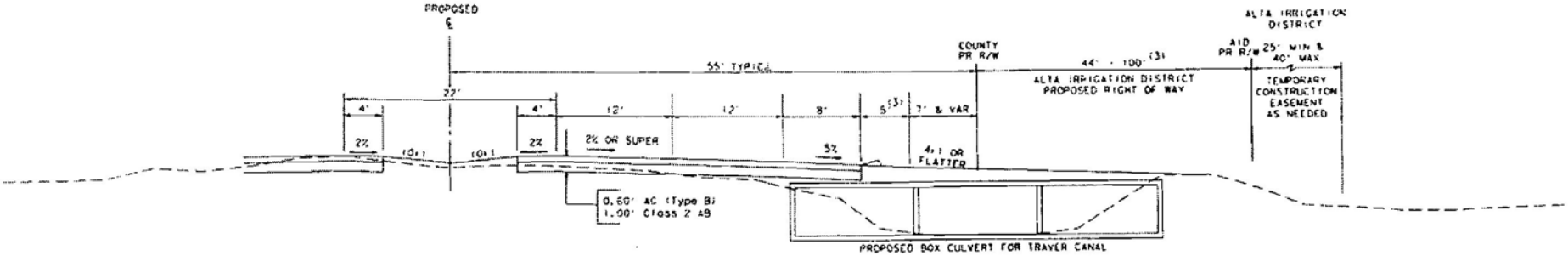
PROPOSED TULARE COUNTY / CITY OF DINUBA / ALTA IRRIGATION DISTRICT (HORSEMAN)
ROAD 72 NORTH OF EL MONTE WAY
(SHOWN WITH FULL WIDTH MEDIAN)

ABBREVIATIONS

℄	CENTERLINE
EX	EXISTING
MAX	MAXIMUM
PR	PROPOSED
R/W	RIGHT OF WAY
SUPER	SUPERELEVATION
TYP	TYPICAL
VAR	VARIES



PROPOSED TULARE COUNTY / CITY OF DINUBA / ALTA IRRIGATION DISTRICT (HORSEMAN)
ROAD 72 SOUTH OF EL MONTE WAY
(SHOWN WITH NARROW MEDIAN FOR LEFT TURN POCKET)



PROPOSED TULARE COUNTY AND ALTA IRRIGATION DISTRICT
AVENUE 416 - PROPOSED BOX CULVERT FOR TRAVER CANAL
D-3 - 1800 FEET EAST OF ROAD 56 TO 200 FEET WEST OF ROAD 64
D-4 - 1800 FEET EAST OF ROAD 56 TO 400 EAST OF ROAD 64 AT BEND IN TRAVER

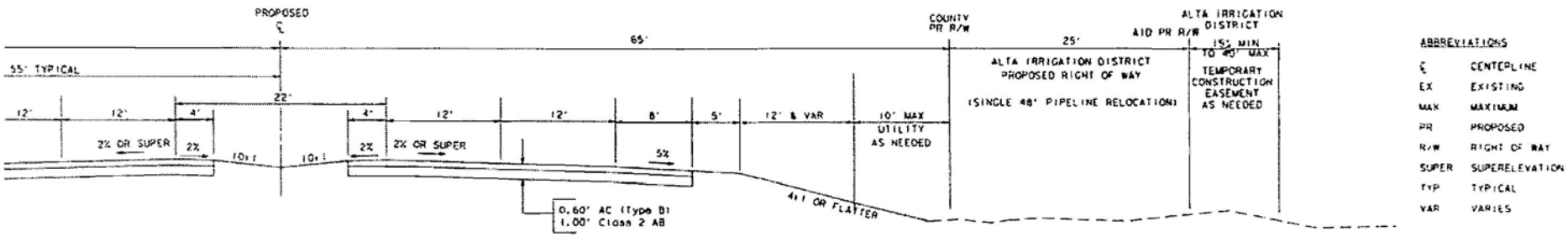
Appendix J
Figure 4

MOUNTAIN VIEW AVENUE/AVENUE 416/EL MONTE WAY WIDENING PROJECT

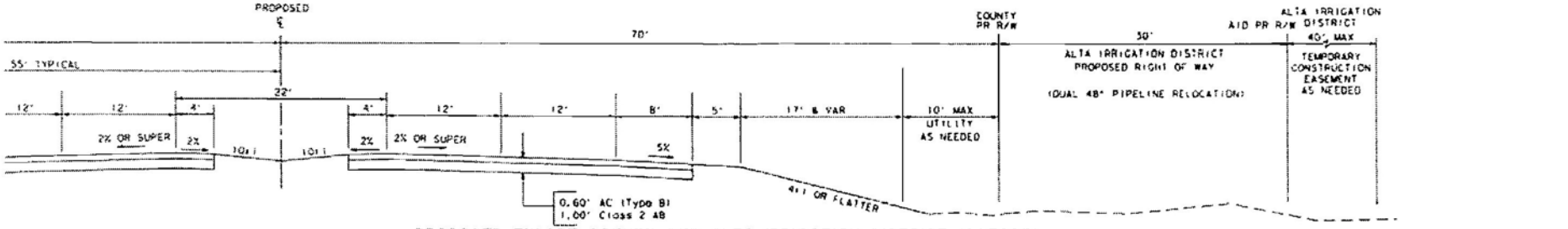
TULARE COUNTY/CITY OF DINUBA/FRESNO COUNTY/ TULARE COUNTY ASSOCIATION OF GOVERNMENTS

TYPICAL CROSS SECTIONS

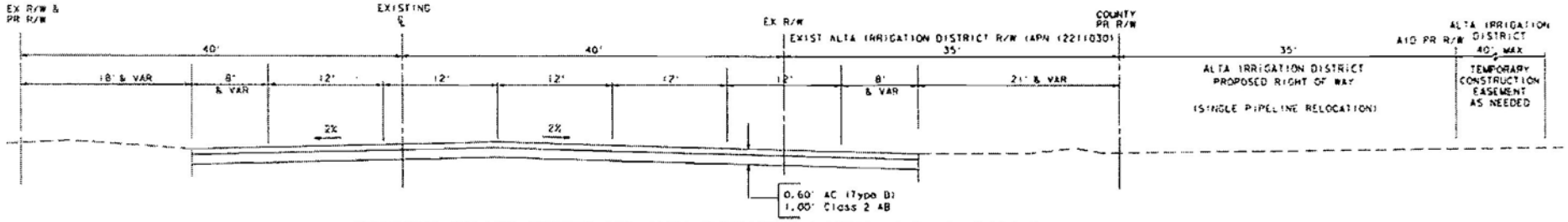
NO SCALE DATE: APRIL 19, 2004



PROPOSED TULARE COUNTY AND ALTA IRRIGATION DISTRICT (UPHILL)
AVENUE 416 FROM ROAD 44 TO ROAD 48



PROPOSED TULARE COUNTY AND ALTA IRRIGATION DISTRICT (CAESAR)
AVENUE 416 FROM ROAD 48 TO ROAD 52



PROPOSED TULARE COUNTY AND ALTA IRRIGATION DISTRICT (BUTTONWILLOW)
ROAD 56 NORTH OF AVENUE 416

Appendix J
Figure 5
TYPICAL CROSS SECTIONS
NO SCALE DATE: APRIL 19, 2004

MOUNTAIN VIEW AVENUE/AVENUE 416/EL MONTE WAY WIDENING PROJECT

TULARE COUNTY/CITY OF DINUBA/FRESNO COUNTY/
TULARE COUNTY ASSOCIATION OF GOVERNMENTS

APPENDIX K

Kings River Bridge Design Options 3 and 4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Tul	CR			

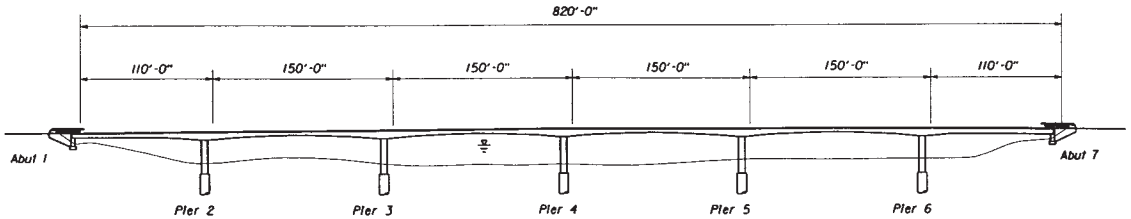
PROGRESS PRINT

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Mark L. Reno No. C47756 Exp. 12-31-03 STATE OF CALIFORNIA

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827



ELEVATION
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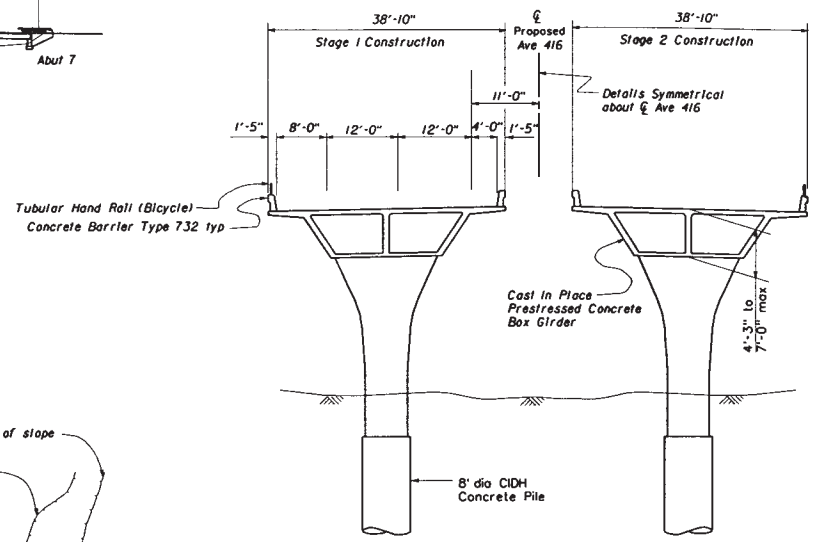

TYPICAL SECTION
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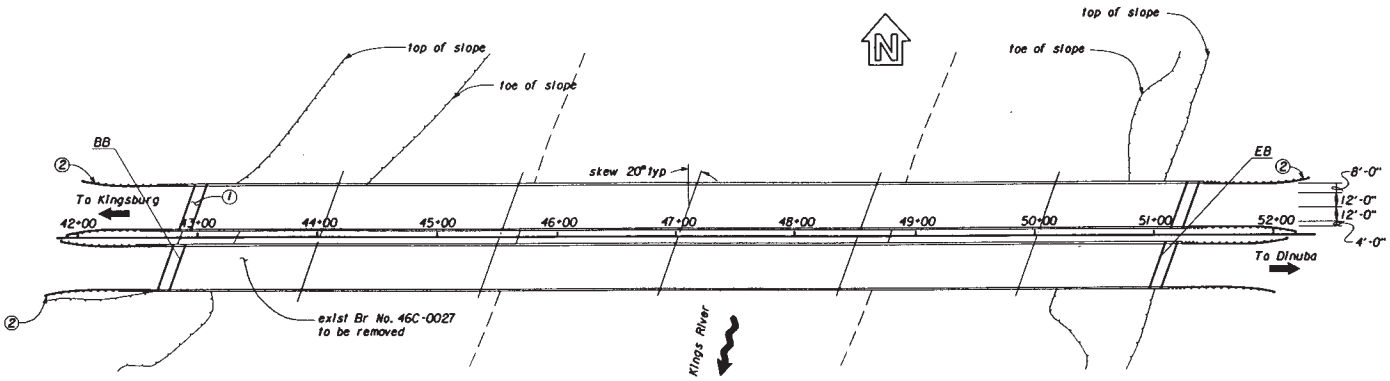


PLAN
1"=50'

LEGEND:
1. Structure Approach (Type EO)
2. Metal Beam Guard Rail, see "Road Plans"

Appendix K

ALTERNATIVE 3B

DESIGN OVERSIGHT	DESIGN	BY M. Reno	CHECKED	LOAD FACTOR DESIGN	LIVE LOADING: HS20 AND LATERNATIVE AND PERMIT DESIGN LOAD	
	DETAILS	BY G. Young	CHECKED	LAYOUT	BY M. Reno	CHECKED
SIGNOFF DATE	QUANTITIES	BY	CHECKED	SPECIFICATIONS	BY	PLANS AND SPECS COMPARED

PREPARED FOR THE COUNTY OF TULARE

Mark L. Reno
PROJECT ENGINEER

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU
EA

BRIDGE NO. 46C-0027
POST MILE

KINGS RIVER BRIDGE (REPLACEMENT)
GENERAL PLAN

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 1/28/03

REVISION DATES (PRELIMINARY STAGE ONLY) SHEET OF

L092agp3b.dgn Rev 1 gry 1/28/03

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Tul	CR			

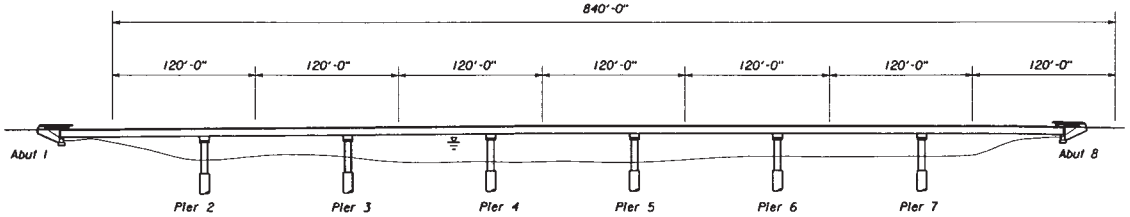
PROGRESS PRINT

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

Mark L. Reno
No. C47756
Exp. 12-31-03
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827



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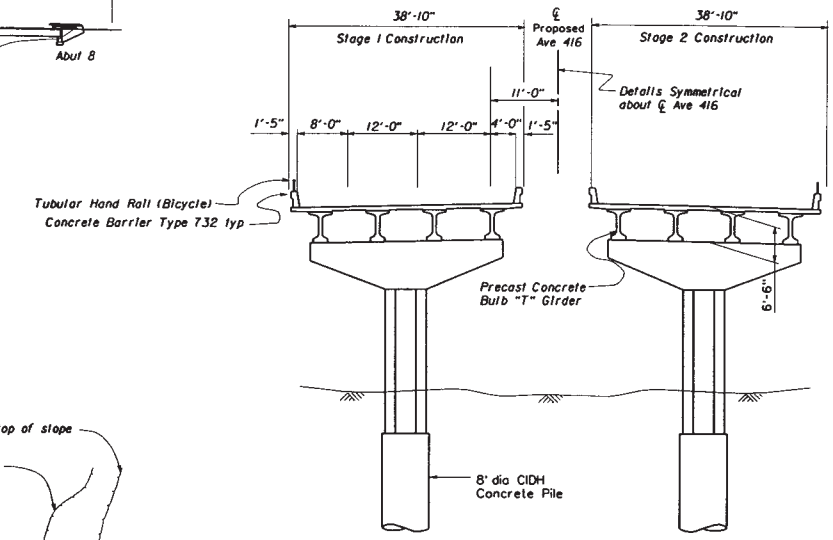

TYPICAL SECTION
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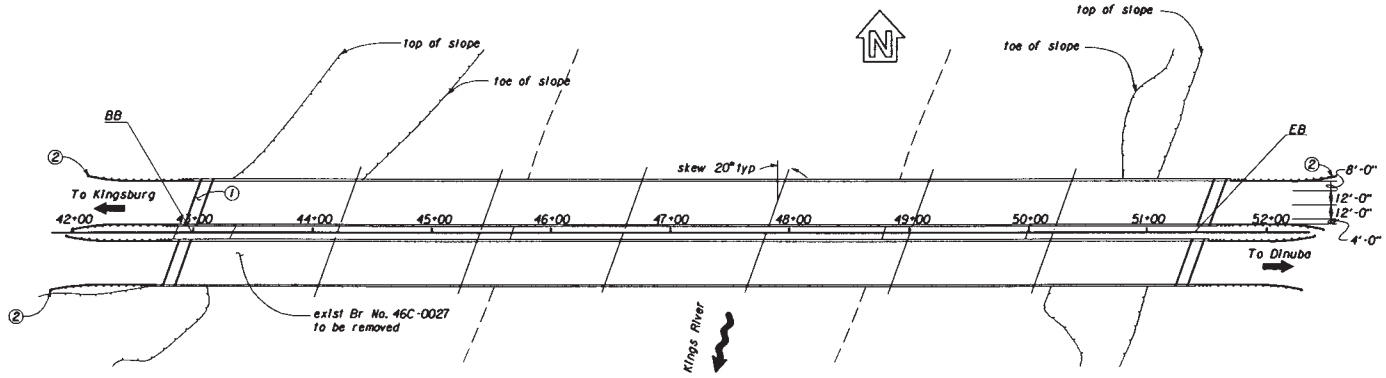

PLAN
1"=50'

LEGEND:

1. Structure Approach (Type EO)
2. Metal Beam Guard Rail, see "Road Plans"

Appendix K

ALTERNATIVE 3C

DESIGN OVERSIGHT	DESIGN	BY M. Reno	CHECKED	LOAD FACTOR DESIGN	LIVE LOADING: HS20 AND ALTERNATIVE AND PERMIT DESIGN LOAD	
	DETAILS	BY G. Young	CHECKED	LAYOUT	BY M. Reno	CHECKED
SIGNOFF DATE	QUANTITIES	BY	CHECKED	SPECIFICATIONS	BY	PLANS AND SPECS COMPARED

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

PREPARED FOR THE COUNTY OF TULARE

Mark L. Reno
PROJECT ENGINEER

CU
EA

BRIDGE NO. 46C-0027
POST MILE

KINGS RIVER BRIDGE (REPLACEMENT)
GENERAL PLAN

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 1/28/03

REVISION DATES (PRELIMINARY STAGE ONLY) SHEET OF

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Tul	CR			

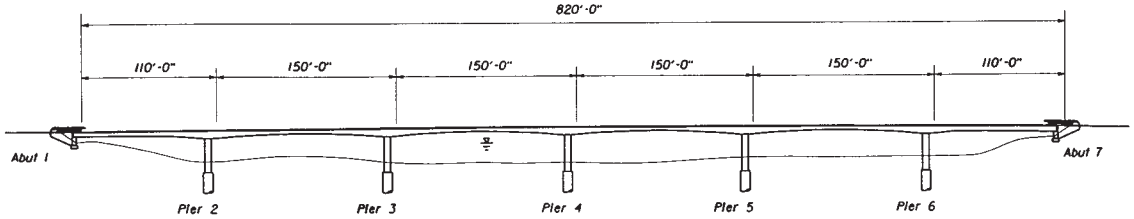
PROGRESS PRINT

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827

REGISTERED PROFESSIONAL ENGINEER
Mark L. Reno
No. C47756
Exp. 12-31-03
STATE OF CALIFORNIA



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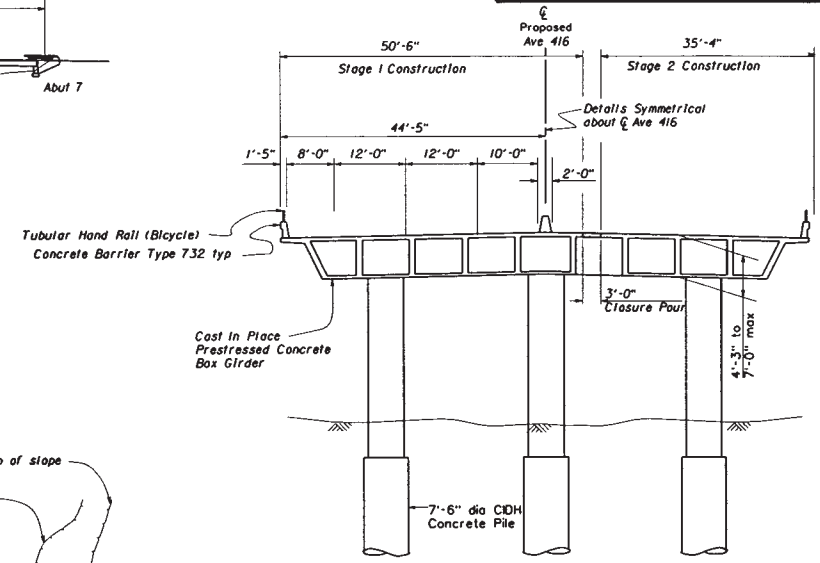

TYPICAL SECTION
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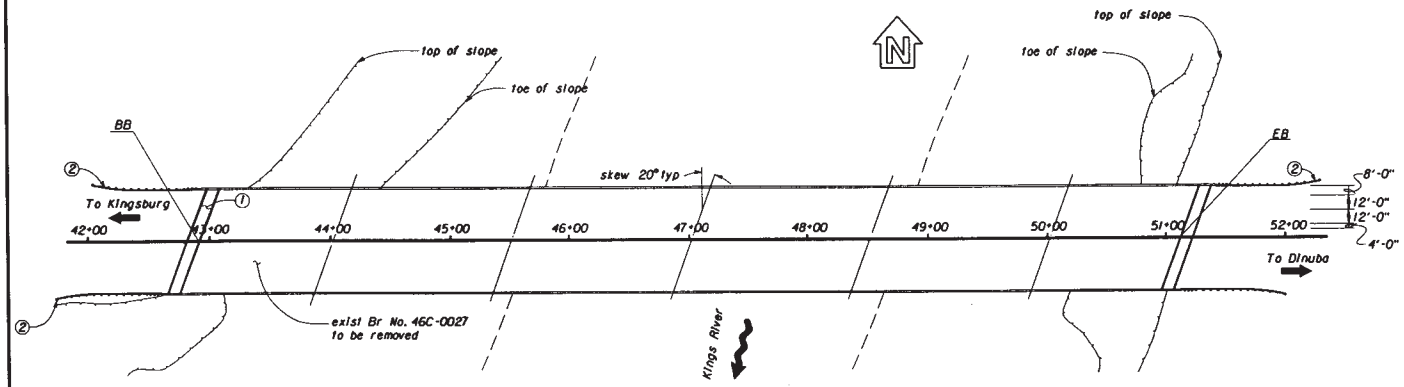


PLAN
1"=50'

LEGEND:
1. Structure Approach (Type EQ)
2. Metal Beam Guard Rail, see "Road Plans"

Appendix K

ALTERNATIVE 4B

DESIGN OVERSIGHT	DESIGN	BY M. Reno	CHECKED	LOAD FACTOR DESIGN	LIVE LOADING: HS20 AND LATERNATIVE AND PERMIT DESIGN LOAD		
	DETAILS	BY G. Young	CHECKED	LAYOUT	BY M. Reno	CHECKED	
SIGNOFF DATE	QUANTITIES	BY	CHECKED	SPECIFICATIONS	BY	PLANS AND SPECS COMPARED	

PREPARED FOR THE COUNTY OF TULARE

Mark L. Reno
PROJECT ENGINEER

BRIDGE NO. 46C-0027
POST MILE

KINGS RIVER BRIDGE (REPLACEMENT)

GENERAL PLAN

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 1/28/02

SHEET OF

1092ogp4b.dgn Rev 1 gry 1/28/03

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Tul	CR			

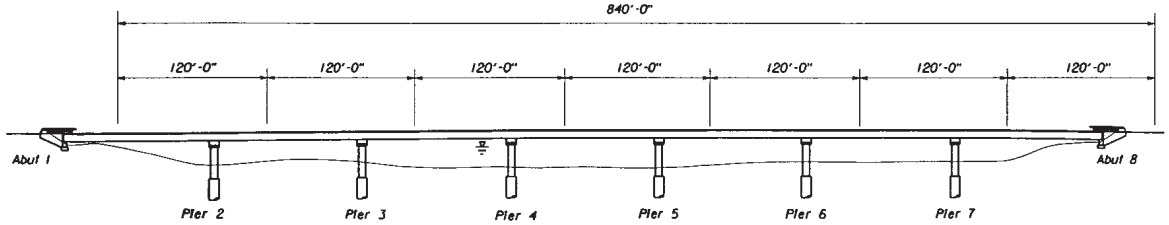
PROGRESS PRINT

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Mark L. Reno No. C47756 Exp. 12-31-03 STATE OF CALIFORNIA

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827



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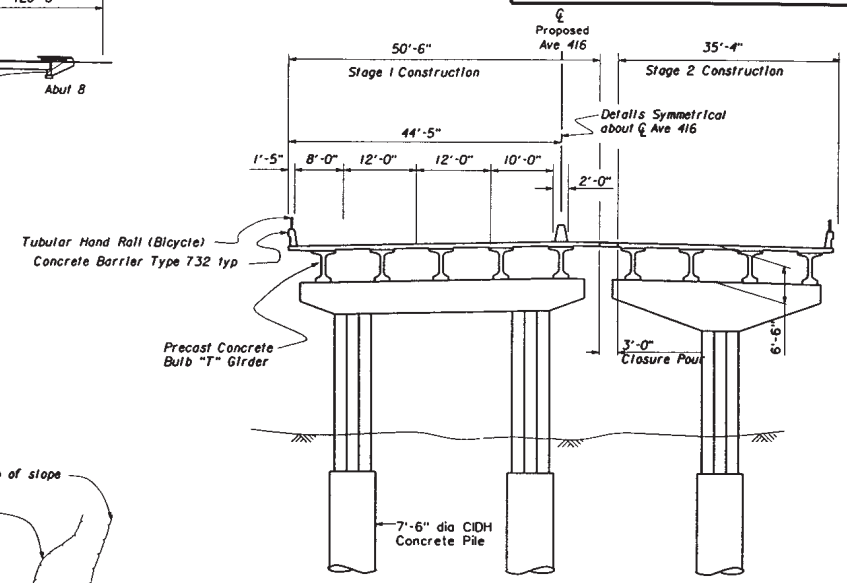

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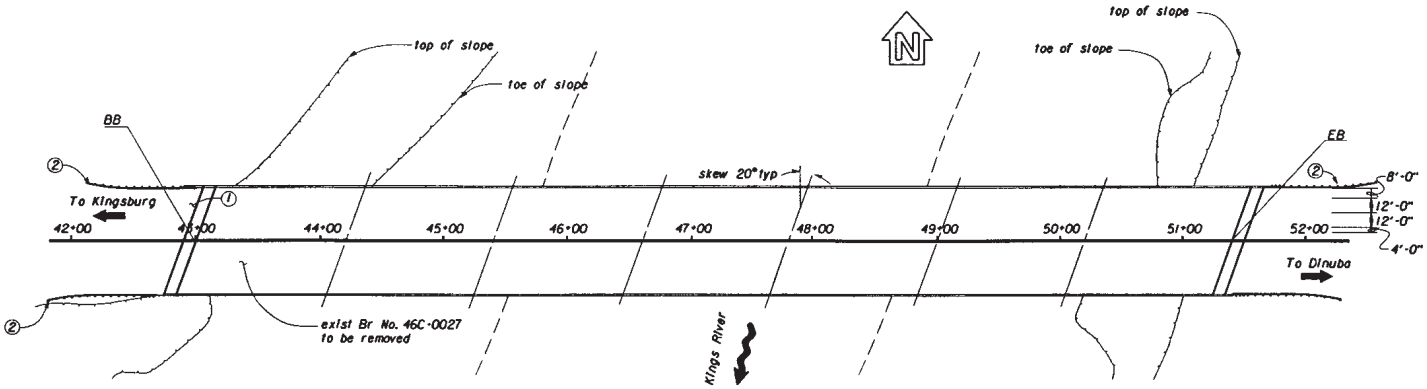

PLAN
1"=50"

LEGEND:
1. Structure Approach (Type EQ)
2. Metal Beam Guard Rail, see "Road Plans"

Appendix K

ALTERNATIVE 4C

DESIGN OVERSIGHT	DESIGN	BY M. Reno	CHECKED	LOAD FACTOR DESIGN	LIVE LOADING: HS20 AND LATERNATIVE AND PERMIT DESIGN LOAD		
	DETAILS	BY G. Young	CHECKED	LAYOUT	BY M. Reno	CHECKED	
SIGNOFF DATE	QUANTITIES	BY	CHECKED	SPECIFICATIONS	BY	PLANS AND SPECS COMPARED	

PREPARED FOR THE COUNTY OF TULARE

Mark L. Reno
PROJECT ENGINEER

BRIDGE NO. 46C-0027
POST MILE

KINGS RIVER BRIDGE (REPLACEMENT)

GENERAL PLAN

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 1/28/02

SHEET OF

1092ogp4b.dgn Rev 1 gry 1/28/03

APPENDIX L
List of Technical Studies

LIST OF TECHNICAL STUDIES

The following technical studies are incorporated by reference into this EIR. The technical studies are on file and available to the public for review during regular business hours at the following locations.

City Hall, City of Dinuba
405 El Monte Way
Dinuba, CA 93618

Tulare County Resource Management Agency
5961 S. Mooney Boulevard
Visalia, CA 93277

Fresno County Department of Public Works and Planning
2220 Tulare Street, 7th Floor
Fresno, CA 93721

Air Quality Analysis Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue In Fresno County To Road 92 In Tulare County, California, 2004, CCS Planning and Engineering / PAR Environmental Services, Inc., January 21, 2005.

Community Impact Assessment for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project, PAR Environmental Services, Inc. 2006.

Draft Location Hydraulic Study, Mountain View Avenue/Avenue 416/El Monte Way Widening Project (*Existing Bridge No. 46C-027)*, Quincy Engineering, Inc., March 2004

Environmental Noise Analysis, Mountain View Avenue/Avenue 416/El Monte Way Widening Project From Bethel Avenue in Fresno County to Road 92 in Tulare County, California, Brown-Buntin Associates Inc./PAR Environmental Services, Inc., January 21, 2005.

Historic Properties Survey Report For The Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue In Fresno County To Road 92 In Tulare County (HPSR) including the *Historic Resources Evaluation Report* (HRER) and the *Archaeological Survey Report* (ASR), PAR Environmental Services, Inc., 2004.

Limited Level I Preliminary Initial Site Assessment for the Mountain View Avenue/Avenue 416/El Monte Way Widening From Bethel Avenue in Fresno County to Road 92 in Tulare County, California, PAR Environmental Services, Inc., January 21, 2005.

Natural Environment Study for Mountain View Avenue/Avenue 416 Widening Fresno and Tulare Counties, California, PAR Environmental Services, Inc., 2007.

Avenue 416 Widening, Fresno and Tulare Counties, *Draft Mitigation Plan*, PAR Environmental Services, Inc. 2007.

Relocation Impact Study for the Mountain View Avenue/Avenue 416/El Monte Way Widening Project, PAR Environmental Services, Inc. 2006.

Transportation Technical Report, Mountain View Avenue/Avenue 416 (El Monte Way) Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County, California, Y&C Transportation Consultants, Inc., June 2002

Visual Resource Assessment for the Mountain View Avenue/Avenue 416 Road Widening from Bethel Avenue in Fresno County to Road 92 in Tulare County, PAR Environmental Services, Inc., January 5, 2005.

APPENDIX M

NRCS Farmland Conversion Impact Rating Form
and
Williamson Act Parcels Potentially Affected

WILLIAMSON ACT PARCELS

MOUNTAIN VIEW AVENUE/AVENUE 416/EL MONTE WAY WIDENING PROJECT: AFFECTED WILLIAMSON ACT PARCELS							
Location	Assessor Parcel Number	Williamson Act Contract Number	Total Parcel Area	Proposed Acquisition (Permanent)*		Alta Irrigation District Easement (Tulare County)*	
				Sq. Ft.		Sq. Ft.	
			Acres	Alt. 1	Alt 2	Alt. 1	Alt. 2
Fresno County							
Segments A and B Bethel Road to Smith Road (County Line)	39307216S		28.6	1873	1873		
	39307220		40	7750	7750		
	39308306		76.3	114201	114201		
	39308309		37.1	27479	27479		
	39308312		19.5	42671	42671		
	39308313		19.2	43944	43944		
	39308332		39.5	85344	85344		
	39309068		38.9	86780	86780		
	39312148		18.5	82560	82560		
	39313026		40	3364	3364		
		TOTAL	**sq. ft.**	**495966**	**495966**		
			acres	**11.39**	**11.39**		
Tulare County							
Segment C Road 32 (County Line) to Road 52 Segment C continued	12040023	13611	24.5	39096			
	12060010	6976	22	34221			
	12060012	7422	177.8	159564			
	12110003	11228	10	3347			
	12110005	13557	80	21671		31948	31945
	12110021	4954	20	8788			
	12110025	9619	36	76138		30117	30106
Segment D Road 52 to Road 64	12160008	6242	28.8	81260	68519		
	12160016	5834	24.9	82542	69405		
	12220015	3809	14.1	43240	43240		
	12220016	3809	5.2	5547	5824		
	12230023	14440	25.3	35022	52673	79544	
	12230031	2347	40.3	86173	28483	133702	104170
Segment E Road 64 to Road 72	12230033	2347	80	59763	58821	133690	133728
	12290051	7048	40.2			53654	53653
		TOTAL	**sq. ft.**	**736372**	**668278**	**462655**	**353602**

MOUNTAIN VIEW AVENUE/AVENUE 416/EL MONTE WAY WIDENING PROJECT: AFFECTED WILLIAMSON ACT PARCELS							
Location	Assessor Parcel Number	Williamson Act Contract Number	Total Parcel Area	Proposed Acquisition (Permanent)*		Alta Irrigation District Easement (Tulare County)*	
				Sq. Ft.		Sq. Ft.	
			Acres	Alt. 1	Alt 2	Alt. 1	Alt. 2
			Acres	16.905	15.342	10.621	8.118
TOTAL WILLIAMSON ACT CONTRACTED ACRES AFFECTED				Alternative 1 Total		Alternative 2 total	
				38.91 acres		34.85 acres	

** Information regarding right-of-way acquisition is preliminary. Right of way acquisition activities cannot commence until the environmental review process has been completed*

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
3530 W. Orchard Court
Visalia, CA 93277

Phone: (559) 734-8732 x3
Fax: (559) 732-2805

May 20, 2005

Melinda M. Rivasplata
PAR Environmental Services

Subject: Farmland Conversion Impact Rating

Dear Melinda Rivasplata,

Enclosed is the Farmland Conversion Impact Rating form you requested.

The two alternatives for the proposed widening of Mountain View Ave/416 Avenue contain parcels either in the Western Tulare County Soil Survey or the Eastern Fresno County Soil Survey. The soils mapped in the locations you designated are: 105, 110, 114, 116, 124, 130, 135, 138, 143 from the Western Survey and Hm, DhB, DhA, DeA, Tzba, Hc, Hsr, Dm, Hst, and DeB from the Fresno County Soil Survey. Of these 116, 124, 130, 143, Hm, Hc, Hsr, and Hst are considered prime farmland. All other soil units are considered state important farmland. Urban and built up areas within map units listed are not considered statewide important farmland. The estimated Store indexes for these soils range from 36 to100, with the average for the two alternatives being 81 and 80 respectively.

If you need additional assistance, kindly call Joe Williams or me at (559) 734-8732 x3

Sincerely,

Elizabeth Palmer
Soil Conservationist
NRCS-Visalia Field Office

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

An Equal Opportunity Provider and Employer

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 11/15/04 — 4. Sheet 1 of 1
1. Name of Project Mountain View Ave/Ave 416 Widening	5. Federal Agency Involved Federal Highway Administration
2. Type of Project Road widening, irrigation canal relocation	6. County and State Fresno and Tulare Counties California
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS — 2. Person Completing Form EC & EP
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☑ NO ☐	4. Acres Irrigated 625,070 — Average Farm Size 240
5. Major Crop(s) Cotton/Alfalfa	6. Farmable Land in Government Jurisdiction Acres: 703,295 % — 7. Amount of Farmland As Defined in FPPA Acres: NA %
8. Name Of Land Evaluation System Used California Storie System	9. Name of Local Site Assessment System None — 10. Date Land Evaluation Returned by NRCS 5/19/05

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	82	80		
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0	0		
C. Total Acres In Corridor	82	80	0	0
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	55	54		
B. Total Acres Statewide And Local Important Farmland	27	27		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0	0		
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	81	80		

PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points				
1. Area In Nonurban Use	15	12	12		
2. Perimeter In Nonurban Use	10	6	6		
3. Percent Of Corridor Being Farmed	20	15	15		
4. Protection Provided By State And Local Government	20	20	20		
5. Size of Present Farm Unit Compared To Average	10	0	0		
6. Creation Of Nonfarmable Farmland	25	0	0		
7. Availability Of Farm Support Services	5	5	5		
8. On-Farm Investments	20	20	20		
9. Effects Of Conversion On Farm Support Services	25	0	0		
10. Compatibility With Existing Agricultural Use	10	0	0		
TOTAL CORRIDOR ASSESSMENT POINTS	160	78	78	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	81	80		
Total Corridor Assessment (From Part VI above or a local site assessment)	160	78	78	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	159	158	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
	81		YES ☐ NO ☑

5. Reason For Selection:

Signature of Person Completing this Part: DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

(1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

(2) How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?
More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
Site is protected - 20 points
Site is not protected - 0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ?
(Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with $1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?
Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?
Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 10/28/04	4. Sheet 1 of 1
1. Name of Project **Mountain View Ave/Ave 416 Widening**	5. Federal Agency Involved **Federal Highway Administration**	
2. Type of Project **Road widening, irrigation canal relocation**	6. County and State **Fresno and Tulare Counties California**	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS	2. Person Completing Form EC & EP
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☒ NO ☐		4. Acres Irrigated 625,070 / Average Farm Size 240
5. Major Crop(s) Cotton, Alfalfa	6. Farmable Land In Government Jurisdiction Acres: 703,295 % 22.7	7. Amount of Farmland As Defined in FPPA Acres: N/A %
8. Name Of Land Evaluation System Used Calif Storie System	9. Name of Local Site Assessment System None	10. Date Land Evaluation Returned by NRCS 5/19/05

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	82	80		
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0	0		
C. Total Acres In Corridor	82	80	0	0
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	55.2	54		
B. Total Acres Statewide And Local Important Farmland	27.4	26.5		
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	.00012	0.00011		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	N/A	N/A		
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	81	80		
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points				
1. Area in Nonurban Use — 15				
2. Perimeter in Nonurban Use — 10				
3. Percent Of Corridor Being Farmed — 20				
4. Protection Provided By State And Local Government — 20				
5. Size of Present Farm Unit Compared To Average — 10				
6. Creation Of Nonfarmable Farmland — 25				
7. Availability Of Farm Support Services — 5				
8. On-Farm Investments — 20				
9. Effects Of Conversion On Farm Support Services — 25				
10. Compatibility With Existing Agricultural Use — 10				
TOTAL CORRIDOR ASSESSMENT POINTS — 160	0	0	0	0
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) — 100				
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)* — 260	0	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

APPENDIX N

State Historic Preservation Officer
Eligibility Concurrence Letter

STATE OF CALIFORNIA – THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

October 24, 2007 Reply To: FHWA050118A

Gregory P. King, Chief
Cultural and Community Studies Office
Division of Environmental Analysis
Department of Transportation
PO Box 942874
Sacramento, CA 94274-0001

Re: Finding of Effect for the Proposed Widening of 12 miles of Roadway from Bethel Avenue in Fresno County to Road 92 in Tulare County, CA

Dear Mr. King:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

The Federal Highway Administration (FHWA) is requesting my concurrence that the proposed project will have an adverse effect on historic properties, specifically the Levis House and the Maya Theater, properties determined eligible for the National Register of Historic Places. Based on my review of the submitted documentation I concur.

Thank you for considering historic properties as part of your project planning. If you have any questions, please contact Natalie Lindquist of my staff at your earliest convenience at (916) 654-0631 or e-mail at nlindquist@parks.ca.gov or Michael McGuirt at (916) 653-8920 or mmcgu@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

STATE OF CALIFORNIA – THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
ptshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

June 27, 2005

Reply To: FHWA050118A

Gail Miller, Chief
Caltrans San Joaquin Environmental Management Branch
2015 E Shields Avenue, Suite A-100
Fresno, CA 93726-5428

Re: Determinations of Eligibility for the Proposed Avenue 416 Widening Project, Tulare County, CA

Dear Ms. Miller:

The California Department of Transportation (Department) is requesting my concurrence, pursuant to stipulation VIII.C.5 of the PA, in its determination that the following properties are eligible for the National Register of Historic Places (NRHP) for the following reasons:

- **Woodhouse Residence**, 1378 E El Monte Way, Dinuba – Eligible under criterion C at the local level as an excellent example of the French Eclectic architectural style, a style minimally found within the City of Dinuba and the outlying rural area. The period of significance is 1925, the approximate year this house and garage were built. **I concur.**

- **Maya Theater**, Corner of Tulare and E El Monte Way, Dinuba – Eligible under criterion A at the local level of significance as an important center for social activity amongst Dinuba's Spanish-speaking population. The period of significance is 1950, when it was established as the Maya Theater. This theater hosted Spanish-language films and events until the mid-1980s when it was closed.

  The theater is also eligible under criterion C at the local level as Dinuba's only intact example of a Modernistic-style movie theater and the best representation of such a theater in the rural region. Under C the period of significance is 1940, the approximate date the theater was built and opened as the Tower Theater. **I concur.**

- **Levis House**, 14252 E Mountain View Avenue, Kingsburg – Eligible under criterion C at the local level as an excellent example of the Craftsman-style with Queen Anne and Tudor Revival elements and as a rare example of a rural house arrangement (two-story house with an engaged tank house). The period of significance is 1910 to 1925, the approximate span of time in which the house, garage and shed were built by the Levi Family. There are no other buildings on the property that represent the Levis' initial development of the property as a farmstead. **I concur.**

- **Nelson Estate**, 15040 E Mountain Avenue, Kingsburg – The house on this property is individually eligible under criterion C at the local level as one of the few well-preserved and exceptional examples of Queen Anne architecture in this area of Fresno County and as a rare regional example of a rural house arrangement (two-story house with an engaged tank house). The property as a whole also appears eligible under criterion C as one of the few intact representations in the area of turn-of-the-century farmstead architecture. Contributing elements consist of all the buildings, access road and vegetation and is bounded by Mountain View Avenue to the south, Zediker Avenue to the west, and orchard land to the north and east. This includes the Queen-Anne house with engaged tankhouse, the barn, the westernmost shed, and the garage. Vegetation includes the large trees within the fences property. **I concur.**

- **Windsor Christian Academy**, 5018 Avenue 46, Reedley – Eligible under criterion A at the local level as a rare example of the small rural school district institutions that were once an important aspect of the educational and social history of the region. Its period of significance is from 1923 to 1960 when the school ceased being part of its own school district.

  Under criterion C the school is also eligible at the local level as a well-preserved example of early 1900s rural school Spanish-Eclectic style architecture in the San Joaquin valley. It is also one of the few remaining representation of the school designs of Ernest J. Kump, Sr., a noted San Joaquin Valley master architect. The period of significance is 1923, the year the school was completed. The property includes the 1923 school and associated front yard (including the palm tree line) only. **I concur.**

- **Nichols House**, 179 East El Monte Way, Dinuba – Eligible under criterion C at the local level of significance as an excellent and early local example of Mission Revival style and seemingly the only example of this style in Dinuba. The period of significance is 1907, the year the building was built. The 1972 doctor's office building does not contribute to the significance of this property. **I concur.**

Pursuant to stipulation VIII.C.5 of the PA, the Department has also determined that the **properties listed in Table 6 (Page 15) of the HPSR** are *not* eligible for the NRHP. In addition, the Department has determined that the following properties are *not* eligible for the NRHP:

- **1496 E El Monte Way**, Dinuba
- **12408 E Mountainview Avenue**, Kingsburg
- **15468 E Mountainview Avenue**, Kingsburg
- **395 East El Monte Way**, Dinuba
- **1375 East El Monte Way**, Dinuba

I concur.

The Department has further determined, also pursuant to stipulation VIII.C.5 of the PA, that the historical archaeological site (Temporary Resource Designation of Ave 416-Site 1, APN 393-121-31, Fresno County) found in the undertaking's area of potential effects (APE) is *not* eligible for inclusion in the NRHP. **I concur.**

One final comment that I would like to make concerns the apparent adequacy of the Department's efforts to identify historic properties in the undertaking's APE pursuant to stipulation VIII.B of the PA. As I reviewed the various documents that the Department submits in support of its above determinations of NRHP eligibility, I became aware that the Department's identification efforts for the undertaking do not appear, pursuant to stipulation VIII.B of the PA, to be "consistent with SHPO guidance." The Department's October 2004 *Historic Properties Survey Report for the Mountain View Avenue/Avenue 416/El Monte Way Widening form Bethel Avenue in Fresno County to Road 92 in Tulare County* defines the vertical component of the undertaking's APE (pp. 7 and 8), but provides no apparent documentation that the potential presence of subsurface historic properties was given substantive consideration. This apparent omission in the Department's analysis of the undertaking's APE conflicts with my more recent guidance to the Department on appropriate identification methods for Section 106 consultations. I mention this issue here in order to notify the Department that I will comment more formally on it if the Department ultimately makes a finding of effect for the undertaking under either stipulation X.B.1 or X.C of the PA. It was my hope for, and, as I understood it, the actual intent of the PA to preserve standing SHPO guidance on this issue. I would appreciate your consideration of this comment.

Please direct any questions or comments to Project Review Unit historian Natalie Lindquist at (916) 654-0631 or e-mail at nlindquist@parks.ca.gov, or Mike McGuirt, Acting Chief of Project Review at (916) 653-8920 or e-mail at mmcgu@parks.ca.gov .

FHWA050118A

Sincerely,

Stephen D. Wilkson for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

MWD:mdm

APPENDIX O

Paleontology Occurrences in Fresno and Tulare Counties

Source: Berkeley Natural History Museum – University of California Museum of Paleontology – Location Search (http://ucmpdp.berkeley.edu/loc.html) (September 2007)

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
Fresno County								
164	Coalinga I	Tertiary	Pliocene	Etchegoin		Pliocene		P
164W	Noren Wood							P
251	Alcalde	Tertiary						P
668-		Tertiary	Eocene	Tejon				I
669-		Tertiary	Miocene	Temblor				I
670-		Tertiary	Eocene	Capay				I
671-		Tertiary	Eocene	Tejon				I
672-		Tertiary	Eocene	Tejon				I
674-		Tertiary	Eocene	Tejon				I
675-		Tertiary	Eocene	Tejon				I
1817-		Tertiary	Eocene	Capay				I
2054-		Tertiary	Miocene	Santa Margarita				I
2055-		Tertiary	Miocene	Santa Margarita				I
2073-		Tertiary	Miocene	Etchegoin				I
2074-		Tertiary	Miocene	San Pablo				I
2075-		Tertiary	Miocene	San Pablo				I
2076-		Tertiary	Miocene	San Pablo				I
2077-		Tertiary	Miocene	San Pablo				I
2079-		Tertiary	Pliocene	Etchegoin				I
2080-		Tertiary	Pliocene	Etchegoin				I
2081-		Tertiary	Pliocene	Etchegoin				I
2082-		Tertiary	Pliocene	Etchegoin				I
2084-		Tertiary	Pliocene	Etchegoin				I
2085-		Tertiary	Pliocene	Etchegoin				I
2087-		Tertiary	Pliocene	Etchegoin				I
2088-		Tertiary	Pliocene	Etchegoin				I
2089-		Tertiary	Pliocene	Etchegoin				I
2090-		Tertiary	Pliocene	Etchegoin				I
2092-		Tertiary	Pliocene	Etchegoin				I
2093-		Tertiary	Pliocene	Etchegoin				I
2094-		Tertiary	Pliocene	Etchegoin				I
2095-		Tertiary	Pliocene	Etchegoin				I
2096-		Tertiary	Pliocene	Etchegoin				I
2097-		Tertiary	Pliocene	Etchegoin				I
2098-		Tertiary	Pliocene	Etchegoin				I
2099-		Tertiary	Pliocene	Etchegoin				I
2100-		Tertiary	Pliocene	Etchegoin				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
2101-		Tertiary	Pliocene	Etchegoin				I
2102-		Tertiary	Pliocene	Etchegoin				I
2103-		Tertiary	Pliocene	Etchegoin				I
2104-		Tertiary	Pliocene	Etchegoin				I
2105-		Tertiary	Pliocene	Etchegoin				I
2106-		Tertiary	Pliocene	Etchegoin				I
2107-		Tertiary	Pliocene	Etchegoin				I
2108-		Tertiary	Pliocene	Etchegoin				I
2109-		Tertiary	Pliocene	Etchegoin				I
2110-		Tertiary	Pliocene	Etchegoin				I
2111-		Tertiary	Pliocene	Etchegoin				I
2117-		Tertiary	Paleocene	Martinez				I
2118-		Tertiary	Paleocene	Martinez				I
2119-								I
2120-								I
2121-								I
2122-								I
2123-								I
2124-		Tertiary	Miocene	Vaqueros				I
2125-								I
2126-		Tertiary	Miocene	Santa Margarita				I
2127-		Tertiary	Miocene	Santa Margarita				I
2128-		Tertiary	Miocene	Santa Margarita				I
2129-		Tertiary	Miocene	Santa Margarita				I
2250-		Tertiary	Miocene	Vaqueros				I
2252-		Tertiary	Miocene	Santa Margarita				I
2254-		Tertiary	Miocene	Vaqueros				I
2255-		Tertiary	Miocene	Santa Margarita				I
2256-		Tertiary	Miocene	Santa Margarita				I
2257-		Tertiary	Miocene	Santa Margarita				I
2258-		Tertiary	Miocene	Santa Margarita				I
2259-		Tertiary	Miocene	Santa Margarita				I
2260-		Tertiary	Miocene	Santa Margarita				I
2261-		Tertiary	Miocene	Santa Margarita				I
2262-		Tertiary	Miocene	Santa Margarita				I
2263-		Tertiary	Miocene	Santa Margarita				I
2264-		Tertiary	Miocene	Santa Margarita				I
2265-		Tertiary	Miocene	Santa Margarita				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
2266-		Tertiary	Miocene	Santa Margarita				I
2267-		Tertiary	Miocene	Santa Margarita				I
2268-		Tertiary	Miocene	Santa Margarita				I
2269-		Tertiary	Miocene	Santa Margarita				I
2270-		Tertiary	Pliocene	Jacalitos				I
2271-		Tertiary	Miocene	Santa Margarita				I
2273-		Tertiary	Miocene	Santa Margarita?				I
2274-		Tertiary	Miocene	Santa Margarita				I
2275-	Domengine Creek	Tertiary	Miocene	Santa Margarita				I
2276-		Tertiary	Miocene	Santa Margarita?				I
2277-		Tertiary	Miocene	Santa Margarita				I
2278-		Tertiary	Miocene	Santa Margarita?				I
2279-		Tertiary	Miocene	Santa Margarita				I
2280-		Tertiary	Miocene	Santa Margarita				I
2283-		Tertiary	Miocene	Santa Margarita				I
2285-		Tertiary	Miocene	Santa Margarita				I
2286-		Tertiary	Eocene	Domengine				I
2287-	Domengine Canyon	Tertiary	Eocene	Domengine				I
2288-	Monocline Ridge	Tertiary	Miocene	Temblor				I
2289-		Tertiary	Eocene	Domengine				I
2290-		Tertiary	Eocene	Domengine				I
2291-		Tertiary	Eocene	Domengine				I
2292-		Tertiary	Eocene	Domengine				I
2293-		Tertiary	Eocene	Domengine				I
2294-		Tertiary	Eocene	Domengine				I
2295-		Tertiary	Eocene	Domengine				I
2296-		Tertiary	Eocene	Domengine				I
2297-		Tertiary	Eocene	Domengine				I
2300-		Tertiary	Miocene	Vaqueros				I
2301-		Tertiary	Miocene	Vaqueros				I
2302-		Tertiary	Miocene	Vaqueros				I
2304-		Tertiary	Miocene	Vaqueros				I
2305-		Tertiary	Miocene	Vaqueros				I
2306-		Tertiary	Miocene	Vaqueros				I
2307-		Tertiary	Miocene	Vaqueros				I
2309-		Tertiary	Miocene	Vaqueros				I
2310-		Tertiary	Miocene	Vaqueros				I
2311-		Tertiary	Miocene	Vaqueros				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
2313-		Tertiary	Miocene	Vaqueros				I
2314-		Tertiary	Miocene	Vaqueros				I
2315-		Tertiary	Miocene	Vaqueros				I
2316-		Tertiary	Miocene	Vaqueros				I
2351-		Tertiary	Miocene	Vaqueros				I
2352-		Tertiary	Miocene	Vaqueros				I
2354-		Tertiary	Miocene	Vaqueros				I
2355-		Tertiary	Miocene	Vaqueros				I
2368-		Tertiary	Pliocene	Etchegoin				I
2369-		Tertiary	Pliocene	Etchegoin				I
2370-		Tertiary	Pliocene	Etchegoin				I
2371-		Tertiary	Pliocene	Etchegoin				I
2372-		Tertiary	Pliocene	Etchegoin				I
2373-		Tertiary	Pliocene	Etchegoin				I
2374-		Tertiary	Pliocene	Etchegoin				I
2375-		Tertiary	Pliocene	Etchegoin				I
2376-		Tertiary	Pliocene	Etchegoin				I
2377-		Tertiary	Pliocene	Etchegoin				I
2378-		Tertiary	Pliocene	Etchegoin				I
2379-		Tertiary	Pliocene	Etchegoin				I
2380-		Tertiary	Pliocene	Jacalitos				I
2383-		Tertiary	Eocene	Tejon				I
2520-		Tertiary	Pliocene	Etchegoin				I
2521-		Tertiary	Pliocene	Etchegoin				I
2522-		Tertiary	Pliocene	Etchegoin				I
2523-		Tertiary	Pliocene	Etchegoin				I
2524-		Tertiary	Pliocene	Jacalitos				I
2525-		Tertiary	Pliocene	Jacalitos				I
2526-		Tertiary	Pliocene	Jacalitos				I
2527-	Jacolitos Creek	Tertiary	Pliocene	Jacalitos				I
2528-		Tertiary	Pliocene	Jacalitos				I
2529-		Tertiary	Pliocene	Jacalitos				I
2530-		Tertiary	Pliocene?	Jacalitos				I
2531-		Tertiary	Pliocene	Jacalitos				I
2532-		Tertiary	Pliocene	Jacalitos				I
2533-		Tertiary	Pliocene	Etchegoin				I
2534-		Tertiary	Pliocene	Etchegoin				I
2535-		Tertiary	Pliocene	Etchegoin				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
2536-	Waltham Creek	Tertiary	Pliocene	Etchegoin				I
2537-		Tertiary	Miocene	Vaqueros				I
2539-		Tertiary	Pliocene	Jacalitos				I
2540-		Tertiary	Pliocene	Etchegoin				I
2544-		Tertiary	Oligocene	Kreyenhagen				I
2545-		Tertiary	Miocene	Temblor				I
2546-		Tertiary	Oligocene	Kreyenhagen				I
2547-		Tertiary	Miocene	Vaqueros				I
2548-		Tertiary	Oligocene	Kreyenhagen				I
2549-		Tertiary	Miocene	Vaqueros				I
2550-		Tertiary	Miocene	Temblor				I
2551-		Tertiary	Pliocene	Jacalitos-Etchegoin				I
2552-		Tertiary	Miocene	Santa Margarita?				I
2553-		Tertiary	Miocene	Santa Margarita?				I
2554-		Tertiary	Pliocene	Etchegoin				I
2556-	Maryland Creek	Tertiary	Miocene	Temblor				I
2557-		Tertiary	Miocene	Vaqueros				I
2558-		Tertiary	Miocene	Vaqueros				I
2559-		Tertiary	Miocene	Temblor				I
2560-		Tertiary	Miocene	Temblor				I
2561-		Tertiary	Miocene	Temblor				I
2562-		Tertiary	Miocene	Temblor				I
2563-		Cretaceous	Late Cretaceous	Chico				I
2564-	Stone Canyon Creek	Tertiary	Pliocene	Etchegoin				I
2565-		Tertiary	Miocene	Temblor				I
2566-		Tertiary	Miocene	Vaqueros				I
2567-		Tertiary	Miocene	Vaqueros				I
2568-		Tertiary	Miocene	Vaqueros				I
2569-		Tertiary	Miocene	Vaqueros				I
2570-		Tertiary	Miocene	Temblor				I
2571-		Tertiary	Miocene	Vaqueros				I
2610-	Waltham Creek	Tertiary	Pliocene	Etchegoin				I
2611-		Tertiary	Pliocene	Etchegoin				I
2612-	Waltham Creek	Tertiary	Pliocene	Etchegoin				I
2613-	Waltham Creek	Tertiary	Pliocene	Etchegoin				I
2614-		Tertiary	Pliocene	Etchegoin				I
2615-		Tertiary	Pliocene					I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
2616-		Tertiary	Pliocene	Jacalitos				I
2617-		Tertiary	Pliocene	Jacalitos				I
2618-		Tertiary	Pliocene	Jacalitos				I
2619-		Tertiary	Pliocene?	Etchegoin?				I
2620-		Tertiary	Pliocene	Etchegoin				I
2621-		Tertiary	Pliocene	Jacalitos				I
2622-		Tertiary	Pliocene?	Etchegoin?				I
2623-		Tertiary	Pliocene	Jacalitos				I
2624-		Tertiary	Pliocene	Etchegoin				I
2625-		Tertiary	Pliocene	Jacalitos				I
2626-		Tertiary	Pliocene	Jacalitos				I
2627-		Tertiary	Pliocene	Etchegoin?				I
2628-		Tertiary	Pliocene	Etchegoin				I
2629-		Tertiary	Pliocene	Etchegoin?				I
2630-		Tertiary	Pliocene	Etchegoin				I
2631-		Tertiary	Pliocene	Etchegoin				I
2632-		Tertiary	Pliocene	Etchegoin				I
2633-		Tertiary	Pliocene	Etchegoin				I
2634-		Tertiary	Pliocene	Etchegoin				I
2635-		Tertiary	Pliocene	Etchegoin				I
2636-		Tertiary	Pliocene	Etchegoin				I
2637-		Tertiary	Pliocene	Etchegoin				I
2638-		Tertiary	Pliocene	Etchegoin				I
2639-		Tertiary	Pliocene	Etchegoin				I
2640-		Tertiary	Pliocene	Etchegoin				I
2641-		Tertiary	Pliocene	Etchegoin				I
2642-		Tertiary	Pliocene	Etchegoin				I
2643-		Tertiary	Pliocene	Etchegoin				I
2644-		Tertiary	Pliocene	Etchegoin				I
2645-		Tertiary	Pliocene	Etchegoin				I
2646-		Tertiary	Pliocene	Etchegoin				I
2647-		Tertiary	Pliocene	Etchegoin				I
2648-		Tertiary	Miocene	Jacalitos				I
2649-		Tertiary	Pliocene	Etchegoin				I
2650-		Tertiary	Pliocene	Etchegoin				I
2651-		Tertiary	Pliocene	Etchegoin				I
2652-		Tertiary	Pliocene	Etchegoin				I
2653-		Tertiary	Pliocene	Etchegoin				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
2654-		Tertiary	Pliocene	Etchegoin				I
2655-		Tertiary	Pliocene	Etchegoin				I
2656-		Tertiary	Pliocene	Etchegoin				I
2657-		Tertiary	Pliocene	Etchegoin				I
2658-		Tertiary	Pliocene	Etchegoin				I
2659-		Tertiary	Pliocene	Etchegoin				I
2660-	Salt Creek	Tertiary	Pliocene	Etchegoin				I
2661-		Tertiary	Pliocene	Etchegoin				I
2662-		Tertiary	Pliocene	Etchegoin				I
2663-		Tertiary	Pliocene	Etchegoin				I
2664-		Tertiary	Pliocene	Etchegoin				I
2665-		Tertiary	Pliocene	Etchegoin				I
2666-		Tertiary	Pliocene	Etchegoin				I
2667-		Tertiary	Pliocene	Etchegoin				I
2668-		Tertiary	Pliocene	Etchegoin				I
2669-		Tertiary	Pliocene	Etchegoin				I
2670-		Tertiary	Pliocene	Etchegoin				I
2671-		Tertiary	Pliocene	Jacalitos				I
2672-		Tertiary	Miocene	Jacalitos				I
2673-		Tertiary	Pliocene	Etchegoin				I
2674-		Tertiary	Pliocene	Etchegoin				I
2675-		Tertiary	Miocene	Jacalitos				I
2676-		Tertiary	Pliocene	Etchegoin				I
2677-		Tertiary	Pliocene	Etchegoin				I
2678-		Tertiary	Pliocene	Etchegoin				I
2679-		Tertiary	Pliocene	Etchegoin				I
2680-		Tertiary	Pliocene	Etchegoin				I
2681-		Tertiary	Pliocene	Etchegoin?				I
2682-		Tertiary	Pliocene	Etchegoin				I
2683-		Tertiary	Pliocene	Etchegoin				I
2684-		Tertiary	Pliocene	Etchegoin				I
2685		Tertiary	Pliocene	Etchegoin				M
2685-		Tertiary	Pliocene	Etchegoin				IM
2686-		Tertiary	Pliocene	Etchegoin				I
2687-		Tertiary	Pliocene	Etchegoin				I
2688-		Tertiary	Pliocene	Etchegoin				I
2689-		Tertiary	Pliocene	Etchegoin				I
2690-		Tertiary	Pliocene	Etchegoin				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
2691-		Tertiary	Pliocene	Etchegoin				I
2692-		Tertiary	Pliocene	Etchegoin				I
2693-		Tertiary	Pliocene	Etchegoin				I
2694-		Tertiary	Pliocene	Etchegoin				I
2728-		Tertiary	Miocene	Temblor				I
2949-		Tertiary	Pliocene	Etchegoin				I
2951-		Tertiary	Pliocene	Jacalitos				I
2952-		Tertiary	Miocene	Temblor				I
2954-		Tertiary	Pliocene	Jacalitos				I
2955-		Tertiary	Miocene	Jacalitos				I
2956-		Tertiary	Pliocene	Etchegoin				I
2965-		Tertiary	Pliocene	Etchegoin				I
2966-		Tertiary	Pliocene	Etchegoin				I
2975-		Quaternary, Tertiary	Pleistocene, Pliocene	San Joaquin?				I
2976-		Tertiary	Pliocene	Etchegoin				I
2977-		Tertiary	Pliocene	Etchegoin				I
2978-		Tertiary	Pliocene	Etchegoin				I
2979-		Tertiary	Pliocene	Etchegoin				I
2980-	Zapato Creek	Tertiary	Pliocene	Etchegoin				I
2981-		Tertiary	Pliocene	Etchegoin				I
2982-		Tertiary	Pliocene	Etchegoin				I
2983-		Tertiary	Pliocene	Etchegoin				I
2984-		Tertiary	Pliocene	Etchegoin				I
2985-		Tertiary	Pliocene	Etchegoin				I
2986-		Tertiary	Pliocene	Etchegoin				I
2987-		Tertiary	Pliocene	Etchegoin				I
2988-		Tertiary	Pliocene	Etchegoin				I
2989-		Tertiary	Pliocene	Etchegoin				I
2990-		Tertiary	Pliocene	Etchegoin				I
2991-		Tertiary	Pliocene	Etchegoin				I
2996-		Tertiary	Pliocene	Etchegoin				I
2998-		Tertiary	Pliocene	Etchegoin				I
2999-		Tertiary	Pliocene	Etchegoin				I
3000-		Tertiary	Pliocene	Etchegoin				I
3007-		Tertiary	Pliocene	Etchegoin				I
3008-		Tertiary	Pliocene	Etchegoin				I
3009-		Tertiary	Pliocene	Etchegoin				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
3010-		Tertiary	Pliocene	Etchegoin				I
3011-		Tertiary	Pliocene	Etchegoin				I
3012-		Tertiary	Pliocene	Etchegoin				I
3013-		Tertiary	Pliocene	Etchegoin				I
3014-		Tertiary	Pliocene	Etchegoin				I
3015-		Tertiary	Pliocene	Etchegoin				I
3016-		Tertiary	Pliocene	Etchegoin?				I
3019-		Tertiary	Pliocene	Etchegoin				I
3020-		Tertiary	Pliocene	Etchegoin				I
3074-		Tertiary	Miocene	Monterey				I
3076-		Tertiary	Miocene	Santa Margarita				I
3077-		Tertiary	Miocene	Santa Margarita				I
3131-	Salt Creek	Tertiary	Eocene	Tejon				I
3314-	Domengine Creek	Tertiary	Eocene	Domengine				I
3315-		Tertiary	Eocene	Domengine				I
3316-	Domengine Creek	Tertiary	Eocene	Domengine				I
3613-		Tertiary	Miocene	Santa Margarita				I
3620-		Tertiary	Miocene	Santa Margarita				I
3623-		Tertiary	Pliocene	Etchegoin				I
3905-		Tertiary	Eocene	Domengine				I
3906-		Tertiary	Eocene	Domengine				I
3907-		Tertiary	Eocene	Domengine				I
3908-		Tertiary	Oligocene	Kreyenhagen				I
3909-		Tertiary	Oligocene	Kreyenhagen				I
3910-		Tertiary	Oligocene	Kreyenhagen				I
3913-		Tertiary	Eocene	Domengine				I
3914-		Tertiary	Eocene	Kreyenhagen				I
3915-		Tertiary	Eocene	Domengine				I
3916-		Tertiary	Oligocene	Kreyenhagen				I
3917-		Tertiary	Oligocene	Kreyenhagen				I
3918-		Tertiary	Oligocene	Kreyenhagen				I
3919-		Tertiary	Oligocene	Kreyenhagen				I
3920-	Domengine Creek	Tertiary	Eocene	Domengine				I
3921-		Tertiary	Eocene	Domengine				I
3922-		Tertiary	Eocene	Domengine				I
3925-		Tertiary	Miocene	Santa Margarita?				I
3958-		Tertiary	Eocene	Domengine				I
3959-		Tertiary	Pliocene	Etchegoin				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
3960-		Tertiary	Pliocene	Etchegoin				I
3961-		Tertiary	Miocene	Temblor				I
3962-	Domengine Creek	Tertiary	Miocene	Santa Margarita				I
3963-		Tertiary	Paleocene	Meganos				I
3964-	Domengine Creek	Tertiary	Oligocene	Kreyenhagen				I
3965-	Alcade Canyon	Tertiary	Pliocene	Etchegoin				I
3966-	Jacalitos Creek	Tertiary	Pliocene	Etchegoin				I
3967-		Tertiary	Miocene	Santa Margarita				I
3968-		Tertiary	Pliocene	Etchegoin				I
3969-		Tertiary	Pliocene	Etchegoin				I
4172-		Tertiary	Miocene	Temblor				I
4173-		Tertiary	Eocene	Domengine				I
4174-		Tertiary	Miocene	Temblor				I
4175-		Tertiary	Eocene	Domengine?				I
5103	La Ceja Hill	Tertiary	Oligocene	Tumey ss				I
7146-		Tertiary	Miocene	Temblor				I
7147-		Tertiary	Eocene	Domengine				I
7148-				Domengine				I
7154-	San Joaquin Coal Mine	Tertiary	Eocene	Domengine				I
7155-		Tertiary	Eocene	Domengine				I
7174-		Tertiary	Eocene	Domengine				I
7175-		Tertiary	Eocene	Domengine				I
7176-	Domengine Creek	Tertiary	Eocene	Domengine				I
7177-		Tertiary	Eocene	Domengine				I
7178-		Tertiary	Oligocene	Kreyenhagen				I
12051	Moreno Shale	Cretaceous	Late Cretaceous	Moreno				M
12177	Panoche Pass	Tertiary	Eocene, Oligocene	Kreyenhagen				M
12694	Seaboard Oil Co., Welsh No. 1	Tertiary	Miocene	Temblor				M
12695	Seaboard Oil Co., Welsh No. 1	Tertiary	Miocene	Temblor				M
12696	Seaboard Oil Co., Welsh No. 1	Tertiary	Miocene	Temblor				M
12697	Seaboard Oil Co., Welsh No. 1	Tertiary	Miocene	Temblor				M

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
12709	Moreno Gulch	Cretaceous	Late Cretaceous	Moreno	Marca Shale Mbr			M
12710	Moreno Gulch	Cretaceous	Late Cretaceous	Moreno	Marca Shale Mbr			M
12711	Moreno Gulch	Cretaceous	Late Cretaceous	Moreno	Marca Shale Mbr			M
12712	Moreno Gulch	Cretaceous	Late Cretaceous	Moreno	Marca Shale Mbr			M
12713	Moreno Gulch	Cretaceous	Late Cretaceous	Moreno	Marca Shale Mbr			M
12714	Moreno Gulch	Cretaceous	Late Cretaceous	Moreno	Marca Shale Mbr			M
12715	Moreno Gulch	Cretaceous	Late Cretaceous	Moreno	Marca Shale Mbr			M
12976	Lodo Gulch	Tertiary	Eocene	Lodo				M
13000	Tumey Hills	Tertiary	Eocene	Lodo				M
13001	Tumey Hills	Tertiary	Eocene	Lodo				M
13002	Tumey Hills	Tertiary	Eocene	Lodo				M
13003	Tumey Hills	Tertiary	Eocene	Lodo				M
13004	Tumey Hills	Tertiary	Eocene	Lodo				M
13005	Tumey Hills	Tertiary	Eocene	Lodo				M
13006	Tumey Hills	Tertiary	Eocene	Lodo				M
13007	Tumey Hills	Tertiary	Eocene	Lodo				M
13008	Tumey Hills	Tertiary	Eocene	Lodo				M
13009	Tumey Hills	Tertiary	Eocene	Lodo				M
13010	Tumey Hills	Tertiary	Eocene	Lodo				M
13011	Tumey Hills	Tertiary	Eocene	Lodo				M
13012	Tumey Hills	Tertiary	Eocene	Lodo				M
13013	Tumey Hills	Tertiary	Eocene	Lodo				M
13014	Tumey Hills	Tertiary	Eocene	Lodo				M
13015	Tumey Hills	Tertiary	Eocene	Lodo				M
13016	Tumey Hills	Tertiary	Eocene	Lodo				M
13017	Tumey Hills	Tertiary	Eocene	Lodo				M
13018	Tumey Hills	Tertiary	Eocene	Lodo				M
13019	Tumey Hills	Tertiary	Eocene	Lodo				M
13020	Tumey Hills	Tertiary	Eocene	Lodo				M
13021	Tumey Hills	Tertiary	Eocene	Lodo				M
13022	Tumey Hills	Tertiary	Eocene	Lodo				M
13023	Tumey Hills	Tertiary	Eocene	Lodo				M
13024	Tumey Hills	Tertiary	Eocene	Lodo				M
13025	Tumey Hills	Tertiary	Eocene	Lodo				M
13026	Tumey Hills	Tertiary	Eocene	Lodo				M
13027	Tumey Hills	Tertiary	Eocene	Lodo				M
13028	Tumey Hills	Tertiary	Eocene	Lodo				M

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
13029	Tumey hills	Tertiary	Eocene	Lodo				M
13030	Tumey Hills	Tertiary	Eocene	Lodo				M
13031	Tumey Hills	Tertiary	Eocene	Lodo				M
13032	Tumey Hills	Tertiary	Eocene	Lodo				M
13033	Tumey Hills	Tertiary	Eocene	Lodo				M
13034	Tumey Hills	Tertiary	Eocene	Lodo				M
13035	Tumey Hills	Tertiary	Eocene	Lodo				M
13036	Tumey Hills	Tertiary	Eocene	Lodo				M
13037	Tumey Hills	Tertiary	Eocene	Lodo				M
13038	Tumey Hills	Tertiary	Eocene	Lodo				M
13039	Tumey Hills	Tertiary	Eocene	Lodo				M
13040	Tumey Hills	Tertiary	Eocene	Lodo				M
13041	Tumey Hills	Tertiary	Eocene	Lodo				M
13042	Tumey Hills	Tertiary	Eocene	Lodo				M
13043	Tumey Hills	Tertiary	Eocene	Lodo				M
13044	Tumey Hills	Tertiary	Eocene	Lodo				M
13045	Tumey Hills	Tertiary	Eocene	Lodo				M
13046	Tumey Hills	Tertiary	Eocene	Lodo				M
13047	Tumey Hills	Tertiary	Eocene	Lodo				M
13048	Tumey Hills	Tertiary	Eocene	Lodo				M
13049	Tumey Hills	Tertiary	Eocene	Lodo				M
13050	Tumey Hills	Tertiary	Eocene	Lodo				M
13051	Tumey Hills	Tertiary	Eocene	Lodo				M
13052	Tumey Hills	Tertiary	Eocene	Lodo				M
13053	Tumey Hills	Tertiary	Eocene	Lodo				M
13054	Tumey Hills	Tertiary	Eocene	Lodo				M
13055	Tumey Hills	Tertiary	Eocene	Lodo				M
13056	Tumey Hills	Tertiary	Eocene	Lodo				M
13057	Tumey Hills	Tertiary	Eocene	Lodo				M
13058	Tumey Hills	Tertiary	Eocene	Lodo				M
13059	Tumey Hills	Tertiary	Eocene	Lodo				M
13060	Tumey Hills	Tertiary	Eocene	Lodo				M
13061	Tumey Hills	Tertiary	Eocene	Lodo				M
13062	Tumey Hills	Tertiary	Eocene	Lodo				M
13063	Tumey Hills	Tertiary	Eocene	Lodo				M
13064	Tumey Hills	Tertiary	Eocene	Lodo				M
13065	Tumey Hills	Tertiary	Eocene	Lodo				M
13066	Tumey Hills	Tertiary	Eocene	Lodo				M

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
13067	Tumey Hills	Tertiary	Eocene	Lodo				M
13068	Tumey Hills	Tertiary	Eocene	Lodo				M
13069	Tumey Hills	Tertiary	Paleocene	Lodo				M
13070	Tumey Hills	Tertiary	Paleocene	Lodo				M
13071	Tumey Hills	Tertiary	Paleocene	Lodo				M
13072	Tumey Hills	Tertiary	Paleocene	Lodo				M
13073	Tumey Hills	Tertiary	Paleocene	Lodo				M
13074	Tumey Hills	Tertiary	Paleocene	Lodo				M
13075	Tumey Hills	Tertiary	Paleocene	Lodo				M
13076	Tumey Hills	Tertiary	Paleocene	Lodo				M
13077	Tumey Hills	Tertiary	Paleocene	Lodo				M
13078	Tumey Hills	Tertiary	Paleocene	Lodo				M
13079	Tumey Gulch	Tertiary	Eocene	Domengine				M
13080	Oil City Section	Tertiary	Eocene	Domengine				M
13081	Oil City Section	Tertiary	Eocene	Kreyenhagen	Canoas Mbr			M
13082	Oil City section	Tertiary	Eocene	Kreyenhagen	Canoas Mbr			M
13083	Garza Canyon	Tertiary	Eocene	Kreyenhagen	Canoas Mbr			M
13084	Garza Canyon	Tertiary	Eocene	Kreyenhagen	Canoas Mbr			M
13085	Garza Canyon	Tertiary	Eocene	Kreyenhagen	Canoas Mbr			M
13101	Tumey Gulch	Tertiary	Miocene	Temblor				M
-2054	Mack Pumping Plant	Tertiary	Miocene	Etchegoin		Hemphillian		V
-2073	Mack Pumping Plant	Tertiary	Miocene	Etchegoin		Hemphillian		V
-2074	Highway 33 No. 1	Tertiary	Miocene	Etchegoin		Hemphillian		V
-2076	Mack Pumping Plant	Tertiary	Miocene	Etchegoin		Hemphillian		V
-2078	Highway 33 No. 2	Tertiary	Pliocene	Etchegoin		Hemphillian		IV
-2079	Mack Pumping Plant	Tertiary	Pliocene	San Joaquin		Blancan		V
-2080	Highway 33 No. 3	Tertiary	Pliocene	San Joaquin		Blancan		V
-2083	Highway 33 No. 4	Tertiary	Pliocene	Etchegoin		Hemphillian		IV
-2085	Mack Pumping Plant	Tertiary	Pliocene	San Joaquin		Blancan		V
-2086	Highway 33 No. 5	Tertiary	Pliocene	Etchegoin		Hemphillian		IV
-2090	Mack Pumping Plant	Tertiary	Miocene	Etchegoin		Hemphillian		V
-2091	Highway 33 No. 6	Tertiary	Pliocene	Etchegoin		Hemphillian		IV
-2119	Mack Pumping Plant	Tertiary	Pliocene	San Joaquin		Blancan		V
-2123	Highway 33 No. 7	Tertiary	Miocene	Etchegoin		Hemphillian		V
-2124	Merychippus Zone 1	Tertiary	Miocene	Temblor		Barstovian		V
-2126	Mack Pumping Plant	Tertiary	Miocene	Etchegoin		Hemphillian		V
-2273	Coalinga 4	Tertiary	Miocene	Etchegoin		Hemphillian		V
-2284	Coalinga 1	Tertiary	Miocene	Santa Margarita		Clarendonian		IV

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
-2368	Mack Pumping Plant 10	Tertiary	Pliocene	San Joaquin		Blancan		V
-2370	Mack Pumping Plant 11	Tertiary	Pliocene	San Joaquin		Blancan		V
-2371	Highway 33 No. 8	Tertiary	Pliocene	San Joaquin		Blancan		V
-2373	Coalinga 4	Tertiary	Miocene	Etchegoin		Hemphillian		V
-2374	Mack Pumping Plant 12	Tertiary	Pliocene	San Joaquin		Blancan		V
-2381	Merychippus Zone 2	Tertiary	Miocene	Temblor	Upper Temblor	Barstovian		IV
-2386	Cantua Creek 1	Tertiary	Miocene	Etchegoin		Hemphillian		IV
-2387	Cantua Creek 2	Tertiary	Miocene	Etchegoin		Hemphillian		IV
-2949	Highway 33 No. 9	Tertiary	Pliocene	San Joaquin		Blancan		V
-2950	Mack Pumping Plant 13	Tertiary	Miocene, Pliocene	Etchegoin		Hemphillian		IV
-2951	Mack Pumping Plant 14	Tertiary	Miocene	Etchegoin		Hemphillian		V
-2974	Zapato Creek	Tertiary	Miocene, Pliocene	Etchegoin		Hemphillian		IV
A568		Tertiary	Pliocene	Etchegoin				I
A625		Tertiary	Pliocene	Etchegoin				I
A626		Tertiary	Pliocene	Etchegoin				I
A627		Tertiary	Pliocene	Etchegoin				I
A628		Tertiary	Pliocene	Etchegoin				I
A629		Tertiary	Pliocene	Etchegoin				I
A630		Tertiary	Pliocene	Etchegoin				I
A631	Jacalitos Hills	Tertiary	Pliocene	Etchegoin				I
A632	Jacalitos Hills	Tertiary	Pliocene	Etchegoin				I
A633		Tertiary	Pliocene	Etchegoin				I
A634		Tertiary	Pliocene	Etchegoin				I
A635		Tertiary	Pliocene	Etchegoin				I
A636		Tertiary	Pliocene	Etchegoin				I
A637		Tertiary	Pliocene	Etchegoin				I
A638		Tertiary	Pliocene	Etchegoin				I
A639		Tertiary	Pliocene	Etchegoin				I
A640		Tertiary	Pliocene	Etchegoin				I
A641		Tertiary	Pliocene	Etchegoin				I
A642		Tertiary	Pliocene	Etchegoin				I
A643		Tertiary	Pliocene	Etchegoin				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
A644		Tertiary	Pliocene	Etchegoin				I
A645		Tertiary	Miocene	Jacalitos	Upper Jacalitos			I
A646		Tertiary	Pliocene	Etchegoin				I
A647		Tertiary	Pliocene	Etchegoin				I
A648		Tertiary	Pliocene	Etchegoin				I
A649		Tertiary	Pliocene	Etchegoin				I
A650		Tertiary	Pliocene	Etchegoin				I
A651		Tertiary	Pliocene	Etchegoin				I
A652	Jacalitos Hills	Tertiary	Pliocene	Etchegoin				I
A653	Jacalitos Hills	Tertiary	Pliocene	Etchegoin				I
A654		Tertiary	Pliocene	Etchegoin				I
A655		Tertiary	Pliocene	Etchegoin				I
A656		Tertiary	Pliocene	Etchegoin	Upper Etchegoin			I
A657		Tertiary	Pliocene	Etchegoin				I
A658		Tertiary	Pliocene	Etchegoin				I
A659		Tertiary	Pliocene	Etchegoin				I
A787	Kettleman Hills	Tertiary	Pliocene	Etchegoin?				I
A808		Tertiary	Pliocene	Etchegoin				I
A820		Tertiary	Paleocene	Meganos				I
A821	Domengine Canyon	Tertiary	Paleocene	Meganos				I
A921		Tertiary	Eocene	Domengine				I
A972		Tertiary	Eocene	Domengine				I
A973	Domengine Creek	Tertiary	Eocene	Domengine				I
A974		Tertiary	Eocene	Domengine				I
A977		Tertiary	Eocene	Domengine				I
A978	Domengine Creek	Tertiary	Eocene	Domengine				I
A979		Tertiary	Eocene	Domengine				I
A1007	Los Gatos Creek	Tertiary	Eocene	Domengine				I
A1008		Tertiary	Eocene	Domengine				I
A1009		Tertiary	Eocene	Domengine				I
A1010		Tertiary	Eocene	Domengine				I
A1027	Valdes Ranch	Tertiary	Eocene	Domengine				I
A1167		Tertiary	Eocene	Domengine				I
A1168		Tertiary	Eocene	Domengine				I
A1218		Tertiary	Eocene	Domengine				I
A1219		Tertiary	Eocene	Domengine				I
A1220		Tertiary	Eocene	Domengine				I
A1221		Tertiary	Eocene	Domengine				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
A1222		Tertiary	Eocene	Domengine				I
A1223	California Coal Mine	Tertiary	Eocene	Domengine				I
A1284	Panoche Creek	Tertiary	Paleocene	Martinez				IM
A1303		Tertiary	Pliocene	Etchegoin	Lower Mulinia Bed			I
A1304	Alcalde Creek	Tertiary	Pliocene	Etchegoin				I
A1305		Tertiary	Miocene	Temblor				I
A1306		Tertiary	Miocene	Temblor	Button Bed			I
A1308	Los Gatos Creek	Tertiary	Eocene	Domengine				I
A1340	Reef Ridge	Tertiary	Miocene	Temblor				I
A1396		Tertiary	Miocene	Temblor				I
A1418		Tertiary	Miocene	Temblor				I
A1419		Tertiary	Miocene	Temblor				I
A1506		Tertiary	Eocene	Domengine				I
A1676		Tertiary	Pliocene	Tulare				I
A1834	Domengine Creek	Tertiary	Oligocene	Kreyenhagen	Leda Beds			IM
A1859		Cretaceous	Late Cretaceous	Moreno				M
A1860		Cretaceous	Late Cretaceous	Moreno				M
A1861		Cretaceous	Late Cretaceous	Moreno				M
A1862		Cretaceous	Late Cretaceous	Moreno				M
A1863		Cretaceous	Late Cretaceous	Moreno				M
A1864		Cretaceous	Late Cretaceous	Moreno				M
A1865		Cretaceous	Late Cretaceous	Moreno				M
A1866		Cretaceous	Late Cretaceous	Moreno				M
A1867		Cretaceous	Late Cretaceous	Moreno				M
A1868		Cretaceous	Late Cretaceous	Moreno				M
A1869		Cretaceous	Late Cretaceous	Moreno				M
A1870		Cretaceous	Late Cretaceous	Moreno				M
A1871		Cretaceous	Late Cretaceous	Moreno				M
A1872		Cretaceous	Late Cretaceous	Moreno				M
A1873		Cretaceous	Late Cretaceous	Moreno				M
A1874		Cretaceous	Late Cretaceous	Moreno				M
A1875	S.O. McDonald Isl. Farms #1	Cretaceous	Late Cretaceous	Moreno				M
A1876	S.O. McDonald Isl. Farms #1	Cretaceous	Late Cretaceous	Moreno				M
A1877		Cretaceous	Late Cretaceous	Moreno				M
A1878		Cretaceous	Late Cretaceous	Moreno				M

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
A1879		Cretaceous	Late Cretaceous	Moreno				M
A1880		Cretaceous	Late Cretaceous	Moreno				M
A1881		Cretaceous	Late Cretaceous	Moreno				M
A1882		Cretaceous	Late Cretaceous	Moreno				M
A1883		Cretaceous	Late Cretaceous	Moreno				M
A1884		Tertiary	Eocene	Tumey				M
A1885		Tertiary	Eocene	Domengine				M
A1886		Tertiary	Eocene	Tumey				M
A1887		Tertiary	Eocene	Kreyenhagen				M
A1898	Domengine Creek	Tertiary	Eocene	Arroyo Hondo				IM
A2520		Cretaceous	Late Cretaceous	Moreno				M
A2553		Cretaceous	Late Cretaceous	Moreno				M
A2554		Cretaceous	Late Cretaceous	Moreno				M
A2555		Cretaceous	Late Cretaceous	Moreno				M
A2556		Tertiary	Eocene	Kreyenhagen				M
A2557		Tertiary	Eocene	Kreyenhagen				M
A2558		Tertiary	Eocene	Kreyenhagen				M
A2908	S of Oil City	Cretaceous	Late Cretaceous	Moreno				M
A2953		Cretaceous						IM
A2954		Tertiary	Eocene	Domengine				I
A2955		Tertiary	Eocene	Domengine				I
A2988		Cretaceous	Late Cretaceous	Panoche				I
A3092		Tertiary	Eocene	Domengine				I
A3139		Tertiary	Miocene	Temblor				I
A3149		Tertiary	Eocene	Domengine				I
A3164		Tertiary,Quaternary	Pliocene, Pleistocene	Tulare				I
A3167		Tertiary,Quaternary	Pliocene, Pleistocene	San Joaquin Clays				I
A3226	Taylor and Jacalitos Creek Junction	Jurassic		Knoxville				IM
A3227		Tertiary	Pliocene	Etchegoin				I
A3228		Tertiary	Pliocene	Etchegoin				I
A3229		Tertiary	Pliocene	Etchegoin				I
A3231	Pinnacle Sand	Tertiary	Miocene	Santa Margarita				I
A3294		Tertiary	Pliocene	Etchegoin				I
A3301		Tertiary	Pliocene	Etchegoin				I
A3302		Tertiary	Pliocene	Etchegoin				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
A3306		Tertiary	Pliocene	Jacalitos				I
A3310		Tertiary	Pliocene	Etchegoin				I
A3312		Tertiary	Pliocene	Etchegoin				I
A3321		Tertiary	Pliocene	Jacalitos				I
A3322		Tertiary	Pliocene	Jacalitos				I
A3325		Tertiary	Pliocene	Etchegoin				I
A3327		Tertiary	Pliocene	Etchegoin				I
A3331		Tertiary	Miocene	Santa Margarita				I
A3333		Tertiary	Miocene	Santa Margarita				I
A3334		Tertiary	Paleocene	Martinez				I
A3337	Cantua Creek	Tertiary	Miocene	Santa Margarita				I
A3345		Tertiary	Miocene	Temblor				I
A3346	Kettleman Anticline	Tertiary	Pliocene	Etchegoin				I
A3394	Panoche/Silver Cr. junction	Tertiary	Paleocene	Martinez				I
A3429	Divide btw Tumey/Silver Cr.	Tertiary	Oligocene	Kreyenhagen				I
A3485		Tertiary	Miocene	Santa Margarita				I
A3826		Cretaceous	Late Cretaceous	Panoche				I
A3827		Cretaceous	Late Cretaceous	Panoche				I
A3828		Cretaceous	Late Cretaceous	Panoche				I
A3829		Cretaceous		Panoche				I
A3830		Cretaceous	Late Cretaceous?	Panoche ?				I
A3831		Cretaceous	Late Cretaceous?	Panoche ?				I
A3832		Cretaceous	Late Cretaceous?	Panoche ?				I
A3833		Cretaceous	Late Cretaceous?	Panoche ?				I
A3835		Cretaceous	Late Cretaceous	Panoche				I
A3837	Escarpado Canyon	Cretaceous	Late Cretaceous	Panoche				I
A3844		Cretaceous	Late Cretaceous?	Panoche Shale (Moreno?)				I
A4123		Tertiary	Miocene	Temblor				I
A4273	San Joaquin Coal Mine	Tertiary	Eocene	Domengine				I
A4280		Tertiary	Eocene	Lodo				M
A4281	Domengine Creek	Tertiary	Miocene	Santa Margarita	Upper Santa Margarita			I
A4282	Domengine Creek	Tertiary	Miocene	Santa Margarita	Upper Santa Margarita			I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
A4283		Tertiary	Miocene	Santa Margarita				I
A4284		Tertiary	Miocene	Santa Margarita				I
A4285		Tertiary	Miocene	Santa Margarita				I
A4286		Tertiary	Miocene	Santa Margarita				I
A4287		Tertiary	Pliocene	Etchegoin				I
A4288	Jacalitos Creek	Tertiary	Pliocene	Etchegoin				I
A4289	Jacalitos Creek	Tertiary	Pliocene	Etchegoin				I
A4290	Jacalitos Creek	Tertiary	Pliocene	San Joaquin				I
A4291	Jacalitos Creek	Tertiary	Pliocene	Etchegoin				I
A4293		Tertiary	Miocene	Santa Margarita				I
A4297		Tertiary	Miocene	Santa Margarita				I
A4298		Tertiary	Miocene	Santa Margarita				I
A4314		Tertiary	Eocene	Domengine				I
A4317		Tertiary	Miocene	Temblor				I
A4318		Tertiary	Miocene	Temblor				I
A4319		Tertiary	Miocene	Temblor				I
A4331	Type Lodo Fm offset section	Tertiary	Eocene	Lodo				M
A4334	Panoche Hill	Cretaceous	Late Cretaceous	Moreno				M
A4344		Tertiary	Pliocene	Etchegoin				I
A4346		Tertiary	Miocene	Temblor				I
A4347		Tertiary, Quaternary	Pliocene, Pleistocene	San Joaquin	Upper San Joaquin			I
A4450	Indian Peak	Cretaceous	Late Cretaceous	Moreno				M
A4471		Tertiary	Paleocene	Lodo				IM
A4514		Tertiary	Eocene					M
A4657		Tertiary	Paleocene	Lodo				I
A4662	Domengine Creek	Tertiary	Miocene	Temblor				I
A4677	Domengine Creek	Tertiary	Miocene	Santa Margarita				I
A4678		Tertiary	Eocene	Kreyenhagen				I
A4679		Tertiary	Miocene	Temblor				I
A4681	Domengine Creek	Tertiary	Miocene	Santa Margarita				I
A4693	Seaboard Welch No. 1	Tertiary	Oligocene	Tumey-Kreyenhagen				M
A4701	Oil Canyon Road	Tertiary	Miocene	Temblor				I
A4755	Kettleman Hills	Tertiary	Pliocene	Etchegoin				I
A5030	S slope of hill 2118	Tertiary	Eocene	Kreyenhagen Fm.	Canoas Siltstone			M
A6723		Tertiary	Miocene	Temblor				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
A6724		Tertiary	Miocene	Santa Margarita				I
A6725		Tertiary	Miocene	Santa Margarita				I
A6826		Tertiary	Eocene	Kreyenhagen				I
A6828		Tertiary	Eocene	Kreyenhagen				I
A6829		Tertiary	Eocene	Kreyenhagen				I
A6830		Tertiary	Eocene	Kreyenhagen				I
A6831				Kreyenhagen				I
A6832		Tertiary	Eocene	Kreyenhagen				I
A6838		Tertiary	Paleocene	Lodo				IM
A6839		Cretaceous		Panoche				I
A6840		Tertiary	Miocene	Temblor				I
A6841		Tertiary	Miocene	Monterey				I
A6842		Tertiary	Eocene					I
A6843		Tertiary	Eocene					IM
A6844		Tertiary	Eocene					IM
A6899		Tertiary	Eocene	Meganos	Domengine Mbr			IM
A6900		Tertiary	Eocene					IM
A6901		Tertiary	Oligocene					IM
A6902		Tertiary	Eocene	Kreyenhagen	Canoas Siltstone			IM
A7588		Tertiary	Pliocene	Jacalitos				I
A7589		Tertiary	Pliocene	Jacalitos				I
A7590		Tertiary	Pliocene	Jacalitos				I
A7776		Tertiary	Eocene	Kreyenhagen				IM
A7777		Tertiary	Eocene	Kreyenhagen				IM
A7778		Tertiary	Eocene	Kreyenhagen				IM
A7779		Tertiary	Eocene	Kreyenhagen				IM
A7780		Tertiary	Eocene	Kreyenhagen				IM
A7781		Tertiary	Eocene	Kreyenhagen				IM
A7782		Tertiary	Eocene	Kreyenhagen				IM
A7783		Tertiary	Eocene	Kreyenhagen				IM
A7784		Tertiary	Eocene	Kreyenhagen				IM
A7785		Tertiary	Eocene	Kreyenhagen				IM
A7786		Tertiary	Eocene	Kreyenhagen				IM
A7787		Tertiary	Eocene	Kreyenhagen				IM
A7788		Tertiary	Eocene	Kreyenhagen				IM
A7789		Tertiary	Eocene	Kreyenhagen				IM
A7790		Tertiary	Eocene	Kreyenhagen				IM

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
A7791		Tertiary	Eocene	Kreyenhagen				IM
A7792		Tertiary	Eocene	Kreyenhagen				IM
A7793		Tertiary	Eocene	Kreyenhagen				IM
A7794		Tertiary	Eocene	Kreyenhagen				IM
A7795		Tertiary	Eocene	Kreyenhagen				IM
A7796		Tertiary	Eocene	Kreyenhagen				IM
A7797		Tertiary	Eocene	Kreyenhagen				IM
A7798		Tertiary	Eocene	Kreyenhagen				IM
A7799		Tertiary	Eocene	Kreyenhagen				IM
A7800		Tertiary	Eocene	Kreyenhagen				IM
A7801		Tertiary	Eocene	Kreyenhagen				IM
A7802		Tertiary	Eocene	Kreyenhagen				IM
A7803		Tertiary	Eocene	Kreyenhagen				IM
A7804		Tertiary	Eocene	Kreyenhagen				IM
A7805		Tertiary	Eocene	Kreyenhagen				IM
A7806		Tertiary	Eocene	Kreyenhagen				IM
A7807		Tertiary	Eocene	Kreyenhagen				IM
A7808		Tertiary	Eocene	Kreyenhagen				IM
A7809		Tertiary	Eocene	Kreyenhagen				IM
A7810		Tertiary	Eocene	Kreyenhagen				IM
A7811		Tertiary	Eocene	Kreyenhagen				IM
A7812		Tertiary	Eocene	Kreyenhagen				IM
A7813		Tertiary	Eocene	Kreyenhagen				IM
A7814		Tertiary	Eocene	Kreyenhagen				IM
A7815		Tertiary	Eocene	Kreyenhagen				IM
A7816		Tertiary	Eocene	Kreyenhagen				IM
A7817		Tertiary	Eocene	Kreyenhagen				IM
A7818		Tertiary	Eocene	Kreyenhagen				IM
A7819		Tertiary	Eocene	Kreyenhagen				IM
A7820		Tertiary	Eocene	Kreyenhagen				IM
A7821		Tertiary	Eocene	Kreyenhagen				IM
A7822		Tertiary	Eocene	Kreyenhagen				IM
A7823		Tertiary	Eocene	Kreyenhagen				IM
A7824		Tertiary	Eocene	Kreyenhagen				IM
A7825		Tertiary	Eocene	Kreyenhagen				IM
A7826		Tertiary	Eocene	Kreyenhagen				IM
A7827		Tertiary	Eocene	Kreyenhagen				IM
A7828		Tertiary	Eocene	Kreyenhagen				IM

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
A7829		Tertiary	Eocene	Kreyenhagen				IM
A7830		Tertiary	Eocene	Kreyenhagen Sh Domengine				IM
A7831		Tertiary	Eocene	Kreyenhagen				IM
A7832	Cantua Creek	Tertiary	Eocene	Kreyenhagen	Hondo			IM
A7833	Cantua Creek	Tertiary	Eocene	Kreyenhagen	Hondo			IM
A7834	Cantua Creek	Tertiary	Eocene	Lodo	Hondo			IM
A7835	Cantua Creek	Tertiary	Eocene	Lodo	Hondo			IM
A7836	Cantua Creek	Tertiary	Eocene	Lodo	Hondo			IM
A7837	Cantua Creek	Tertiary	Eocene	Lodo	Hondo			IM
A7838	Cantua Creek	Tertiary	Eocene	Lodo	Hondo			IM
A7839	Cantua Creek	Tertiary	Eocene	Lodo	Hondo			IM
A7840	Cantua Creek	Tertiary	Eocene	Lodo	Hondo			IM
A7841	Cantua Creek	Tertiary	Eocene	Lodo	Hondo			IM
A7842	Cantua Creek	Tertiary	Eocene	Lodo	Hondo			IM
A7843	Cantua Creek	Tertiary	Eocene	Lodo	Hondo			IM
A7844	Cantua Creek	Tertiary	Eocene	Lodo	Hondo			IM
A7845	Cantua Creek	Tertiary	Eocene	Cantna				IM
A7846	Cantua Creek	Tertiary	Eocene	Cantna				IM
A7847	Cantua Creek	Tertiary	Eocene	Lodo	Cantua			IM
A7848	Cantua Creek	Tertiary	Eocene	Lodo	Cantua			IM
A7849	Cantua Creek	Tertiary	Eocene	Lodo	Cantua			IM
A7850	Cantua Creek	Tertiary	Eocene	Lodo	Cantua			IM
A7851	Cantua Creek	Tertiary	Eocene	Lodo	Cantua			IM
A7852	Cantua Creek	Tertiary	Eocene	Lodo	Cantua			IM
A7853	Cantua Creek	Tertiary	Eocene	Lodo	Cantua			IM
A7854	Cantua Creek	Tertiary	Eocene	Lodo	Cantua			IM
A7855		Tertiary	Eocene	Lodo	Cerros			IM
A7856		Tertiary	Eocene	Lodo	Cerros			IM
A7857		Tertiary	Eocene	Lodo	Cerros			IM
A7858		Tertiary	Eocene	Lodo	Cerros			IM
A7859		Tertiary	Eocene	Lodo	Cerros			IM
A7860		Tertiary	Eocene	Lodo	Cerros			IM
A7861		Tertiary	Eocene	Lodo	Cerros			IM
A7862	Cantua Creek	Tertiary	Eocene	Lodo	Cerros			IM
A7863		Tertiary	Eocene	Lodo	Cerros			IM
A7864	Cantua Creek	Tertiary	Eocene	Lodo	Cerros			IM
A7865	Cantua Creek	Tertiary	Eocene	Lodo	Cerros			IM

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
A7943	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7944	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7945	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7946	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7947	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7948	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7949	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7950	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7951	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7952	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7953	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7954	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7955	Oil Canyon	Tertiary	Eocene	Kreyenhagen	Canoas			IM
A7956	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7957	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7958	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7959	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7960	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7961	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7962	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7963	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7964	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7965	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7966	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7967	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7968	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7969	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7970	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7971	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7972	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7973	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7974	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7975	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7976	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7977	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7978	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7979	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7980	Oil Canyon	Tertiary	Eocene	Lodo				IM

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
A7981	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7983	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7984	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7985	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7986	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7987	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7988	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7989	Oil Canyon	Tertiary	Eocene	Lodo				IM
A7990a	Oil Canyon	Tertiary	Eocene	Lodo Fm.				M
A7990b	Oil Canyon	Tertiary	Eocene	Lodo Fm.				M
A7990c	Oil Canyon	Tertiary	Eocene	Lodo Fm.				M
A7990d	Oil Canyon	Tertiary	Eocene	Lodo Fm.				M
A7991a	Oil Canyon	Tertiary	Eocene	Lodo Fm.				M
A7991b	Oil Canyon	Tertiary	Eocene	Lodo Fm.				M
A8368		Tertiary	Eocene	Domengine				I
A9056		Tertiary	Oligocene	Kreyenhagen				I
A9063		Tertiary	Oligocene	Kreyenhagen				I
A9347		Tertiary	Miocene	Temblor				I
A9694	Jacolitos Creek Canyon	Tertiary	Pliocene	Jacalitos				I
A9717		Tertiary	Paleocene	Lodo				I
A9728	Jasper Canyon	Tertiary	Pliocene	Jacalitos				I
A9729		Tertiary	Miocene	Santa Margarita				I
A9730	Domengine Creek	Tertiary	Miocene	Santa Margarita				I
A9731	Domengine Creek	Tertiary	Miocene	Santa Margarita				I
A9732	Coalmine Canyon	Tertiary	Eocene	Domengine				I
A9743	Coalmine Canyon	Tertiary	Eocene	Kreyenhagen				I
A9744		Tertiary	Miocene	Temblor				I
A9749	Jasper Canyon	Tertiary	Pliocene	Jacalitos				I
A9750		Tertiary	Eocene	Kreyenhagen				I
A9752		Tertiary	Pliocene	Etchegoin				I
A9753	Wildcat Canyon	Cretaceous		Pachydiscus Sl				I
A9754	Wildcat Canyon	Cretaceous		Pachydiscus Sl				IM
A9755		Cretaceous		Moreno				I
B564		Tertiary	Eocene	Kreyenhagen				I
B1693		Cretaceous		Moreno				M
B1694		Cretaceous		Moreno				M
B2200		Cretaceous	Late Cretaceous	Panoche				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
B2644		Tertiary	Pliocene	Jacalitos				I
B2645		Cretaceous	Late Cretaceous	Panoche				I
B4289		Tertiary	Pliocene	Jacalitos				I
B4342		Tertiary	Pliocene	Jacalitos				I
B4344		Tertiary	Pliocene	Jacalitos				I
B4345		Tertiary	Pliocene	Jacalitos				I
B4346		Tertiary	Pliocene	Jacalitos				I
B4348		Tertiary	Miocene	Santa Margarita				I
B4351		Tertiary	Eocene	Kreyenhagen				I
B4352		Cretaceous		Panoche				I
B5049		Tertiary	Eocene	Domengine				I
B5050		Tertiary	Miocene	Temblor				I
B5051		Tertiary	Pliocene	Jacalitos				I
B5313		Tertiary	Pliocene	Jacalitos				I
B5828		Cretaceous		Moreno				I
B6367		Tertiary	Pliocene	Jacalitos				I
B6368		Tertiary	Pliocene	Jacalitos				I
B6369		Tertiary	Pliocene	Jacalitos				I
B6521		Tertiary	Miocene	Santa Margarita				I
B6522		Tertiary	Miocene	Santa Margarita				I
B6523		Tertiary	Miocene	Santa Margarita				I
B6524		Tertiary	Miocene	Santa Margarita				I
B6525		Tertiary	Miocene	Santa Margarita				I
B6526		Tertiary	Miocene	Santa Margarita				I
B6528		Tertiary	Pliocene	Etchegoin				I
B6529		Tertiary	Pliocene	Etchegoin				I
B6530		Tertiary	Pliocene	Etchegoin				I
B6531		Tertiary	Pliocene	Etchegoin				I
B6532		Tertiary	Pliocene	Etchegoin				I
B6533		Tertiary	Pliocene	Etchegoin				I
B6534		Tertiary	Pliocene	Etchegoin				I
B6535		Tertiary	Pliocene	Etchegoin				I
B6541		Tertiary	Pliocene	Etchegoin				I
B6542		Tertiary	Pliocene	Etchegoin				I
B6543		Tertiary	Pliocene	Etchegoin				I
B6544		Tertiary	Pliocene	Etchegoin				I
B6545		Tertiary	Pliocene	Etchegoin				I
B6546		Tertiary	Pliocene	Etchegoin				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
B6547		Tertiary	Pliocene	Etchegoin				I
B6548		Tertiary	Pliocene	Etchegoin				I
B6620		Tertiary	Pliocene	Jacalitos				I
B6621		Tertiary	Pliocene	Jacalitos				I
B7083		Tertiary	Eocene	Kreyenhagen				I
B7084		Tertiary	Miocene	Santa Margarita				I
B7085		Tertiary	Miocene	Temblor				I
B7086		Tertiary	Miocene	Temblor				I
B7087		Tertiary	Pliocene	Jacalitos				I
B7089		Tertiary	Pliocene	Jacalitos				I
B7298		Tertiary	Eocene	Domengine				I
B7722		Tertiary	Pliocene	Tulare				I
B7726		Tertiary	Pliocene	Etchegoin				I
B7727		Tertiary	Pliocene	San Joaquin				I
B7728		Tertiary	Pliocene	San Joaquin				I
B7729		Tertiary	Pliocene	San Joaquin				I
B7730		Tertiary	Pliocene	San Joaquin				I
B7803		Tertiary	Pliocene	San Joaquin				I
B8472		Tertiary	Eocene	Lodo				I
B8577		Tertiary	Miocene	Temblor				I
B8578	Gres Canyon	Tertiary	Eocene	Domengine				I
B8579		Tertiary	Miocene	Temblor				I
B8580	Gres Canyon	Tertiary	Paleocene	Lodo				I
B8583		Tertiary	Eocene	Domengine				I
B8584		Tertiary	Miocene	Temblor				I
B8596		Tertiary	Pliocene	Etchegoin				I
B8599	Capita Canyon	Tertiary	Eocene	Domengine				I
B8600		Tertiary	Miocene	Temblor				I
B8601		Tertiary	Miocene	Temblor	Big Blue			I
B8602		Tertiary	Miocene	Temblor				I
B8603		Tertiary	Miocene	Temblor	Big Blue			I
B8604	Cantua Creek	Tertiary	Miocene	Santa Margarita				I
B8605		Tertiary	Miocene	Santa Margarita				I
B8606		Tertiary	Miocene	Temblor	Sandstone			I
B8607		Tertiary	Miocene	Temblor	Sandstone			I
B8608		Tertiary	Miocene	Temblor	Sandstone			I
B8609		Tertiary	Miocene	Temblor	Sandstone			I
B8610		Tertiary	Miocene	Temblor				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
B8611		Tertiary	Miocene	Temblor	Sandstone			I
B8612		Tertiary	Miocene	Temblor	Sandstone			I
B8613		Tertiary	Miocene	Temblor	Sandstone			I
B8614		Tertiary	Miocene	Temblor				I
B8615		Tertiary	Miocene	Temblor	Sandstone			I
B8616		Tertiary	Miocene	Temblor				I
B8617		Tertiary	Miocene	Temblor				I
B8618		Tertiary	Miocene	Temblor				I
B8666		Tertiary	Miocene	Temblor				I
B9034		Tertiary	Eocene	Kreyenhagen				M
B9035		Tertiary	Eocene	Kreyenhagen				M
B9036		Tertiary	Eocene	Kreyenhagen				M
B9037		Tertiary	Eocene	Kreyenhagen				M
B9038		Tertiary	Eocene	Kreyenhagen				M
B9039		Tertiary	Eocene	Kreyenhagen				M
B9040		Tertiary	Eocene	Kreyenhagen				M
B9041		Tertiary	Eocene	Kreyenhagen				M
B9042		Tertiary	Eocene	Kreyenhagen				M
B9043		Tertiary	Eocene	Kreyenhagen				M
B9044		Tertiary	Eocene	Kreyenhagen				M
B9045		Tertiary	Eocene	Domengine				M
B9046		Tertiary	Eocene	Domengine				M
B9047		Tertiary	Eocene	Domengine				IM
B9048		Tertiary	Eocene	Domengine				M
B9049		Tertiary	Eocene	Domengine				M
B9050		Tertiary	Eocene	Domengine				M
B9051		Tertiary	Eocene	Domengine				M
B9052		Tertiary	Eocene	Domengine				M
B9053		Tertiary	Eocene	Domengine				M
B9054		Tertiary	Eocene	Domengine				M
B9055		Tertiary	Eocene	Domengine				M
B9056		Tertiary	Eocene	Domengine				M
B9057		Tertiary	Eocene	Domengine				M
B9058		Tertiary	Eocene	Domengine				M
B9059		Tertiary	Eocene	Domengine				M
B9060		Tertiary	Eocene	Domengine				M
B9061		Tertiary	Eocene	Domengine				M
B9062		Tertiary	Eocene	Domengine				M

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
B9063		Tertiary	Eocene	Domengine				M
B9064		Tertiary	Eocene	Domengine				M
B9065		Tertiary	Eocene	Domengine				M
B9066		Tertiary	Eocene	Lodo				M
B9067		Tertiary	Eocene	Lodo				M
B9068		Tertiary	Eocene	Lodo				M
B9069		Tertiary	Eocene	Lodo				M
B9070		Tertiary	Eocene	Domengine				M
B9071		Tertiary	Eocene	Domengine				M
B9072		Tertiary	Eocene	Domengine				M
B9073		Tertiary	Eocene	Domengine				M
B9074		Tertiary	Eocene	Domengine				M
B9075		Tertiary	Eocene	Domengine				M
B9076		Tertiary	Eocene	Domengine				M
B9077		Tertiary	Eocene	Domengine				M
B9078		Tertiary	Eocene	Domengine				M
B9079		Tertiary	Eocene	Domengine				M
B9080		Tertiary	Eocene	Domengine				M
B9081		Tertiary	Eocene	Domengine				M
B9082		Tertiary	Eocene	Domengine				M
B9083		Tertiary	Eocene	Domengine				M
B9084		Tertiary	Eocene	Domengine				M
B9085		Tertiary	Eocene	Domengine				M
B9086		Tertiary	Eocene	Lodo				M
B9087		Tertiary	Eocene	Lodo				M
B9088		Tertiary	Eocene	Lodo				M
B9089		Tertiary	Eocene	Lodo				M
B9090		Tertiary	Eocene	Lodo				M
B9091		Tertiary	Eocene	Lodo				M
B9092		Tertiary	Eocene	Lodo				M
B9093		Tertiary	Eocene	Lodo				M
B9094		Tertiary	Eocene	Lodo				M
B9095		Tertiary	Eocene	Lodo				M
B9096		Tertiary	Eocene	Lodo				M
B9097		Tertiary	Eocene	Lodo				M
B9098		Tertiary	Eocene	Domengine-Lodo				M
B9099		Tertiary	Eocene	Domengine-Lodo				M
B9100		Tertiary	Eocene	Domengine-Lodo				M

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
B9101		Tertiary	Eocene	Domengine-Lodo				M
B9102		Tertiary	Eocene	Domengine				M
B9103		Tertiary	Eocene	Domengine-Lodo				M
B9104		Tertiary	Eocene	Domengine				M
B9105		Tertiary	Eocene	Domengine-Lodo				M
B9106		Tertiary	Eocene	Domengine-Lodo				M
B9107		Tertiary	Eocene	Lodo				M
B9108		Tertiary	Eocene	Lodo				M
B9109		Tertiary	Eocene	Lodo				M
B9110		Tertiary	Eocene	Lodo				M
B9111		Tertiary	Eocene	Lodo				M
B9112		Tertiary	Eocene	Lodo				M
B9113		Tertiary	Eocene	Lodo				M
B9114		Tertiary	Eocene	Lodo				M
B9115		Tertiary	Eocene	Lodo				M
B9116		Tertiary	Eocene	Lodo				M
B9117		Tertiary	Eocene	Kreyenhagen				M
B9118		Tertiary	Eocene	Kreyenhagen				M
B9119		Tertiary	Eocene	Kreyenhagen				M
B9120		Tertiary	Eocene	Kreyenhagen				M
B9121		Tertiary	Eocene	Kreyenhagen				M
B9122		Tertiary	Eocene	Kreyenhagen				M
B9123		Tertiary	Eocene	Kreyenhagen				M
B9124		Tertiary	Eocene	Kreyenhagen				M
B9125		Tertiary	Eocene	Kreyenhagen				M
B9126		Tertiary	Eocene	Domengine				M
B9127		Tertiary	Eocene	Domengine				M
B9128		Tertiary	Eocene	Domengine				M
B9129		Tertiary	Eocene	Domengine				M
B9130		Tertiary	Eocene	Lodo				M
B9131		Tertiary	Eocene	Lodo				M
B9132		Tertiary	Eocene	Lodo				M
B9133		Tertiary	Eocene	Lodo				M
B9134		Tertiary	Eocene	Lodo				M
B9135		Tertiary	Eocene	Domengine				M
B9136		Tertiary	Eocene	Domengine				M
B9137		Tertiary	Eocene	Domengine				M
B9138		Tertiary	Eocene	Domengine				M

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
B9139		Tertiary	Eocene	Domengine				M
B9140		Tertiary	Eocene	Domengine				M
B9141		Tertiary	Eocene	Domengine				M
B9142		Tertiary	Eocene	Domengine				M
B9143		Tertiary	Eocene	Domengine				M
B9144		Tertiary	Eocene	Domengine				M
B9145		Tertiary	Eocene	Domengine				M
B9797	Kettleman Hills	Tertiary	Pliocene	Etchegoin				I
B9957	Silver Creek	Tertiary	Eocene	Martinez (Upper)?				I
B9958		Tertiary	Eocene?	Martinez (Upper)?				I
CL16	Fresno Co.							P
D16	Canoas Creek	Tertiary	Miocene					I
D21								I
D29		Tertiary	Pliocene	Etchegoin				I
D37	Canoas Creek	Tertiary	Miocene					I
D94	Jacalitos Creek	Tertiary	Pliocene	Etchegoin				I
D95		Tertiary	Pliocene	Etchegoin				I
D114	Coalinga Nose	Tertiary	Miocene	Temblor				I
D115	Coalinga Nose	Tertiary	Miocene	Temblor				I
D116		Tertiary	Miocene	Temblor				I
D117		Tertiary	Miocene	Santa Margarita				I
D346		Tertiary	Miocene	Santa Margarita				I
D347		Tertiary	Miocene	Santa Margarita				I
D348		Tertiary	Miocene	Santa Margarita				I
D349		Tertiary	Miocene	Santa Margarita				I
D350		Tertiary	Miocene	Santa Margarita				I
D351		Tertiary	Miocene	Santa Margarita				I
D370	Coalinga Nose	Tertiary	Miocene	Santa Margarita				I
D371	Coalinga Nose	Tertiary	Miocene	Santa Margarita				I
D433	Right Angle Canyon	Cretaceous	Late Cretaceous	Moreno				I
D434	Marca Canyon	Cretaceous	Late Cretaceous	Moreno				I
D700		Cretaceous	Late Cretaceous	Moreno				I
D701		Tertiary	Miocene	Santa Margarita				I
D702		Tertiary	Miocene	Santa Margarita				I
D703		Tertiary	Miocene	Santa Margarita				I
D704	Coalmine Canyon Road	Tertiary	Eocene	Avenal				I
D714		Tertiary	Miocene	Santa Margarita				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
D1070		Tertiary	Miocene	Temblor				I
D1071		Tertiary	Miocene	Temblor				I
D1072		Tertiary	Miocene	Temblor				I
D1073		Tertiary	Miocene	Temblor				I
D1074		Tertiary	Miocene	Temblor				I
D1075		Tertiary	Miocene	Temblor				I
D1076		Tertiary	Miocene	Temblor				I
D1077		Tertiary	Miocene	Temblor				I
D1078		Tertiary	Miocene	Temblor				I
D1079		Tertiary	Miocene	Temblor				I
D1080		Tertiary	Miocene	Temblor				I
D1081		Tertiary	Miocene	Temblor				I
D1082		Tertiary	Miocene	Temblor				I
D1083		Tertiary	Miocene	Temblor				I
D1084	Domengine Creek	Tertiary	Miocene	Temblor				I
D1085		Tertiary	Miocene	Temblor				I
D1088	120 ft. N of Standard Oil Well 184	Tertiary	Miocene	Santa Margarita				I
D1089		Tertiary	Miocene	Santa Margarita				I
D1090		Tertiary	Miocene	Santa Margarita				I
D1091		Tertiary	Miocene	Santa Margarita				I
D1092		Tertiary	Miocene	Santa Margarita				I
D1093		Tertiary	Miocene	Santa Margarita				I
D1094		Tertiary	Miocene	Santa Margarita				I
D1095		Tertiary	Miocene	Santa Margarita				I
D1096		Tertiary	Miocene	Santa Margarita				I
D1097		Tertiary	Miocene	Santa Margarita				I
D1098		Tertiary	Miocene	Santa Margarita				I
D1099		Tertiary	Miocene	Santa Margarita				I
D1100		Tertiary	Miocene	Santa Margarita				I
D1101	Between Shell Oil Wells 254-15 and 155-15	Tertiary	Miocene	Santa Margarita				I
D1102		Tertiary	Miocene	Santa Margarita				I
D1103		Tertiary	Miocene	Santa Margarita				I
D1104	N of Shell Oil Well 155-15	Tertiary	Pliocene	Etchegoin				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
D1156	Standard Oil Well 184	Tertiary	Pliocene	Etchegoin				I
D1157	Shell Oil Well 142-29	Tertiary	Pliocene	Etchegoin				I
D1158		Tertiary	Pliocene	Etchegoin				I
D1159	Shell Oil Well 132-29	Tertiary	Pliocene	Etchegoin				I
D1160	Shell Oil Well 132-29	Tertiary	Pliocene	Etchegoin				I
D1161		Tertiary	Pliocene	Etchegoin				I
D1162	Shell Oil Well P-2-29	Tertiary	Pliocene	Etchegoin				I
D1163		Tertiary	Pliocene	Etchegoin				I
D1164	Shell Oil Well 103-29	Tertiary	Pliocene	Etchegoin				I
D1165	hell Oil Wells 53E-29 and 123-29	Tertiary	Pliocene	Etchegoin				I
D1166		Tertiary	Pliocene	Etchegoin				I
D1167	Shell Oil Well 533-29	Tertiary	Pliocene	Etchegoin				I
D1168		Tertiary	Pliocene	Etchegoin				I
D1169	Shell Oil Well 533-29	Tertiary	Pliocene	Etchegoin				I
D1170		Tertiary	Pliocene	Etchegoin				I
D1171		Tertiary	Pliocene	Etchegoin				I
D1172		Tertiary	Pliocene	Etchegoin				I
D1173		Tertiary	Pliocene	Etchegoin				I
D1174		Tertiary	Pliocene	Etchegoin				I
D1175		Tertiary	Pliocene	Etchegoin				I
D1176	Shell Oil Well 166-26	Tertiary	Pliocene	Etchegoin				I
D1177		Tertiary	Pliocene	Etchegoin				I
D1178		Tertiary	Pliocene	Etchegoin				I
D1179		Tertiary	Pliocene	Temblor				I
D1180		Tertiary	Pliocene	Etchegoin				I
D1181		Tertiary	Pliocene	Etchegoin				I
D1182		Tertiary	Pliocene	Etchegoin				I
D1183		Tertiary	Pliocene	Etchegoin				I
D1203		Quaternary, Tertiary	Pleistocene, Pliocene	San Joaquin				I
D1679	Devil's Den	Tertiary	Eocene	Lodo				M
D1680	Devil's Den	Tertiary	Eocene	Lodo				M
D1681	Devil's Den	Tertiary	Eocene	Lodo				M
D1682	Devil's Den	Tertiary	Eocene	Lodo				M
D1683	Devil's Den	Tertiary	Eocene	Lodo				M
D1684	Devil's Den	Tertiary	Eocene	Lodo				M

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
D1685	Devil's Den	Tertiary	Eocene	Lodo				M
D1686	Devil's Den	Tertiary	Eocene	Lodo				M
D1687	Devil's Den	Tertiary	Eocene	Lodo				M
D1688	Devil's Den	Tertiary	Eocene	Lodo				M
D1689	Devil's Den	Tertiary	Eocene	Lodo				M
D1690	Devil's Den	Tertiary	Eocene	Lodo				M
D1691	Devil's Den	Tertiary	Eocene	Lodo				M
D1692	Devil's Den	Tertiary	Eocene	Kreyenhagen	Canaos			M
D1693	Devil's Den	Tertiary	Eocene	Kreyenhagen	Canaos			M
D1694	Devil's Den	Tertiary	Eocene	Kreyenhagen	Canaos			M
D1695	Coalmine Creek, south side	Tertiary	Eocene	Kreyenhagen				M
D1696		Tertiary	Eocene	Kreyenhagen				M
D1821		Tertiary	Paleocene	Lodo				M
D1822		Tertiary	Paleocene	Lodo				M
D1823		Tertiary	Paleocene	Lodo				M
D1824		Tertiary	Paleocene	Lodo				M
D1882		Tertiary	Pliocene	Etchegoin				I
D1883		Tertiary	Pliocene	Etchegoin				I
D1908		Cretaceous	Late Cretaceous	Moreno				I
D1910	Mt. Diablo Range	Tertiary	Miocene	Vaqueros				I
D1986		Tertiary	Paleocene	Lodo			Forams	M
D2345		Tertiary	Miocene	Santa Margarita				I
D2493		Quaternary, Tertiary	Pleistocene, Pliocene	San Joaquin				I
D2495		Tertiary	Pliocene	Jacalitos				I
D3013	Coalmine Canyon North Branch	Tertiary	Eocene					I
D3110		Tertiary	Miocene	Santa Margarita				I
D3111		Tertiary	Miocene	Santa Margarita				I
D3139		Tertiary	Miocene	Temblor				I
D3152		Tertiary	Pliocene	Etchegoin				I
D3153	Boychester Canyon	Tertiary	Pliocene	Etchegoin				I
D3158	Tranquility	Tertiary	Pliocene	San Joaquin				I
D3159	Anticline Ridge	Tertiary	Pliocene	Etchegoin				I
D3160	Monocline Ridge	Tertiary	Pliocene	Etchegoin				I
D3167	Coalinga Area	Tertiary	Pliocene	Etchegoin(?)				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
D3174	Kettleman Hills	Quaternary, Tertiary	Pleistocene, Pliocene	San Joaquin				I
D3175	Kettleman Hills	Tertiary	Paleocene	Etchegoin				I
D3179	Shark Tooth Hill	Tertiary	Miocene	Santa Margarita				I
D3180	N. Coalinga Dist. Oil Fields	Tertiary	Miocene	Santa Margarita				I
D3181	Domengine Ranch	Tertiary	Miocene	Santa Margarita				I
D3271		Tertiary	Oligocene	Tumey				I
D3272		Tertiary	Oligocene	Tumey				I
D3273		Tertiary	Oligocene	Tumey				I
D3274		Tertiary	Oligocene	Tumey				I
D3275		Tertiary	Oligocene	Tumey				I
D3276		Tertiary	Oligocene	Tumey				I
D3277		Tertiary	Oligocene	Tumey				I
D3278		Tertiary	Miocene	Tumey				I
D3279		Tertiary	Miocene	Temblor				I
D3280		Tertiary	Miocene	Temblor				I
D3732		Tertiary	Miocene	Temblor				I
D3876		Tertiary	Miocene	Santa Margarita				I
D3878		Tertiary	Miocene	Santa Margarita?				I
D4617		Tertiary	Miocene	Temblor				I
D5101	Monocline Ridge area	Tertiary	Oligocene	Tumey				M
D5102		Tertiary	Oligocene	Tumey				I
D5103		Tertiary	Oligocene	Tumey				I
D5104		Tertiary	Oligocene	Tumey				I
D5105		Tertiary	Oligocene	Tumey				I
D5107		Tertiary	Oligocene	Tumey				I
D5108		Tertiary	Miocene	Temblor				I
D5109		Tertiary	Miocene	Temblor				I
D5110		Tertiary	Miocene	Temblor				I
D5111		Tertiary	Miocene	Temblor				I
D5112		Tertiary	Miocene	Santa Margarita				I
D5113		Tertiary	Miocene	Santa Margarita				I
D5114		Tertiary	Pliocene	Etchegoin				I
D5115		Tertiary	Pliocene	Etchegoin				I
D5136		Tertiary	Oligocene	Tumey				I
D5387	Akers Ranch	Tertiary	Miocene	Temblor				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
D5392	Tranquility	Tertiary	Miocene	Vaqueros				I
D5394	Tumey Gulch	Tertiary	Miocene	Vaqueros				I
D5402	Monocline Ridge	Tertiary	Miocene	Temblor				I
D5409	Newport	Tertiary	Eocene	Kreyenhagen				I
D5450	Boychester Canyon	Tertiary	Pliocene	Etchegoin				I
D6356	Gres Canyon	Cambrian, Precambrian?		Laguna Seca				I
D6357	Gres Canyon	Cambrian, Precambrian?		Temblor				I
D6358	State Highway to Mendota	Tertiary	Paleocene	Lodo				I
D6359		Tertiary	Miocene	Temblor				I
D6360		Tertiary	Oligocene	Tumey	Oyster Bed			I
D6361		Tertiary	Oligocene	Tumey	Oyster Bed			I
D6362		Tertiary	Miocene	Santa Margarita				I
D6363		Tertiary	Miocene	Santa Margarita				I
D6371	Peak 1325	Tertiary	Miocene	Temblor				I
D6372		Tertiary	Miocene	Temblor				I
D6373		Tertiary	Miocene	Kreyenhagen				I
D6374		Tertiary	Miocene	Santa Margarita				I
D6375		Tertiary	Miocene	Santa Margarita				I
D6451	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6452	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6453	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6454	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6455	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6456	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6457	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6458	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6459	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6460	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6461	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6462	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6463	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6464	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6465	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
D6466	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6467	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6468	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6469	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6470	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6471	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6472	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6473	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6474	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6475	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6476	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6477	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6478	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6479	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6480	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6481	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6482	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6483	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6484	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6485	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6486	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6487	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6488	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6489	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6490	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6491	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6492	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6494	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6498	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6512	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6516	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6517	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6518	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6519	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6520	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6521	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6522	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			I
D6523	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
D6524	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6525	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6526	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6527	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6528	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6529	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6530	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6531	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6532	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6533	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6534	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6535	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6536	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			I
D6537	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6538	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey			IM
D6539	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6540	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6541	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6542	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6543	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6544	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6545	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6546	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6547	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6548	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6549	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6550	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6551	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6552	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6553	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6554	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D6555	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			IM
D6556	Monocline Ridge	Tertiary	Oligocene	Kreyenhagen	Tumey Shale			M
D7242		Tertiary	Oligocene	Kreyenhagen (Tumey shale)				I
D7243		Tertiary	Oligocene	Kreyenhagen (Tumey shale)				I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
D7244		Tertiary	Oligocene	Kreyenhagen (Tumey shale)				I
D7245		Tertiary	Oligocene	Kreyenhagen (Tumey shale)				I
D8273		Tertiary	Eocene, Oligocene	Tumey				I
D8791	Coalinga	Tertiary	Miocene	Santa Margarita				I
D9878	Coalinga District	Tertiary	Pliocene	Etchegoin				I
D9887		Tertiary	Oligocene	Kreyenhagen Shale				I
IP426	Coalinga District	Tertiary	Pliocene	Etchegoin				I
IP12050		Tertiary	Pliocene	Etchegoin				I
IP12062		Tertiary	Pliocene	Etchegoin				I
IP12072		Tertiary	Pliocene	Etchegoin				I
IP12139		Tertiary	Eocene					I
IP12140		Cretaceous	Late Cretaceous	Panoche				I
IP12587		Cretaceous		Panoche				I
IP12602		Tertiary	Eocene					I
IP12621		Tertiary	Miocene	Temblor				I
IP12742		Cretaceous	Late Cretaceous					I
IP12922		Tertiary	Eocene	Domengine				I
MF3546	Capita Stratotype	Tertiary	Eocene	Domengine?			foraminifera	M
MF3547	Cheney Ranch Canyon	Tertiary	Eocene	Domengine			foraminifera	M
MF3548	Cheney Ranch Canyon	Tertiary	Eocene	Domengine			foraminifera	M
MF3549	Cheney Ranch Canyon	Tertiary	Eocene	Domengine			foraminifera	M
MF3550	Cheney Ranch Canyon	Tertiary	Eocene	Domengine			foraminifera	M
MF3551	Lodo Gulch	Tertiary	Paleocene	Lodo				M
MF3552	Lodo Gulch	Tertiary	Paleocene	Lodo				M
MF3553	Lodo Gulch	Tertiary	Paleocene	Lodo				M
MF3554	Lodo Gulch	Tertiary	Paleocene	Lodo				M
MF3555	Lodo Gulch	Tertiary	Paleocene	Lodo				M
MF3556	Lodo stratotype	Tertiary	Paleocene	Lodo			foraminifera	M
MF3557	Lodo stratotype	Tertiary	Paleocene	Lodo			foraminifera	M
MF3558	Los Gatos Creek	Cretaceous	Late Cretaceous	Panoche	Joaquin Ridge		foraminifera	M

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
MF3559	Los Gatos Creek	Cretaceous	Late Cretaceous	Panoche	Joaquin Ridge		foraminifera	M
MF3560	Oil Canyon	Tertiary	Paleocene	Lodo			foraminifera	M
MF3561	Oil Canyon	Tertiary	Paleocene	Lodo			foraminifera	M
MF3562	Oil Canyon	Tertiary	Paleocene	Lodo			foraminifera	M
MF3563	Oil Canyon	Tertiary	Paleocene	Lodo			foraminifera	M
MF3564	Road to Escarpado Canyon	Tertiary	Eocene	Kreyenhagen Shale				M
P365	Temblor:Oil Canyon	Tertiary	Miocene	Temblor		Miocene		P
P566	Salt Canyon	Tertiary	Late Miocene			Miocene		P
P3312	Coalinga II	Tertiary	Pliocene	Etchegoin		Pliocene		P
P3624	Oil City			Etchegoin				P
P3729	Kettleman Hills	Tertiary	Pliocene	Etchegoin		Pliocene		P
P4025	Broken Hill							P
P4026	Standard Oil Camp			Etchegoin				P
P4027	Zapota Chino Canyon	Tertiary	Miocene	Jacalitos	Upper	Miocene		P
P4119	Escarpado	Tertiary	Late Paleocene			Paleocene		P
PA10	Jacalitos Creek	Tertiary	Pliocene	Jacalitos		Pliocene		P
PA11	Panoche Pass	Cretaceous		Moreno		Cretaceous		P
PA95	Joaquin Ridge	Tertiary	Eocene	Kreyenhagen Shale		Eocene		P
PA257	Panoche Hills	Cretaceous	Late Cretaceous	Moreno		Cretaceous		P
PA305	Santa Margarita Wood	Tertiary	Miocene	Santa Margarita		Miocene		P
PA654	Escarpado Canyon Seed	Tertiary	Late Paleocene	Lodo	Basal Cerros Sandstone	Paleocene		P
PA657	Dosados Canyon I	Cretaceous	Late Cretaceous	Moreno	Terra Loma	Cretaceous		P
PA1070	Moreno Conifer	Cretaceous	Late Cretaceous	Moreno		Cretaceous		P
R1221		Quaternary	Recent					I
RV6849		Tertiary	Miocene			Barstovian		V
V1601	Mack Pumping Plant 15	Tertiary	Pliocene	San Joaquin		Blancan		V
V1602	Jacalitos Creek	Tertiary	Miocene	Jacalitos		Hemphillian		V
V3219	Parsons Peak	Tertiary	Eocene	Tejon		Bridgerian		V
V3301	Reef Bed 1	Tertiary	Miocene	Temblor		Barstovian		V
V3422	North Dome 2	Tertiary	Pliocene	San Joaquin		Blancan		V
V3735	Panoche Hills 5	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
V3736	Panoche Hills 6	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V3930	Oilfields Area	Tertiary	Miocene	Etchegoin		Hemphillian		V
V4021	Ciervo Creek	Tertiary	Miocene	Temblor		Barstovian		V
V4105	Tulare Base	Tertiary	Miocene	Etchegoin		Hemphillian		V
V4106	Monocline Ridge	Tertiary	Miocene	Temblor		Barstovian		V
V4401	Tranquillity	Quaternary	Pleistocene			Rancholabrean		V
V4720	C.I.T. 129	Tertiary	Miocene	Temblor		Barstovian		V
V4721	Domengine Creek 2	Tertiary	Miocene	Etchegoin		Hemphillian		V
V4722	Domengine Creek 3	Tertiary	Miocene	Etchegoin		Hemphillian		V
V4723	Domengine Creek 4	Tertiary	Miocene	Etchegoin		Hemphillian		V
V4724	Domengine Creek 5	Tertiary	Miocene	Etchegoin		Hemphillian		V
V4725	Domengine Creek 6	Tertiary	Miocene	Etchegoin		Hemphillian		V
V5013	Dark Hole	Tertiary	Miocene	Temblor		Barstovian		V
V5214	Busane Peak	Tertiary	Miocene	Temblor		Barstovian		V
V5335	Levis	Tertiary	Miocene	Etchegoin		Hemphillian		V
V5338	Popenoe	Tertiary	Miocene	Jacalitos		Hemphillian		V
V5339	Domengine Creek 7	Tertiary	Miocene	Etchegoin		Hemphillian		V
V5605	Mercy Creek	Cretaceous	Late Cretaceous	Moreno	Dos Palos Sh	Maastrichtian		V
V5606	Silver Creek 1	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V5607	Silver Creek 2	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V5608	Escarpado Canyon 1	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V5609	Escarpado Canyon 2	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V5610	Escarpado Canyon 3	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V5685	Priest Valley 1	Tertiary	Miocene			Hemphillian		V
V5696	Capito Canyon	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V5779	Panoche Hills 1	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V5780	Panoche Hills 2	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V5781	Panoche Hills 3	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V5872	Panoche Hills 4	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V5878	Capita Canyon 2	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V6214	Right Angle Canyon	Cretaceous	Late Cretaceous	Moreno	Marca Shale	Maastrichtian		V
V6303	Coalinga 2	Tertiary	Miocene	Temblor		Barstovian		V
V6307	Devil's Gate	Tertiary	Miocene			Hemphillian		V
V6598	Silver Creek 3	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V6619	Joaquin Rocks 1	Tertiary	Miocene	Temblor		Barstovian		V

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
V6654	Arroyo Vadoso	Tertiary	Pliocene	San Joaquin		Blancan		V
V6673	Well 155	Tertiary	Miocene	Etchegoin		Hemphillian		V
V6674	Coalinga Nose	Tertiary	Miocene	Santa Margarita		Clarendonian		V
V6676	Well 254	Tertiary	Miocene	Santa Margarita		Clarendonian		V
V6677	Tween Wells	Tertiary	Miocene	Santa Margarita		Clarendonian		V
V6786	Pliomastodon	Tertiary	Pliocene	San Joaquin		Blancan		V
V6866	Monocline Ridge N 1	Tertiary	Miocene	Temblor		Barstovian		V
V6867	Monocline Ridge N 2	Tertiary	Miocene	Temblor		Barstovian		V
V6905	Coalinga 3	Tertiary	Miocene	Santa Margarita		Clarendonian		V
V7060	Panoche-Dos Palos Road	Tertiary	Paleocene	Lodo		Torrejonian		V
V65100	Riverdale	Quaternary	Pleistocene			Rancholabrean		V
V65111	Domengine Creek 8	Tertiary	Eocene	Domengine		Bridgerian		V
V65286	San Joaquin Fm Sec 33	Tertiary	Pliocene	San Joaquin		Blancan		V
V65421	Oil Canyon 2	Tertiary	Eocene	Kreyenhagen Sh		Uintan		V
V65426	Monocline Ridge 2	Tertiary	Eocene	Tumey		Chadronian		V
V65427	Coalmine Canyon	Tertiary	Eocene	Avenal Ss		Bridgerian		V
V67105	Mack Pumping Plant	Tertiary	Miocene	Etchegoin		Hemphillian		V
V67191	Oil Canyon 1	Tertiary	Pliocene	San Joaquin		Blancan		V
V69164	Capita Canyon 3	Cretaceous	Late Cretaceous	Moreno	Dos Palos Sh	Maastrichtian		V
V69165	Marca Canyon	Cretaceous	Late Cretaceous	Moreno	Marca Shale	Maastrichtian		V
V71142	Cas 876	Tertiary	Miocene	Temblor		Barstovian		V
V71143	Domengine Ranch 1	Tertiary	Miocene	Temblor		Barstovian		V
V71144	Kern Trading And Oil Co Well 3	Tertiary	Miocene	Temblor		Barstovian		V
V71146	Oil Canyon 3	Tertiary	Miocene	Temblor		Barstovian		V
V71148	Reef Ridge 3	Tertiary	Miocene	Temblor		Barstovian		V
V71149	Reef Ridge 4	Tertiary	Miocene	Temblor		Barstovian		V
V72035	Monocline Ridge N 3	Tertiary	Miocene	Temblor		Barstovian		V
V72036	Monocline Ridge N 4	Tertiary	Miocene	Temblor		Barstovian		V
V72037	Monocline Ridge N 5	Tertiary	Miocene	Temblor		Barstovian		V
V72038	Reef Bed 2	Tertiary	Miocene	Temblor		Barstovian		V
V72039	Monocline Ridge N 6	Tertiary	Miocene	Temblor		Barstovian		V
V74010	Landing Strip Road 1	Tertiary	Eocene	Kreyenhagen Sh		Uintan		V
V75026	Monocline Ridge N 7	Tertiary	Pliocene			Blancan		V
V75075	King City E	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V77104	Cit 337	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
V79052	Staebler's Turtle 2	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V79053	Dosados Canyon 1	Cretaceous	Late Cretaceous	Moreno	Marca Shale	Maastrichtian		V
V79070	Shell Oil Well 254-15 Upper	Tertiary	Miocene	Santa Margarita		Clarendonian		V
V79075	Anticline Ridge 1	Tertiary	Miocene	Santa Margarita		Clarendonian		V
V79081	Shell Oil Well 254-15 Lower	Tertiary	Miocene	Santa Margarita		Clarendonian		V
V79088	Toxochelyid	Cretaceous	Late Cretaceous	Moreno	Dosados	Maastrichtian		MV
V81121	Laguna Seca Ranch	Quaternary	Pleistocene	Riverbank		Rancholabrean		V
V82046	Panoche Hills 7	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82056	Panoche Hills 8	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82057	Panoche Hills 9	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82058	Panoche Hills 10	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82075	Silver Creek 4	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82076	Silver Creek 5	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82077	Silver Creek 6	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82078	Silver Creek 7	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82079	Escarpado Canyon 4	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82080	Panoche Hills 11	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82081	Capita Canyon 4	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82282	Dosados Canyon 2	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82283	Silver Creek 8	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V82284	Cantua Creek S 1	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
V87002	Right Angle Canyon 1	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V87003	Right Angle Canyon 2	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V87004	Right Angle Canyon 3	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V87005	Right Angle Canyon 4	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V87006	Right Angle Canyon 5	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V87007	Silver Creek 9	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V87008	Silver Creek 10	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V87009	Silver Creek 11	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V87010	Silver Creek 12	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V87011	Panoche Hills 12	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V87012	Moreno Gulch 1	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V87013	Panoche Hills 13	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V87014	Panoche Hills 14	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V90059	No Name Canyon	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V90060	Escarpado Canyon 5	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V90061	Dosados Canyon North fork	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V90062	Silver Creek 21	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V90063	Silver Creek 22	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V90064	Silver Creek 23	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
V90065	Silver Creek 24	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V90066	Silver Creek 13	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V90067	Silver Creek 14	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V90068	Silver Creek 15	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V90069	Tumey Hills 1	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91101	Right Angle Canyon 6	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91102	Right Angle Canyon 7	Cretaceous	Late Cretaceous	Moreno	Marca Shale	Maastrichtian		V
V91103	Capita Canyon South	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91104	Right Angle Canyon 8	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91105	Silver Creek 16	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91106	Silver Creek 17	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91107	Silver Creek 18	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91108	Silver Creek 19	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91109	Silver Creek 20	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91110	Tumey Hills 2	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91111	Tumey Hills 3	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91112	Tumey Hills 4	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91134	Escarpado Canyon Hadrosaur	Cretaceous	Late Cretaceous	Moreno	Dos Palos Sh	Maastrichtian		V
V91169	Small Draw Mosasaur	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
V91170	Right Angle Canyon 9	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V91249	Monocline Ridge-Hawes	Tertiary	Miocene	Temblor		Barstovian		V
V92065	Panoche Kreyenhagen 1	Tertiary	Eocene	Kreyenhagen Sh		Uintan		V
V92066	Panoche Kreyenhagen 2	Tertiary	Eocene	Kreyenhagen Sh		Uintan		V
V92067	Silver Creek E 1	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V92068	Silver Creek E 2	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V92069	Silver Creek E 3	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V92070	Silver Creek S fish	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V92071	Silver Creek S Shark	Cretaceous	Late Cretaceous	Moreno	Marca Shale	Maastrichtian		V
V92082	Capita Canyon West	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V92083	Section 17 South	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V92084	Section 17 North	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93001	Monocline Ridge Sec. 22	Tertiary	Miocene	Temblor		Barstovian		V
V93003	Section 17 South A	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93004	Section 17 South B	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93005	Section 17 South C	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93006	Section 31 West	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93007	Section 18 East	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93008	Silver Creek Section 29 General	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
V93009	Section 17 South D	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93010	Section 29 West A	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93011	Section 29 West B	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93012	Section 29 West C	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93013	Section 5 West A	Cretaceous	Late Cretaceous	Moreno	Marca Shale	Maastrichtian		V
V93014	Section 30 East A	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93015	Cantua Creek Section 33	Tertiary	Miocene	Kreyenhagen Sh		Barstovian		V
V93016	Right Angle Canyon Section 7	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93017	Moreno Formation Panoche Hills General	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V93018	Laguna Seca Ranch Section 36	Tertiary	Pliocene	Etchegoin		Blancan		V
V93019	Lillis Ranch Section 22	Tertiary	Pliocene	Etchegoin		Blancan		V
V93020	Tumey Hills Section 5	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93021	Tumey Hills Section 30	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93022	Chounet Ranch Plesiosaur	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93036	Section 34 SE	Tertiary	Miocene	Santa Margarita		Clarendonian		V
V93069	Tumey Hills Sec. 16 SE	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93138	Big Lizzy	Cretaceous	Late Cretaceous	Moreno	Tierra Loma Shale	Maastrichtian		V
V93188	Moreno Formation General	Cretaceous	Late Cretaceous	Moreno		Maastrichtian		V
V99563	Path 15	Tertiary	Miocene	Temblor		Barstovian		V
Tulare County								
2461-		Quaternary	Recent					I

Location ID	Loction Name	Period	Epoch	Formation	Member	Storage Age	Flora/Fauna	UCMP Collection
2503-		Quaternary	Recent					I
A164		Triassic						I
B4700		Jurassic		Mariposa				I
B6730		Triassic						I
B6731		Triassic						I
B6732		Triassic						I
B6733		Triassic						I
B6734		Triassic						I
B6735		Triassic						I
B6736		Triassic						I
B6737		Triassic						I
P383	White River	Tertiary	Eocene			Eocene		P
P3641	Porterville							P
R1320	Tulare Valley	Quaternary	Recent					I
V3931	Exeter 1	Quaternary	Pleistocene			Rancholabrean		V
V4903	Friant-Kern Canal 1	Quaternary	Pleistocene			Rancholabrean		V
V5568	Tipton	Quaternary	Pleistocene			Rancholabrean		V
V5634	Kaweah S Fork	Quaternary	Pleistocene			Rancholabrean		V
V6540	Tulare Co General	Quaternary	Pleistocene			Rancholabrean		V
V6837	Exeter 2	Quaternary	Pleistocene			Rancholabrean		V
V65309	Strathmore	Quaternary	Pleistocene			Rancholabrean		V
V69173	Earlimont	Quaternary	Pleistocene			Rancholabrean		V
V69174	Gordon Gulch	Quaternary	Pleistocene			Rancholabrean		V
V78124	Denton's Farm	Quaternary	Pleistocene			Rancholabrean		V