Le Grande to Merced

NEPA ENVIRONMENTAL ASSESSMENT AND CEQA INITIAL STUDY (Volume 2 – Technical Appendices)

Federal Railroad Administration

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Date of Approval	Federal Railroad Administration

The following person may be contacted for additional information concerning this document:

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APPENDIX 1

AIR QUALITY

Giroux & Associates
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AIR QUALITY IMPACT ANALYSIS

BNSF LE GRAND DOUBLE TRACK PROJECT

MP 1039.93 TO MP 1056.36

SAN JOAQUIN VALLEY, CALIFORNIA

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Project No.: P09-009 A

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EXECUTIVE SUMMARY

The California Department of Transportation Division of Rail is seeking funding to improve rail capacity in the San Joaquin Corridor. This study focuses on the air quality impact of double-tracking 16.43 miles of BNSF track from near "M" Street in the City of Merced to Deadmans Creek within the community of Le Grand.

The virtual elimination of current idling of trains on siding tracks would improve freight delivery schedules, promote inter-city passenger travel though faster and more reliable service and decrease engine idling emissions. Each effect is considered long-term air quality positive. Long-term benefits will be partially off-set by short term construction activity air quality impacts.

The proposed project is located in the San Joaquin Valley Air Basin (SJVAB). The basin is a non-attainment for state and federal clean air standards for ozone and for particulate matter. Any air quality impact analysis must occur within the context of an existing unhealthful air quality environment.

This analysis is designed to meet both NEPA and CEQA environmental clearance requirements. Under CEQA, a determination of impact significance must be made. However, the CEQA analysis guidance developed by the San Joaquin Valley APCD states that for most construction projects, compliance with existing rules and implementation or recommended control measures will achieve a less-than-significant impact. NEPA guidelines discourage use of the word "significance". The evaluation must consider context and intensity. For this analysis, context is the non-attainment status of the air basin for ozone and particulate matter.

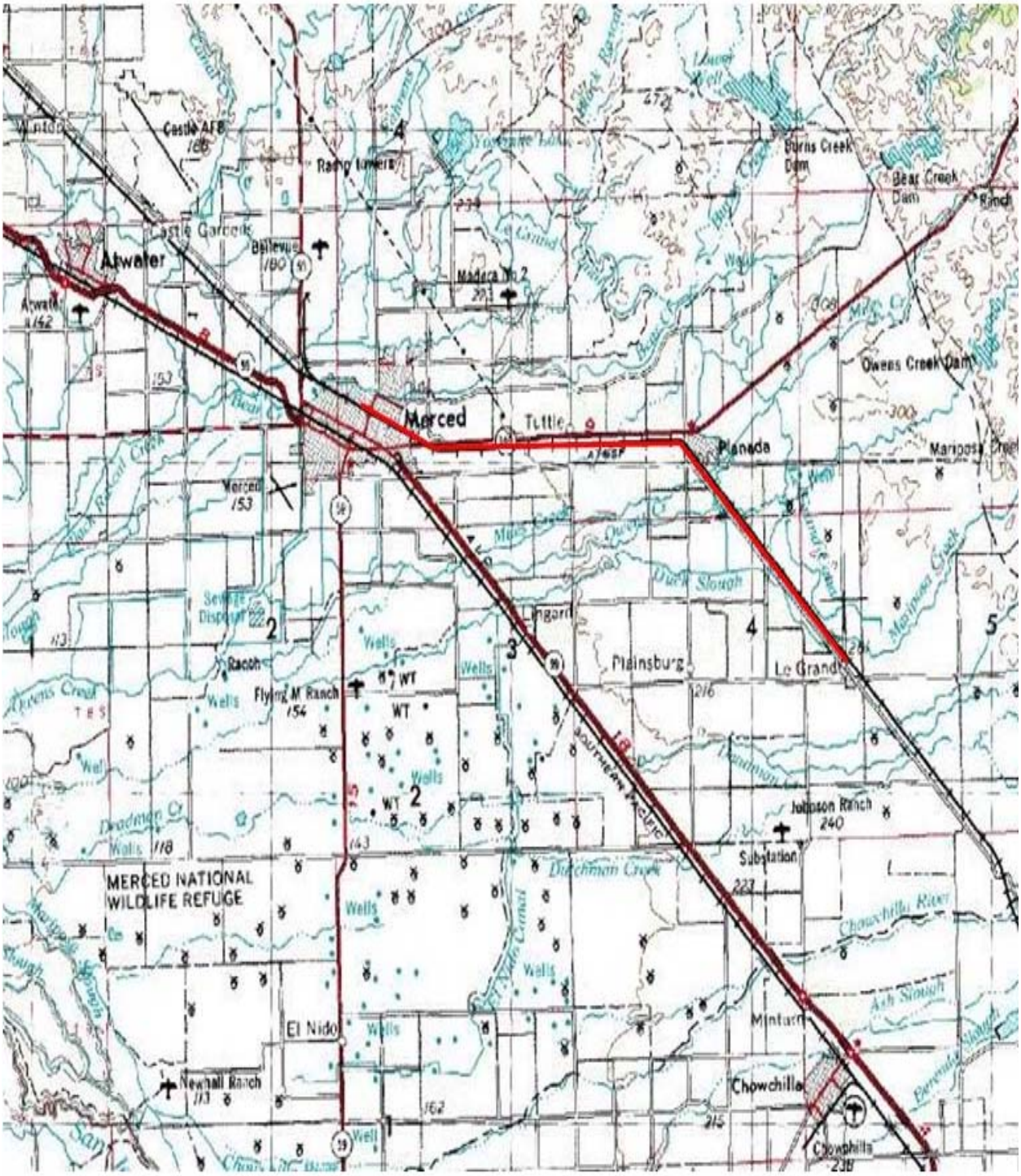
Impact intensity within this analysis is based upon the *de minimis* annual emissions thresholds established to demonstrate compliance with Section 176(c) of the federal Clean Air Act. These numerical thresholds (intensity) vary with the attainment status (context) of the air basin.

Construction activity air pollution emissions were calculated using the URBEMIS2007 computer model. Annual project construction emissions were shown to be less than the Section 176(c) consistency thresholds for all air pollutants. With the use of "clean" construction equipment, it was demonstrated that the mitigation requirements under SJVAPCD Rule 9510 can be attained. A final demonstration of such attainment must be provided once the construction contractor has been selected and his/her equipment fleet has been identified.

BACKGROUND

The State Department of Transportation Division of Rail is seeking federal funding for the proposed construction of portions of the San Joaquin Corridor Capacity Improvements. As a result, the Le Grand Tracking Project requires evaluation under the National Environmental Policy Act (NEPA). As part of its program to improve intercity passenger rail service, the State Department of Transportation, Division of Rail (Caltrans) is proposing to upgrade the capacity of the Burlington Northern Santa Fe Railway Company's (BNSF) existing San Joaquin Valley railroad corridor. This evaluation focuses on a 16.43 mile rail corridor segment extending from about 0.25 miles northwest of M Street within the City of Merced, southwest to about 0.04 miles northeast of Deadman's Creek within the community of Le Grand. The project alignment traverses the City of Merced and the communities of Kadota, Tuttle, Planada and Le Grand. The regional context of the San Joaquin Corridor is shown in Figure 1. The proposed vicinity detail is shown in Figure 2.

Figure 1 – Regional Context



Project Alignment

Figure 2a – Proposed Vicinity Detail (Merced – Northend)

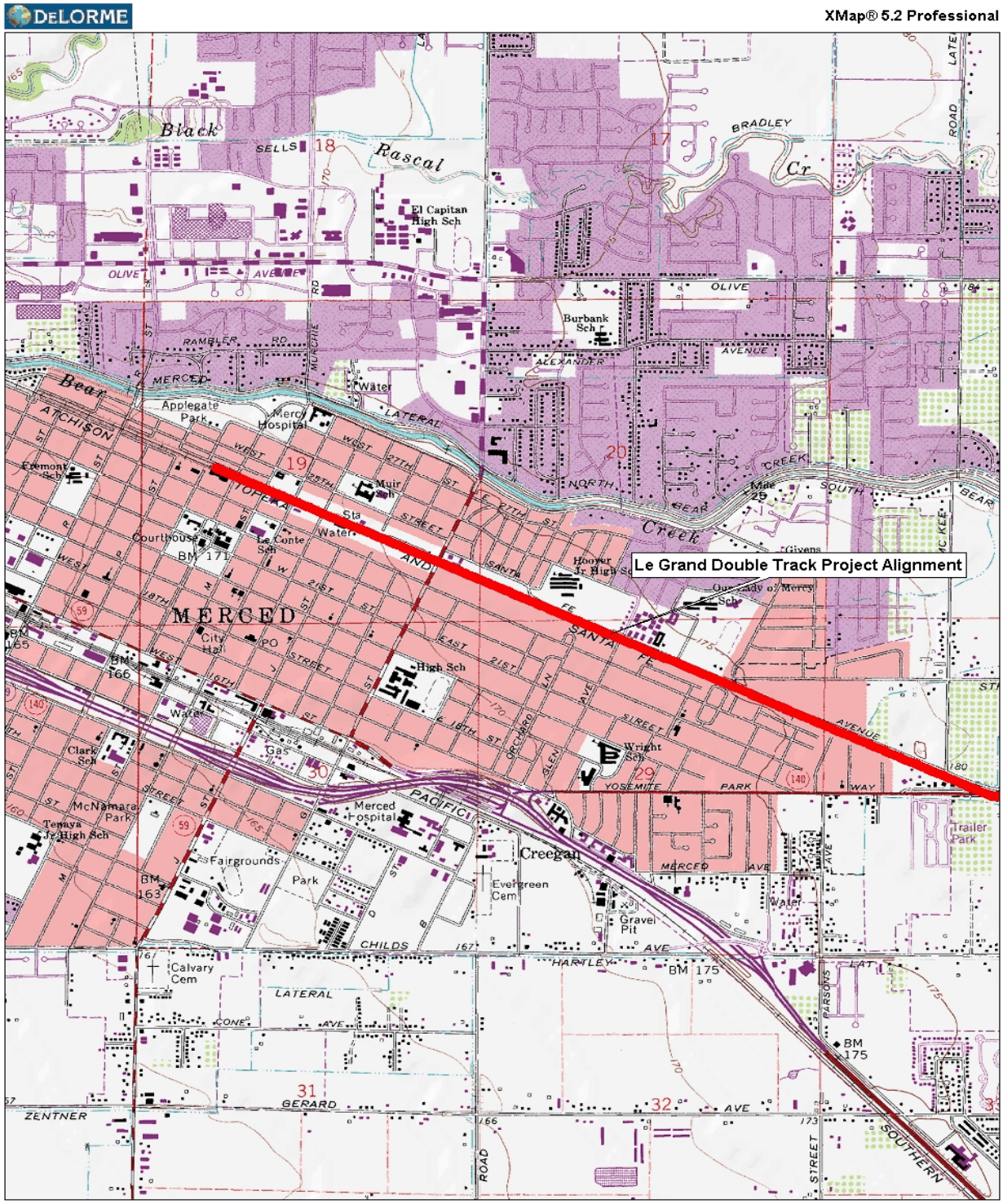


Figure 2b – Proposed Vicinity Detail (Kadota – Central West)

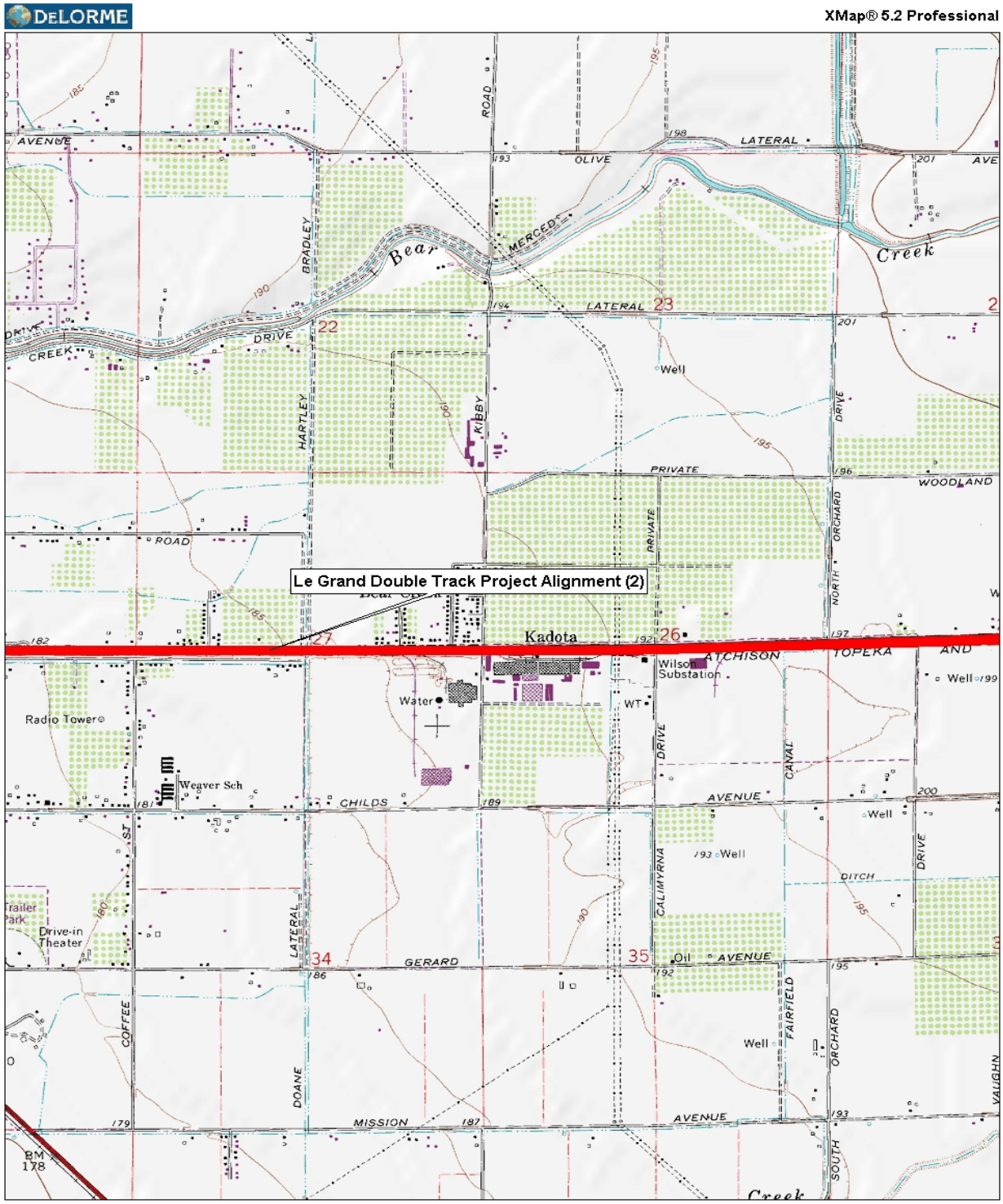


Figure 2c – Proposed Vicinity Detail (Tuttle – Central West)

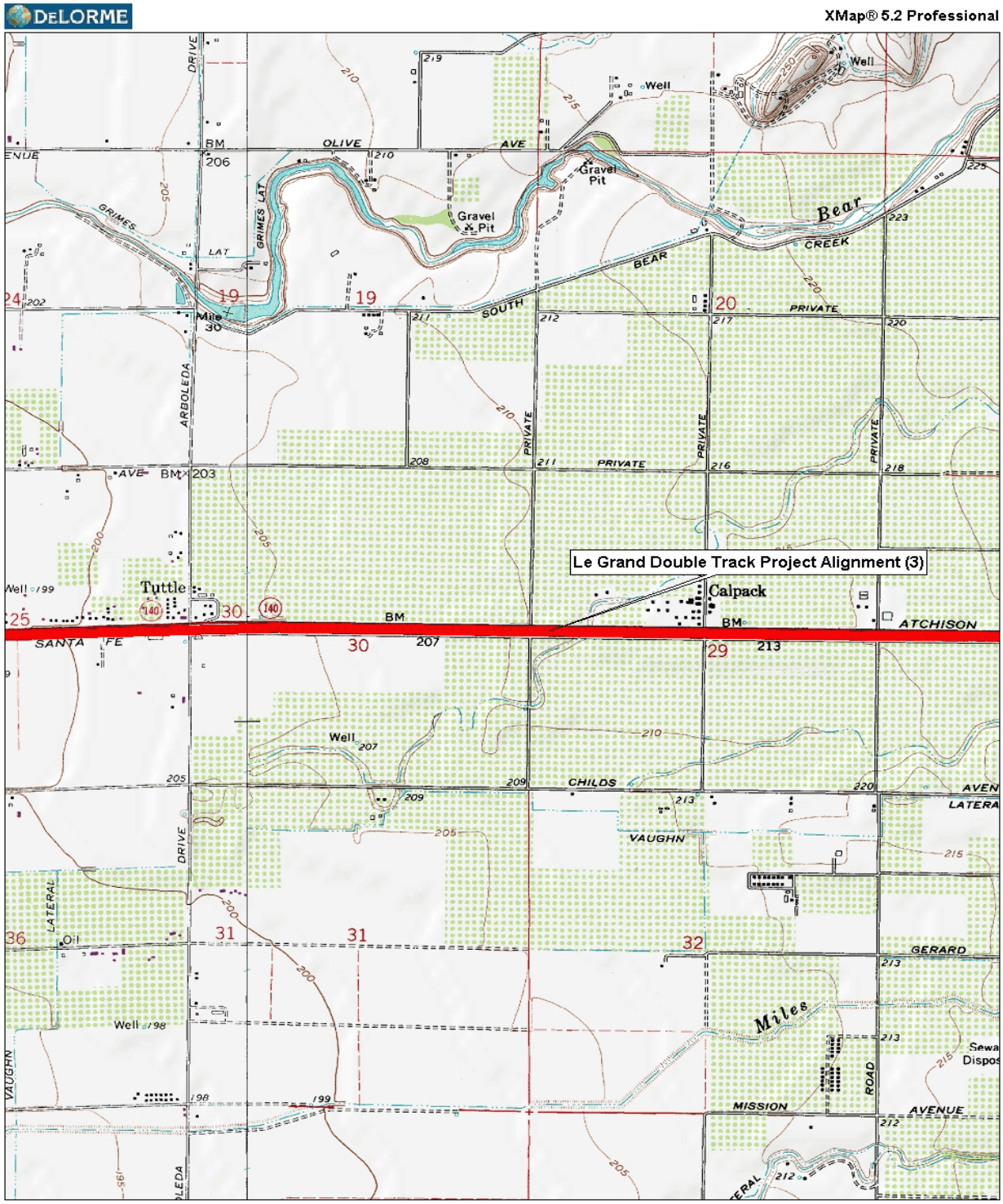


Figure 2d – Proposed Vicinity Detail (Planada)

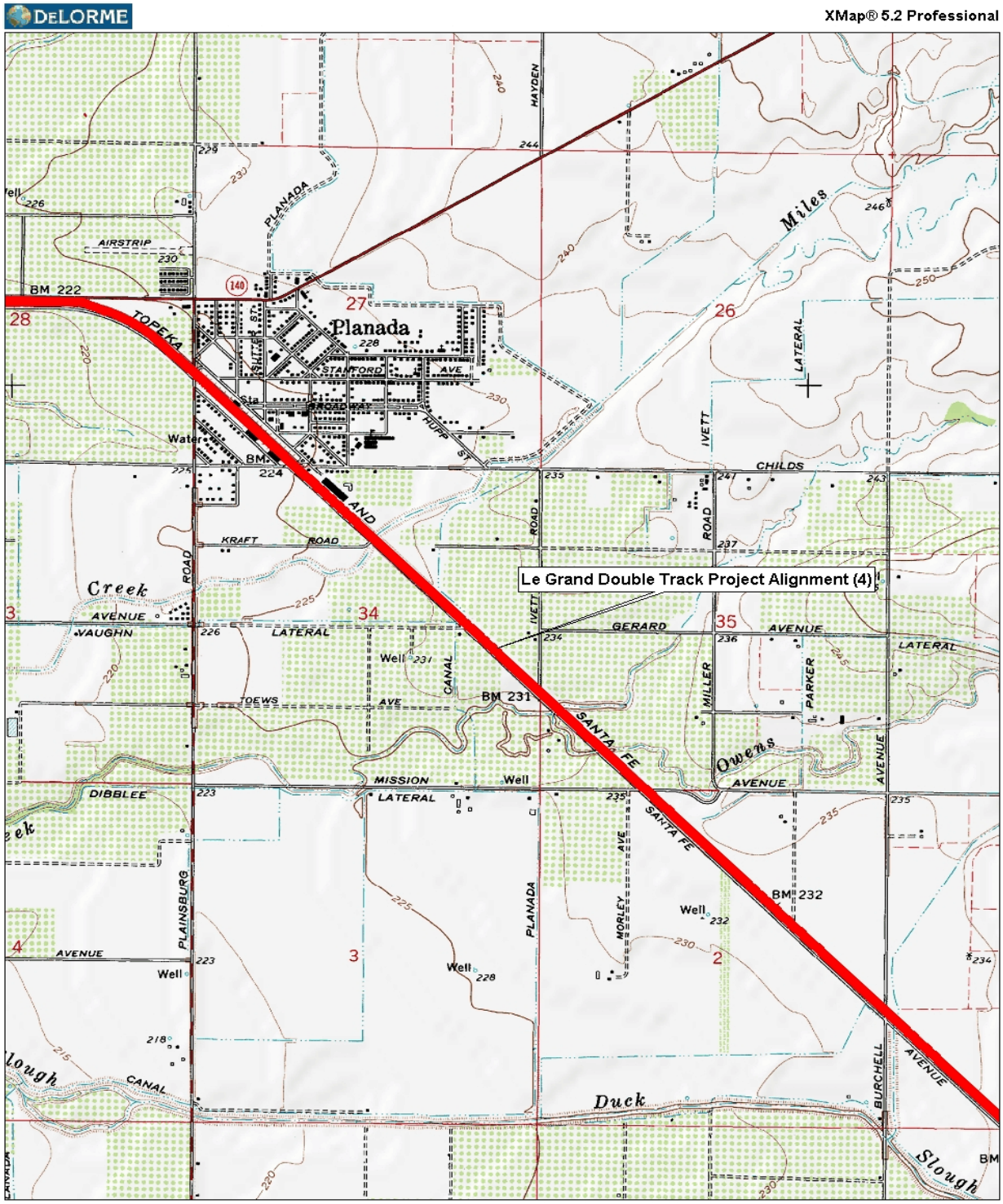


Figure 2e – Proposed Vicinity Detail (Le Grand)

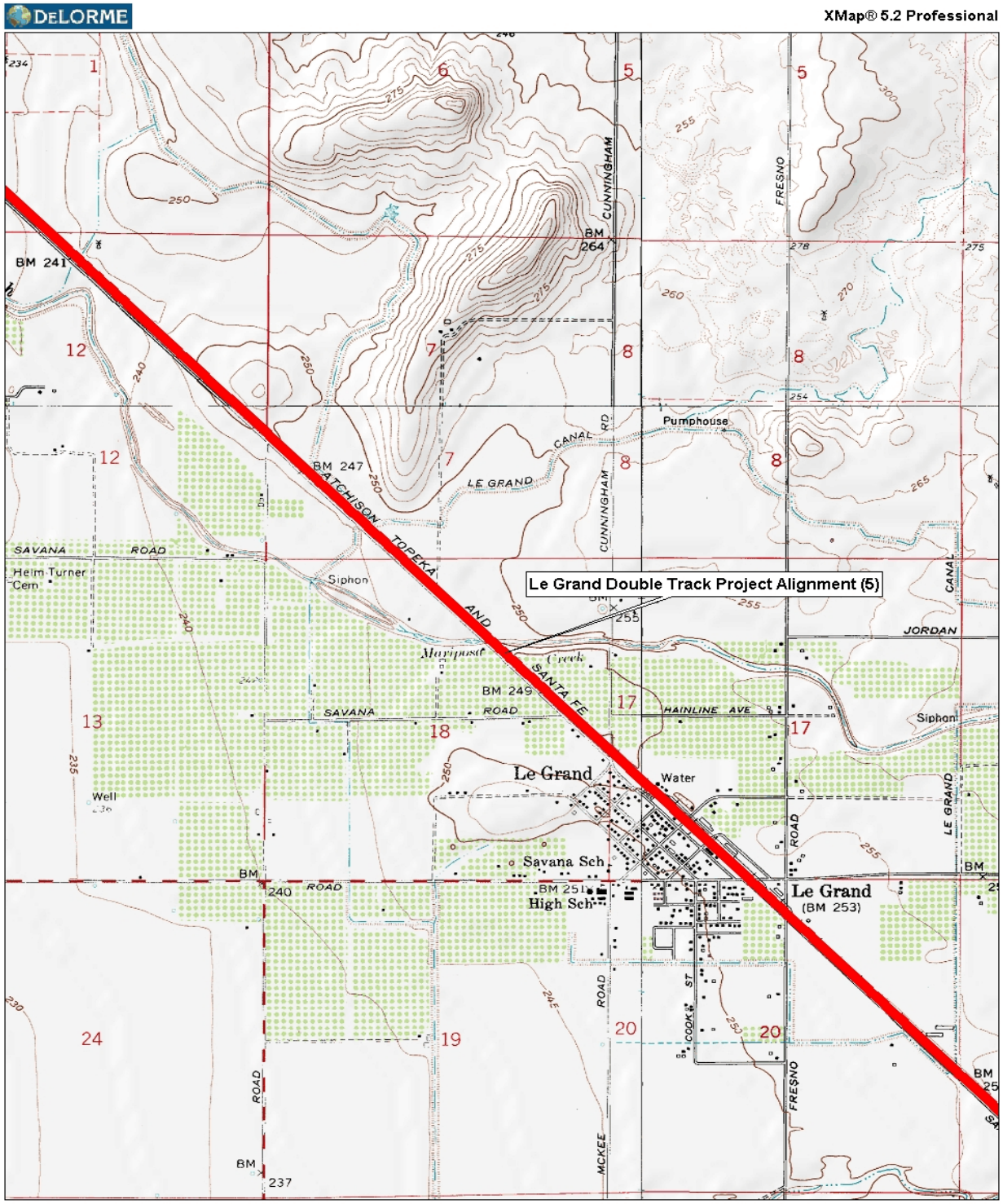
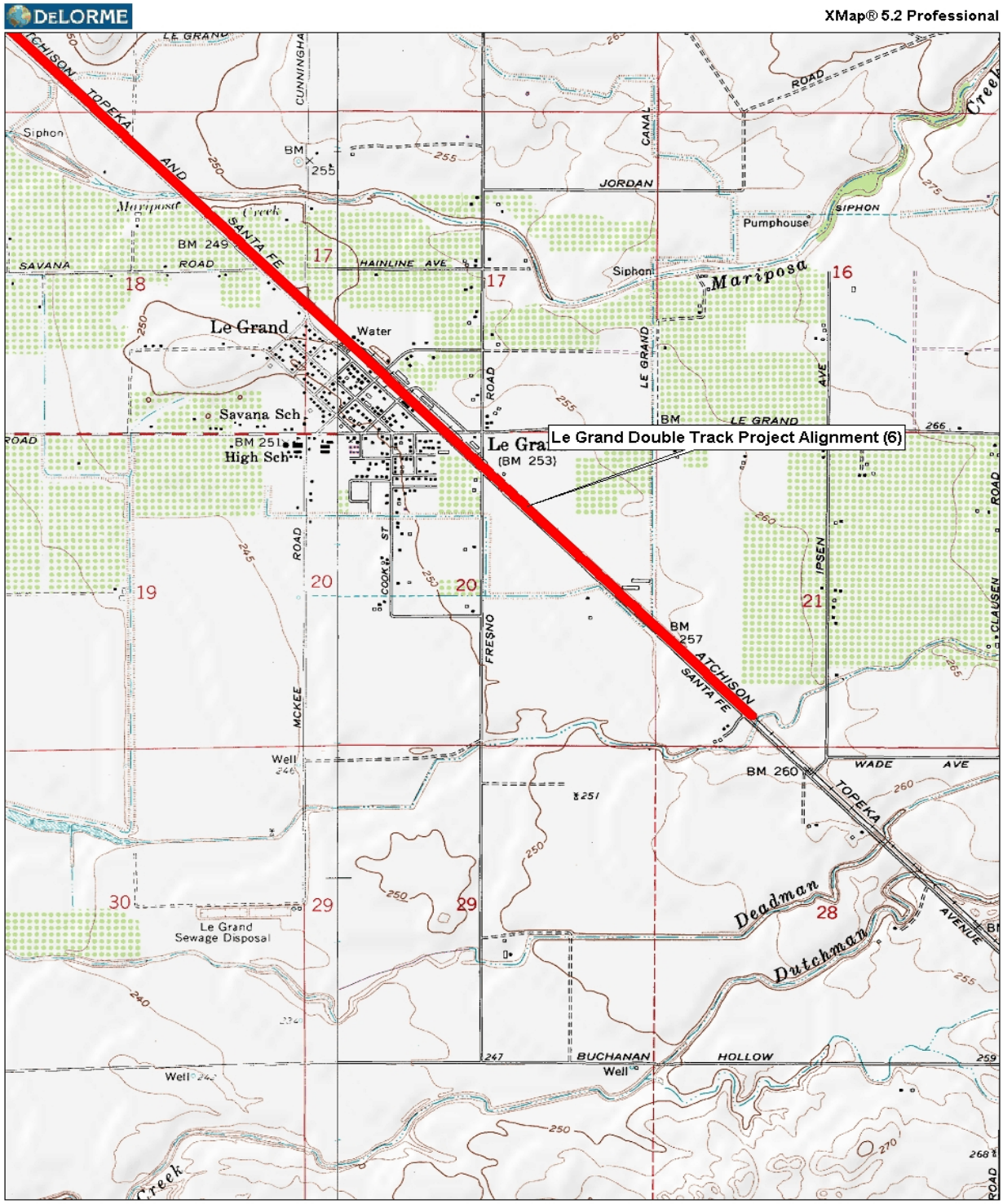


Figure 2f – Proposed Vicinity Detail (Le Grand – Southend)



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PURPOSE OF THIS STUDY

The purpose of this study is to evaluate the air quality impacts of project implementation. The identified need for the project is to enhance the efficiency of rail traffic. Increased efficiencies would accomplish the following:

- Better freight delivery schedules for customers
- Increase inter-city passenger rail utilization
- Decrease engine idling on sidings at current single-track segments

Freight by rail is generally four times as pollution-efficient as trucks (600 gross-ton miles per gallon of diesel for trains versus 150 gross-ton miles per gallon for trucks). Inter-city rail is not very popular because of frequent train delays. Idling trains emit air pollution with zero progress and may block cross-track on-road traffic. The purpose of the project therefore has air quality benefits within each project objective.

Quantification of such benefits is often not rigorously possible. The estimated increase of freight or passenger service depends on other factors besides efficiency (cost per mile, cost of fuel, economic vitality, etc.). Operational air quality benefits have therefore been qualitatively evaluated.

Construction of the proposed improvements however, does lend to a more precise analysis. Approximately 3,350 truck trips to remove excess dirt and import sub-ballast rock may be required to establish a raised track base. An additional 5,000 truck trips may be required to import building materials for new bridges, drainage pipes, support facilities, improved roadway crossings, etc. Final installation by special track-laying trains will also generate air pollution. Long-term air quality benefits are therefore off-set by short-term construction activity impacts.

SCOPE OF THE STUDY

This air quality analysis includes the following components:

- Identification of baseline conditions and thresholds
- Computer modeling of construction activity emissions
- Qualitative discussion of long-term air quality benefits
- Discussion of project consistency with basin air quality plans and with the federal Clean Air Act

AIR QUALITY SETTING

METEOROLOGY/CLIMATE

INTRODUCTION

The proposed project is located in the San Joaquin Valley Air Basin (SJVAB). The SJVAB is defined by the Sierra Nevada Mountains in the east, the Coast Range in the west, and the Tehachapi Mountains in the south. The valley opens to the sea in the north at the Carquinez Straits via the San Francisco Bay. The basin is a large bowl open only to the north.

The region's topographic features restrict air movement through and out of the basin. The Coast Range hinders wind access into the basin from the west, the Tehachapis prevent southerly passage of air flow, and the high Sierra Nevada range is a significant barrier to air movement to the east. These topographic features result in weak air flow that becomes stagnant when high barometric pressure forms over the region. As a result, the SJVAB is highly susceptible to pollutant accumulation over time.

WIND SPEED AND DIRECTION

Wind speed and direction play an important role in dispersion and transport of air pollutants. During the summer, winds usually originate at the north end of the valley and flow in a south-southeasterly direction through Tehachapi Pass into the Mojave Desert Air Basin. During the winter, winds typically reverse and flow in a north-northwesterly direction. Wind speeds are moderate in summer and light in winter.

Superimposed on this seasonal regime is the diurnal wind cycle. In the SJVAB, this cycle takes the form of a combination of sea breeze-land breeze and mountain-valley regimes. The sea breeze-land breeze regime has a sea breeze flowing into the valley from the north during the day and a land breeze flowing out of the valley at night. The mountain-valley regime has an upslope (mountain) flow during the day and a downslope (valley) flow at night. These phenomena add to the complexity of regional windflow and pollutant transport within the SJVAB.

TEMPERATURE

The SJVAB has an "inland Mediterranean" climate averaging over 260 sunny days per year. The valley floor is characterized by warm, dry summers and cooler winters. Summer high temperatures often exceed 100 degrees (F) and average 95 degrees.

In winter, as the cyclonic storm track moves southward, the storm systems moving in from the Pacific Ocean bring a decidedly maritime influence in the valley. The high mountains to the east prevent the cold, continental air masses from reaching the valley. Winters, thus, are mild and humid. The average daily low temperature is 45 degrees.

PRECIPITATION

Precipitation in the project area falls almost exclusively from mid-November to mid-April from the fringes of mid-latitude storms. Merced averages 12 inches of rain annually. However, a shift in the annual storm track can cause rainfall to vary from less than 50 percent to over 200 percent of the annual average.

TEMPERATURE INVERSIONS

The vertical dispersion of air pollutants in the SJVAB is limited by the presence of persistent temperature inversions. A temperature usually decreases with altitude. A reversal of this atmospheric state, where the air temperature increases with height, is termed an "inversion." Inversions can exist at the surface, or at any height above the ground. The height of the base of the inversion is known as the "mixing height". This is the level to which pollutants can mix vertically without impediment.

Air above and below the inversion base does not interchange because of differences in air density. Warm air above the inversion is less dense than below the base. The inversion base represents an abrupt density change where little exchange of air occurs. Inversion layers are significant in determining air pollution concentrations. There are two principal types of inversions that occur in the SJVAB - a surface or radiation inversion, and a subsidence inversion. Surface inversions are formed when the ground surface becomes cooler than the air above it during the night. As the earth's surface cools during the evening hours, the air directly above it also cools, while air higher aloft remains relatively warm. The inversion is destroyed when heat from the sun warms the ground the next day.

Radiation inversions occur most persistently during light wind episodes. The lack of horizontal mixing due to light winds, and the constraint on vertical mixing due to the inversion, leads to elevated pollution "hot spots" in the immediate vicinity of a source of air pollution. Radiation inversions are strongest and most persistent in winter when nights are longest and wind speeds are lightest.

Subsidence inversions occur as air is pushed downward by some mechanism such as the differential pressure changes in the atmosphere. As this air moves downward, it compresses causing its temperature to increase. This type of inversion may persist for many days because ground-based mixing processes do not influence the heights where such inversions form. These inversions occur most strongly in summer. The elevated lid over the valley traps photochemical pollutants such as ozone. Although ozone is destroyed near the surface at night, the elevated layers act as a reservoir that mixes down to the surface early the next day. Whereas radiation inversions are most critical near individual pollution sources, subsidence inversions affect the air pollution climate of the entire valley.

AIR QUALITY

INTRODUCTION

All levels of government have some responsibility for protecting air quality. This section outlines the responsibilities of federal, state, regional and local government agencies in air quality matters and attempts to explain how they interact.

FEDERAL

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

The FCAA required the EPA to set National Ambient Air Quality Standards (NAAQS) for several problem air pollutants on the basis of human health and welfare criteria. NAAQS were established for the following "criteria" air pollutant (so called because they were established on the basis of health criteria):

- Carbon monoxide (CO)
- Ozone (O_3)
- 10-micron or less particulate matter (PM-10)
- 2.5 microns or less particulate matter (PM-2.5)
- Nitrogen dioxide (NO_2)
- Sulfur dioxide (SO_2)
- Lead (Pb)

NAAQS are intended to protect, with an adequate margin of safety, those persons most susceptible to respiratory distress, such as people suffering from asthma or other illness, the elderly, very young children, or others engaged in strenuous work or exercise.

The FCAA required each state to prepare an air quality improvement plan called the State Implementation Plan (SIP) for those pollutants that exceed NAAQS. The SIP is a dynamic process that is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The EPA has responsibility to review all state SIPs to determine if they conform to the mandates of the FCAA and will achieve air quality goals when implemented. If the EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the non-attainment area and may impose additional control measures.

STATE

The California Air Resources Board (ARB) is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing its own air quality legislation called the California Clean Air Act (CCAA), adopted in 1988. The ARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the EPA. The ARB also has the responsibility to produce a major part of the SIP for pollution sources, such as automobiles, that are state-wide in scope. It relies on the local air districts to provide additional strategies for site-specific sources such as factories, power plants, etc. The ARB combines its data with all local district data and submits the completed SIP to the EPA.

The FCAA allows states to establish their own clean air standards, provided the state standards are at least as stringent as the NAAQS. California had established California Ambient Air Quality Standards (CAAQS) even before the first FCAA was ever adopted. The current inventory of NAAQS and CAAQS is shown in Table 1. The health effects of various criteria air pollutants are shown in Table 2.

LOCAL

State law recognized that air pollution does not respect political boundaries and therefore required the ARB to divide the state into separate air basins that each have similar geographic and meteorological conditions. Air districts have the primary responsibility for control of air pollution from all sources other than emissions directly from motor vehicles, which are the responsibility of the ARB and the EPA. Air districts adopt and enforce rules and regulations to achieve state and federal ambient air quality standards and enforce applicable state and federal law.

Currently, the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) has jurisdiction over air quality matters in the SJVAB. The SJVUAPCD was formed in 1991. The air district is responsible for air quality programs in San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and a portion of Kern County.

The SJVUAPCD has a large number of air quality responsibilities. For many years, its primary role was in the control of stationary sources of air pollution. More recent legislation at the state and federal levels increased local air district responsibilities to implement transportation control measures (TCMs). The SJVAPCD also coordinates its air quality planning and improvement efforts with various councils/associations of governments, transportation planning agencies, as well as with economic development or trade associations to maximize the benefit and minimize the impact of air pollution improvement efforts.

Table 1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (140 µg/m³)		0.08 ppm (157 µg/m³)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		Revoked (2006)		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	15 µg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		–	–	–
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (56 µg/m³)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (338 µg/m³)		–		
Lead	30-Day average	1.5 µg/m³	Atomic Absorption	–	–	–
	Calendar Quarter	–		1.5 µg/m³	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 µg/m³)	–	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)	–	
	3 Hour	–		–	0.5 ppm (1,300 µg/m³)	
	1 Hour	0.25 ppm (655 µg/m³)		–	–	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer–visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

Table 2

Health Effects of Major Criteria Pollutants

Pollutants	Sources	Most Relevant Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

BASELINE AIR QUALITY

State and federal regulations require that airsheds be designated as being either in "attainment" or "non-attainment" with respect to specified clean air standards. For non-attainment airsheds, the designation typically includes a modifier that describes the severity of non-attainment. In the absence of representative monitoring data, the airshed may also be designated as "unclassified." Since state and federal AAQS are different, and because severity thresholds differ between state and federal requirements, the project area has two different sets of attainment classifications. The air quality standards attainment classifications for the air basin, including the project site, are as follows:

	Designation/Classification	
Pollutant	**State**	**Federal**
Ozone (O_3) 1-Hour	Non-Attainment/Severe	No Standard
Ozone (O_3) 8-Hour	Non-Attainment/Severe	Non-Attainment Serious
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO2)	Attainment	Attainment
Sulfur Dioxide (SO2)	Attainment	Unclassified
Particulate Matter (PM-10)	Non-Attainment	Non-Attainment Serious
Fine Particulate (PM-2.5)	Non-Attainment	Non-Attainment Serious*

* effective April, 2009.

Ozone and PM-10 are clearly the "problem" air pollutants in the project area, and in the air basin as a whole. The project area is however, slightly better ventilated than locations farther south in the San Joaquin Valley from marine airflow through the Carquinez Straits. Ozone levels are lower in comparison to the southern counties in the basin. While Merced experienced 14 violations of the state one-hour ozone standard in 2008, there were 95 days above the standard at some location in the basin. Similarly, the 8-hour state standard was exceeded on 54 days in 2008 compared to 127 days above standards basin-wide. PM-10 levels in the project area are also lower than father south within the valley. In 2007, Merced had an estimated 36 days per year exceeding the state PM-10 standard. In downtown Fresno, an estimated 54 days were above the 24-hour California PM-10 standard. On the south side of Bakersfield, the PM-10 data predicts that there was an estimated 147 days with unhealthful PM-10 levels. (PM-10 is usually not monitored every day such that the percentage of observed violations is applied to 365 days to estimate the probable annual total). Because attainment designations apply basin-wide, the project area is held to the same stringent air quality control requirements as those portions of the air basin with more substantially degraded air quality.

AIR QUALITY IMPACTS

This air quality impact analysis is designed to meet both NEPA (federal) and state (CEQA) requirements. One of the main differences between NEPA and CEQA is the determination of significance. NEPA does not require a determination of significant effects in the environmental document as is customary in CEQA. Under NEPA, significance requires considerations of both context and intensity. The context, referred to as the "affected environment" in this document is the air quality context within which the project may have effects. Intensity is the severity of the potential impact, considered in context.

CEQA THRESHOLDS OF SIGNIFICANCE

CEQA requires that each Lead Agency identify significant effects on the environment and to adopt measurable thresholds to evaluate/mitigate an impact where feasible. Ozone and PM-10 are the two non-attainment pollutants in the air basin that merit critical consideration relative to project-related air quality impacts. While any generation of air pollution is of concern, precursors to ozone and/or PM-10 generation have the most stringent thresholds. For projects within the SJVAB, the SJVUAPCD, in its "Guide for Assessing and Mitigating Air Quality Impacts," or GAMAQI (rev. 2002), recommends use of the following thresholds for project operations:

ROG	10 tons/year
NOx	10 tons/year
CO	violation of 1- or 8-hour standard

The proposed project is considered air quality positive in improving train service and reducing idling/congestion. The only anticipated potential impact would derive from project construction. Construction activities are treated somewhat differently under APCD guidelines. Unless construction projects are very large or they extend over several years, implementation of recommended mitigation measures in the GAMAQI document is presumed to reduce air quality impacts to individually less-than-significant levels.

In order to mitigate cumulative air quality impacts, the SJVUAPCD has developed Rule 9510 (Indirect Source Review, or ISR). Rule 9510 requires that emissions from construction equipment greater than 50 hp must be reduced by 20 percent for NOx and 45 percent for PM-10 compared to comparable emissions from the statewide average equipment fleet. If the construction contractor is unable to fully document this level of reduction, payment of an in-lieu fee may be made to fund other emissions reduction programs within the Central Valley (purchase cleaner buses, cleaner farm equipment, etc.). Required compliance with Rule 9510 (either through on-site controls or payment of a mitigation fee) will reduce cumulative air quality impacts to a less-than-significant level.

FEDERAL THRESHOLDS

As noted above, NEPA guidelines do not encourage designiation of impacts as (in)significant. However, Section 176(c) of the Clean Air Act Amendments of 1990 prohibit federal participation in projects that would impede implementation of the state implementation plan (SIP) for federal non-attainment pollutants. "Participation" includes project funcing as well as granting any federal permits. If the project-related emissions from construction and operations are less than specified "*de minimis*" levels, no further SIP consistency demonstration is required. The San Joaquin Valley is designated as a "serious" non-attainment area for the federal 8-hour ozone standard. The basin is a non-attainment area for PM-2.5, and a maintenance area for PM-10. Based upon these designations, the following emissions levels are presumed evidence of SIP conformity:

VOC/ROG	-	50 tons/year
NOx	-	50 tons/year
PM-2.5	-	100 tons/year
PM-10	-	100 tons/year

The air basin has requested a "bump up" from a "serious" to a "severe" non-attainment designation for ozone. If the bump-up is approved, the *de minimis* thresholds for VOC and NOx will decrease to 25 tons per year.

CONSTRUCTION ACTIVITY IMPACTS

Dust is typically the primary concern during construction of new infrastructure. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions." Emission rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). These parameters are not known with any reasonable certainty prior to project development and may change from day to day. Any assignment of specific parameters to an unknown future date is speculative and conjectural.

Because of the inherent uncertainty in the predictive factors for estimating fugitive dust generation, regulatory agencies typically use one universal "default" factor based on the area disturbed assuming that all other input parameters into emission rate prediction fall into midrange average values. This assumption may or may not be totally applicable to site-specific conditions on the proposed project site. As noted previously, emissions estimation for project-specific fugitive dust sources is therefore characterized by a considerable degree of imprecision.

Average daily PM-10 emissions during site grading and other disturbance are estimated in EPA's emission factor handbook (AP-42) to be 26.4 pounds/acre. Use of enhanced dust control procedures such as continual soil wetting, use of supplemental binders, early paving, etc. can achieve a substantially higher PM-10 control efficiency. Daily emissions with use of reasonably available control measures (RACMs) for PM-10 can reduce emission levels to around ten (10) pounds per acre per day. With the use of best available control measures (BACMs) the

California Air Resources Board URBEMIS2007 computer model predicts that emissions can be reduced to 1-2 pounds per acre per day.

Of the total 9-12 months estimated for project construction, grading and roadbed construction will require approximately 3-4 months. Simultaneous with roadbed preparation other construction activities which include placement of drainage pipes, construction of cross-overs, turn-outs and mainline transitions and installation of eight new bridges will occur. Secondary support facility construction will require 5-7 months with some activity concurrent with roadbed installation. The final stage of construction involves the laying of new track for 2-3 months. There is estimated to be an average of 100 construction workers employed during these activities. Estimated round trip drive distance is 40 miles (20 miles one way).

The average disturbance width for a double track project is 25 feet. For a 16.43 mile project, a total of 49.8 acres would be a potential source area for fugitive dust generation. If ten percent were in active construction on any given day, 5.0 acres would be under daily simultaneous heavy construction at some point. With the use of RACMs, daily PM-10 emissions during site grading would be 50 pounds per day (5.0 X 10.0 = 50 lb/day). With the use of Best Available Control Measures (BACM) required by the SJVUAPCD Regulation VIII, daily PM-10 emissions can be further reduced. Because of the PM-10 non-attainment status of the air basin, construction activity dust emissions are considered to have a cumulatively significant impact requiring enhanced mitigation even if individual thresholds are not exceeded.

Current research in particulate-exposure health suggests that the most adverse effects derive from ultra-small diameter particulate matter comprised of chemically reactive pollutants such as sulfates, nitrates or organic material, called "PM-2.5". A limited amount of construction activity particulate matter is in the PM-2.5 range. PM-2.5 emissions are estimated by the California ARB to comprise 20.8 percent of PM-10. Other studies have shown that the fugitive dust fraction of PM-2.5 is closer to 10 percent. With mitigation, fugitive PM-2.5 emissions during roadbed construction will be reduced to about ten pounds per day assuming the higher PM-10 fraction.

Exhaust emissions will result from on and off-site heavy equipment. The types and numbers of equipment will vary among contractors such that such emissions cannot be quantified with certainty. Equipment exhaust emissions were calculated presuming that roadbed installation will require excavation of 22,000 cubic yards (CY) of earth and the import or 45,000 CY of sub ballast rock. Haul trucks were assumed to have a 20 cubic yard capacity and a round trip distance of 20 miles for haul trucks was assumed. The URBEMIS2007 computer model was used to calculate emissions from the following prototype construction equipment fleet with the above grading information and employee commute data.

Track-bed Preparation	2 Graders
	6 Compactors
	4 Rollers
	2 Dozers
	2 Backhoes
	2 Water Trucks
Ancillary Facilities	2 Concrete Saws
	1 Grader
	2 Dozers
	2 Signal Boards
	4 Backhoes
	2 Trenchers
	2 Water Trucks
Track Installation	2 Cranes
	2 Forklifts
	2 Generators
	4 Welders

Calculated construction activity emissions were calculated for trackbed preparation in 2012. Although ancillary construction (drainage, bridges, crossings, etc.) will occur concurrently with roadbed preparation, the two activities were split to facilitate abstraction of the emissions data. The track installation activity relies on train haul delivery of materials. Because URBEMIS cannot calculate rail haul or associated train engine idle, these calculations were obtained independently as shown below:

Construction Activity Emissions (tons/year)

Activity	ROG	NOx	CO	SO_2	Exh. PM-10	Exh. PM-2.5	CO_2
Trackbed preparation (16 weeks)							
No Mitigation	0.4	3.5	2.0	0.0	0.2	0.2	422.7
With Mitigation	0.4	2.6	2.0	0.0	0.1	0.1	422.7
Percent Reduced	0%	26%	0%	0%	49%	49%	0%
Section 176 (c) *de minimis*	50	50	100	n/a	100	100	n/a
Ancillary Construction (24 weeks)							
No Mitigation	0.6	4.5	3.2	0.0	0.2	0.2	561.7
With Mitigation	0.6	3.4	3.2	0.0	0.2	0.2	561.7
Percent Reduced	0%	25%	0%	0%	52%	50%	0%
Track Installation (12 weeks)*							
No Mitigation	0.2	2.1	0.9	0.0	0.1	0.1	825.6
With Mitigation	0.2	1.3	0.9	0.0	0.1	0.1	825.6
Percent Reduced	0%	40%	0%	0%	0%	0%	0%
Annual Total (Non Trackbed)							
No Mitigation	0.8	6.6	4.1	0.0	0.3	0.3	825.6
With Mitigation	0.8	5.3	3.8	0.0	0.2	0.2	825.6
Percent Reduced	0%	29%	0%	0%	41%	38%	0%
Total Project (non-rail)							
No Mitigation	1.2	10.1	6.0	0.0	0.5	0.5	1,248,4
With Mitigation	1.2	7.2	6.0	0.0	0.3	0.2	1,248,4
Percent Reduced	0%	28%	0%	0%	49%	49%	0%
Section 176 (c) *de minimis*	50	50	100	n/a	100	100	n/a
Rail Haul Delivery Track and Ballast and Engine Idle (12 weeks)**	0.0	1.3	0.0	0.0	0.0	-	-

Source: URBEMIS2007 Model, Output in Appendix
*Used "demolition" module in model, there is no "track installation" phase in URBEMIS2007
**ARB Area Source Emissions Inventory

CEQA IMPACT

With the application of available mitigation (use of Tier 3-rated diesel equipment and use of diesel particulate filters), peak annual NOx emissions will not exceed the APCD's GAMAQI threshold of 10 tons per year. It should further be noted that this threshold is designed for evaluating operational emissions and not from construction. For construction, the critical determinant is whether all reasonably available control will be applied.

With the use of low-NOx equipment, the total project NOx emissions would be reduced in excess of the requisite Rule 9510 goal of 20 percent of NOx compared to the fleetwide average. The actual anticipated NOx reduction from off-road equipment would be higher than 20 percent, but no NOx "credit" was assigned to on-road travel for fill and other construction materials. With such a level of control, a finding of less-than-significant air quality impact from NOx emissions can be supported. Similarly, PM-10 mitigation can meet the 45 percent goal in Rule 9510. Demonstration of this ability will be required in the submission of the Indirect Source Review (ISR) Air Impact Assessment (AIA) to the SJVUAPCD prior to actual construction. The required APCD forms are attached in the appendix indicating the high degree of detail required to confirm the adequacy of mitigation to meet Rule 9510 requirements. The dust control requirements under Regulation VIII are similarly extensive. The applicable requirements from existing dust control rules are similarly included in the appendix.

NEPA IMPACT

The project, within the NEPA definition of intensity and context, represents a short-term impact in order to achieve a long-term air quality benefit. Its limited intensity is seen in comparing the total project emissions to the Section 176(c) SIP conformity *de minimis* thresholds. NOx emission would be well below the 50 ton per year "serious" non-attainment area threshold. Even with a bump-up to "severe", NOx emissions would still be far less than the 25 ton per year *de minimis* level. With a limited level of impact, with stringent mitigation requirements under APCD Regulation VIII (dust control) and Rule 9510 (indirect source review), and with a long-term air quality benefit of double-tracks, construction activity air quality impacts are not considered substantially adverse within a NEPA context.

Emissions estimates and controls were based upon a generic equipment fleet. A more precise quantification of emissions and mitigation will be required when a construction contractor and his/her equipment fleet is selected.

NATURALLY OCCURING ASBESTOS

Naturally occurring asbestos (NOA) is a concern in some parts of California where serpentine rock formations contain high fractions of asbestos-containing materials. However, that concern revolves around the subsequent abrasion and release of such material from roadways paving with NOA aggregates. There is negligible re-suspension of such material from a railroad track bed because there is no mechanical wearing process. Even if the track bed ballast rock contained elevated levels of NOA, there is no mechanism to effect an airborne release.

OPERATIONAL IMPACTS

Idle Reduction

The only operational difference would be to reduce idling times on sidings waiting for the single track to clear. Generally, freight trains yield to passenger trains. There are approximately 40 freight trains using this track segment that may experience delay. For purposes of calculations, fifty (50) percent of four-engine freight trains were assumed delayed for 15 minutes each. The daily delay "penalty" because of track conflict is:

4 engines X 20 freight trains delayed X 15 minutes/delay

= 1,200 engine-minutes of idling

Idling train engines are not substantial polluters. Diesel engines emit mainly NOx and NOx generation depends upon oxidation temperature. At "cool" idle, NOx generation rates are low. The emissions "savings" from a reduction of 1,200 idling minutes were calculated using EPA factors for Tier 1 engines and are as follows (lb/day):

CO	1.1
ROG	0.4
NOx	5.9
SOx	<0.1
PM-10	<0.3

These reduced emissions are not necessarily significant, but any reductions of ozone precursor emissions (NOx and ROG) in a non-attainment airshed is positive.

PM-2.5 and PM-10 Hot Spot Potential

Transportation projects may cause increasedlevels of particulate emissions at locations where a significant number of diesel vehicles congregate at a single location. A qualitative "hot spot" analysis is required for "projects of air quality concern" (POAQC) located in non-attainment areas if FHWA or FTA funding or approval will occur. The guidelines that characterizes a POAQC is a facility that serves 10,000 diesel-fueled trucks (or equivalent) per day. The proposed project would occur on a track segment carrying 50 trains per day. Diesel combustion emissions would be slightly reduced by substantial elimination of idling on sidings. The proposed project is not a POAQC and thus does not require a PM-10/PM-2.5 "hot spot" analysis.

Microscale CO Hot-Spot Analysis

Transportation projects are required to demonstrate that they will not create new CO "hot spots" or worsen existing violations. Analysis guidance documents are focused almost exclusively on roadway CO emissions. The proposed project will not increase on-road congestion, and may

reduce vehicular delays at locations where idling trains currently block on-road traffic. A micro-scale CO impact analysis is not required for this project.

Cumulative Impacts

The proposed double-track may promote an increase in freight and passenger movement by improved rail schedule reliability. However, transport by rail is considered more pollution-efficient than on-road movement. Rail would generally not induce growth of goods/passenger movement, but only accommodate an existing possible demand. Cumulative air quality impacts are considered less-than-significant.

No Project-Alternative

The no project alternative would continue the existing pattern of trains forced onto sidings because of track demand conflicts. Such a pattern delays train schedules, creates safety issues as trains change speeds where they enter of exit the mainline, blocks surface streets, emits excess air pollutants from idling engines and creates noise impacts at idling engine locations. The no project alternative is considered less environmentally superior than the proposed project.

GREENHOUSE GAS EMISSIONS

"Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders regarding greenhouse gases. The Governor's Office of Planning and Research is in the process of developing CEQA significance thresholds for GHG emissions but thresholds have yet to be established. GHG statues and executive orders (EO) include AB 32, SB 1368, EO S-03-05, EO S-20-06 and EO S-01-07.

AB 32 is one of the most significant pieces of environmental legislation that California has adopted. Among other things, it is designed to maintain California's reputation as a "national and international leader on energy conservation and environmental stewardship." It will have wide-ranging effects on California businesses and lifestyles as well as far reaching effects on other states and countries. A unique aspect of AB 32, beyond its broad and wide-ranging

mandatory provisions and dramatic GHG reductions are the short time frames within which it must be implemented. Major components of the AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.
- Requires immediate "early action" control programs on the most readily controlled GHG sources.
- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25-40%, from business as usual, over the next 13 years (by 2020).
- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementing regulations for AB 32 is under way. Additionally, through the California Climate Registry (CCAR), general and industry-specific protocols for assessing and reporting GHG emissions have been developed. GHG sources are categorized into direct sources (i.e. company owned) and indirect sources (i.e. not company owned). Direct sources include combustion emissions from on-and off-road mobile sources, and fugitive emissions. Indirect sources include off-site electricity generation and non-company owned mobile sources.

Impacts - Greenhouse Gas Emissions

Worst case construction emissions were assumed to occur in a year where trackbed preparation, ancillary construction and project installation were to occur. The URBEMIS2007 computer model predicts that a peak activity day will generate the following CO_2 emissions from a combination of these activities:

Trackbed Preparation	-	423 tons/yr
Ancillary Construction	-	561 tons/yr
Track Installation	-	264 tons/yr
Total	-	1,248 tons/yr

For purposes of analysis, it was assumed that non-CO_2 GHG emissions are negligible, and that the total project construction GHG burden can be characterized 1,248 tons/year that all the above activities occur in a single year.

In 2004, the statewide annual GHG inventory in CO_2-equivalent levels (including all non-CO_2 gases weighted by their thermal absorption potential) was 492,000,000 metric tons (541,000,000 short tons). The worst-case project combined construction impact of 1,248 tons/year represents approximately 0.0002 percent of the statewide burden.

There are no adopted thresholds of GHG emissions significance. However, GHG emissions are implicated in the acceleration of global warming experienced in the last several decades. Climatic impacts are global in scale. Any project-specific contribution to the global issue is miniscule. In the absence of any definitive thresholds of significance, the GHG emphasis on a project-specific level is to reduce energy consumption and reduce vehicular travel as much as is reasonably feasible. Unless there is a greater shift to clean energy such as solar, hydroelectric, wind, nuclear, etc., no substantial reduction in GHG is likely attainable by conventional methods except through energy conservation.

MITIGATION

Construction and operation of the double-track system will have less-than-significant. Short-term construction impacts will be less than significant. SJVUAPCD in Regulation VIII requires that Best Available Control Measures (BACMs) be used where feasible. Recommended construction activity mitigation including BACM's includes:

Dust Control

- Apply soil stabilizers to inactive areas.
- Prepare a high wind dust control plan and implement plan elements and terminate soil disturbance when winds exceed 25 mph.
- Stabilize previously disturbed areas if subsequent construction is delayed.
- Water exposed surfaces and haul roads 3 times/day.
- Cover all stock piles with tarps.
- Replace ground cover in disturbed areas as soon as feasible.
- Reduce speeds on unpaved roads to less than 15 mph.

Exhaust Emissions

- Require 90-day low-NOx tune-ups for off-road equipment.
- Limit allowable idling to 5 minutes for trucks and heavy equipment.
- Utilize equipment whose engines are equipped with diesel oxidation catalysts if available.

SJVUAPCD has developed an Indirect Source Review (ISR) regulation designed to mitigate cumulative air quality impacts from development, including construction. ISR rules for construction require use of enhanced construction equipment technology, or the payment of an in-lieu mitigation fee. Preliminary calculations have demonstrated the feasibility of reducing NOx by 20 percent and PM-10 by 45 percent compared to the fleet-wide average. An AIA form must be submitted to the SJVUAPCD to verify that the project-specific equipment fleet will meet the above heightened efficiency requirements.

APPENDIX

- **URBEMIS2007 Computer Model Results**
- **Indirect Source Review Data Requirements**
- **Regulations VIII Dust Control Requirements**

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Users\hgiroux\AppData\Roaming\Urbemis\Version9a\Projects\[redacted].urb924

Project Name: Le Grand

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (tons/year unmitigated)	1.22	10.13	5.96	0.00	2.01	0.51	2.52	0.42	0.47	0.89	1,248.38
2012 TOTALS (tons/year mitigated)	1.22	7.25	5.96	0.00	2.01	0.26	2.28	0.42	0.24	0.66	1,248.38
Percent Reduction	0.00	28.41	0.00	0.00	0.00	48.63	9.84	0.00	48.67	25.62	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)							

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.01	0.00	0.00	0.00	0.00	0.00	0.18

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.01	0.00	0.00	0.00	0.00	0.00	0.18

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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2012	1.22	10.13	5.96	0.00	2.01	0.51	2.52	0.42	0.47	0.89	1,248.38
Fine Grading 01/02/2012-04/20/2012	0.41	3.53	1.95	0.00	2.01	0.18	2.19	0.42	0.17	0.59	422.71
Fine Grading Dust	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.42	0.00	0.42	0.00
Fine Grading Off Road Diesel	0.35	2.71	1.49	0.00	0.00	0.15	0.15	0.00	0.14	0.14	269.01
Fine Grading On Road Diesel	0.06	0.81	0.28	0.00	0.00	0.03	0.04	0.00	0.03	0.03	135.27
Fine Grading Worker Trips	0.01	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.43
Building 04/23/2012-10/05/2012	0.58	4.48	3.15	0.00	0.01	0.24	0.25	0.00	0.22	0.23	561.73
Building Off Road Diesel	0.52	3.95	2.19	0.00	0.00	0.22	0.22	0.00	0.21	0.21	392.36
Building Vendor Trips	0.04	0.50	0.39	0.00	0.00	0.02	0.02	0.00	0.02	0.02	107.95
Building Worker Trips	0.02	0.03	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.42
Demolition 10/08/2012-12/28/2012	0.23	2.11	0.87	0.00	0.00	0.08	0.08	0.00	0.08	0.08	263.94
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.23	2.11	0.80	0.00	0.00	0.08	0.08	0.00	0.08	0.08	256.26
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.68

Phase Assumptions

Phase: Demolition 10/8/2012 - 12/28/2012 - Type Your Description Here

Building Volume Total (cubic feet): 0

Building Volume Daily (cubic feet): 0

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day

2 Generator Sets (549 hp) operating at a 0.74 load factor for 8 hours per day

2 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day

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4 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Fine Grading 1/2/2012 - 4/20/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 52

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Default

10 lbs per acre-day

On Road Truck Travel (VMT): 840

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

6 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

4 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 4/23/2012 - 10/5/2012 - Default Building Construction Description

Off-Road Equipment:

2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Signal Boards (15 hp) operating at a 0.78 load factor for 8 hours per day

4 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

2 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

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	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	1.22	7.25	5.96	0.00	2.01	0.26	2.28	0.42	0.24	0.66	1,248.38
Fine Grading 01/02/2012-04/20/2012	0.41	2.60	1.95	0.00	2.01	0.06	2.07	0.42	0.06	0.48	422.71
Fine Grading Dust	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.42	0.00	0.42	0.00
Fine Grading Off Road Diesel	0.35	1.78	1.49	0.00	0.00	0.03	0.03	0.00	0.03	0.03	269.01
Fine Grading On Road Diesel	0.06	0.81	0.28	0.00	0.00	0.03	0.04	0.00	0.03	0.03	135.27
Fine Grading Worker Trips	0.01	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.43
Building 04/23/2012-10/05/2012	0.58	3.38	3.15	0.00	0.01	0.11	0.12	0.00	0.10	0.11	561.73
Building Off Road Diesel	0.52	2.85	2.19	0.00	0.00	0.09	0.09	0.00	0.09	0.09	392.36
Building Vendor Trips	0.04	0.50	0.39	0.00	0.00	0.02	0.02	0.00	0.02	0.02	107.95
Building Worker Trips	0.02	0.03	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.42
Demolition 10/08/2012-12/28/2012	0.23	1.27	0.87	0.00	0.00	0.08	0.08	0.00	0.08	0.08	263.94
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.23	1.27	0.80	0.00	0.00	0.08	0.08	0.00	0.08	0.08	256.26
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.68

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Demolition 10/8/2012 - 12/28/2012 - Type Your Description Here

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rough Terrain Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

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For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Fine Grading 1/2/2012 - 4/20/2012 - Default Fine Site Grading Description

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 4/23/2012 - 10/5/2012 - Default Building Construction Description

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

San Joaquin Valley Air Pollution Control District

Indirect Source Review (ISR) - Air Impact Assessment (AIA)
Transportation Project Application Form

A. Applicant Information

Applicant/Business Name:			
Mailing Address:	City:	State:	Zip:
Contact:	Title:		
Phone:	Fax:	Email:	

B. Agent Information (if applicable)

Agent/Business Name:			
Mailing Address:	City:	State:	Zip:
Contact:	Title:		
Phone:	Fax:	Email:	

If an Agent is signing the Air Impact Assessment Application on behalf of the Applicant, a signed letter from the Applicant giving the Agent authorization is required.

C. Project Information

Project Name:		Tract Number(s) (if known):	
Project Location	Street:	City:	County:
Cross Streets:			
Permitting Agency Name:			
Mailing Address:	City:	State:	Zip:
Permit Type and Number (if known):			

D. Project Description

Please check the box next to the option that best describes the project:

- ☐ New Road Construction
- ☐ Expansion to an Existing Road (widening)
- ☐ Interchange or Intersection Improvements
- ☐ Bridge / Overpass

E. Notice of Violation

Is this application being submitted as a result of receiving a Notice of Violation (NOV) from the District?

☐ Yes If Yes, provide the NOV number.

☐ No **NOV #**

FOR APCD USE ONLY

Date Stamp

Filing Fee Received:_____

Date Paid:_____

Check #:_____

Project #:_____

Applicant #:_____

F. Development and Timing Details

Please note that development timelines provided within this section should reflect actual work time, and should not account for possible project delays.

Year construction will start:	Length of construction activity: months
Length of road being constructed: miles	Width of road being constructed: feet

Predominant Soil Type (choose one): ☐ Sand Gravel ☐ Weathered Rock – Earth ☐ Blasted Rock

Area to be disturbed: acres	Amount of soil imported: tons	cubic yards/day
Maximum area disturbed per day: acres	Amount of soil exported: tons	cubic yards/day
Average truck capacity: cubic yards	Will water trucks be used? ☐ Yes	☐ No

G. On-Site Mitigation

The off-road construction fleet being used for this project may be cleaner and/or newer than the statewide average, which represents the unmitigated baseline of the project's emissions. If this is the case, the Applicant has the option of submitting to the District the Detailed Fleet Form, which requires the Applicant to provide details of the construction equipment to be used, e.g. engine model year, horsepower, hours of operation, etc. The Transportation Detailed Fleet Form can be found on the District's website at www.valleyair.org.

☐ **I would like the fleet details to be analyzed, and have enclosed the Transportation Detailed Fleet Form.**

H. Review Period

You may request a five (5) day period to review a draft of the District's analysis of your project before it is finalized. However, if you choose this option, it will delay the project's finalization by five (5) business days.

☐ **I request to review a draft of the District's analysis.**

I. Fee Deferral Schedule

If the project's on-site air pollution reductions (mitigation) insufficiently reduced air pollution as outlined in Rule 9510, an off-site fee is assessed based on the excess air pollution. The money collected from this fee will be used by the District to reduce air pollution emissions 'off-site' on behalf of the project.

An Applicant may request a deferral of all or part of the 'off-site' fees up to, but not to exceed, the start date of construction. The start of construction is any of the following, whichever occcurs first: start of grading, start of demolition, or any other site development activities not mentioned above. The Fee Deferral Schedule Application can be found on the District's website at www.valleyair.org.

☐ **I request a Fee Deferral Schedule, and have enclosed the Fee Deferral Schedule Application.**

J. Change of Project Developer

The Applicant assumes all responsibility for ISR compliance for this project. If the project developer changes, the Applicant must notify the Buyer, and both Buyer and Applicant must file a 'Change of Project Developer' form with the District. If there is a change of project developer, and a 'Change of Project Developer' form is not filed with the District, the Applicant will remain liable for ISR compliance. The Change of Project Developer form can be found on the District's website at www.valleyair.org.

K. Required Attachments

I am enclosing the following required documents:

☐ Tract Map or Project Design Map ☐ Vicinity Map

☐ Letter from Applicant granting Agent authorization (if necessary) ☐ Application Filing Fee of $648.00

L. Certification Statement

I certify that I have reviewed and completed the entire application and hereby attest that the information relayed within is true and correct to the best of my knowledge. I commit to implementation of those on-site measures that I have selected above. I am responsible for notifying the District if I will be unable to implement these measures. If a committed measure is not implemented, the project may be re-assessed for air quality impacts.

(An authorized Agent may sign the form in lieu of the Applicant if an authorization letter **signed by the Applicant** is provided).

Name (printed):_____	Title:_____
Signature:_____	Date:_____

San Joaquin Valley Air Pollution Control District

www.valleyair.org

Indirect Source Review (ISR)

Transportation Project

Construction Schedule - DETAIL Fleet Supplemental Form

Applicant Information	
Applicant Name:	
Project Name:	
Project Location:	

Construction Fleet Emissions

Subsections are organized by phase of construction. Please attach additional sheets if necessary.

1. Grubbing/Land Clearing _____ Active Days of Construction

Type of Equipment	Engine Model Year or Year Rebuilt	Equipment Horsepower	Total Hours of Operation	Alternative Fuel Type	Control Device	No. of this Equipment Type
Bore / Drill Rig						
Concrete / Industrial Saw						
Crane						
Crawler Tractor						
Crushing / Processing Equip.						
Excavator						
Grader						
Off Highway Tractor						
Off Highway Truck						
Paver						
Other Equipment						
Paving Equipment						
Rollers						
Rough Terrain Forklift						
Rubber Tired Dozer						
Rubber Tired Loader						
Scraper						
Signal Boards						
Skid Steer Loader						
Surfacing Equipment						
Tractor / Loader / Backhoe						
Trencher						

2. Grading/Excavation _____ Active Days of Construction

Type of Equipment	Engine Model Year or Year Rebuilt	Equipment Horsepower	Total Hours of Operation	Alternative Fuel Type	Control Device	No. of this Equipment Type
Bore / Drill Rig						
Concrete / Industrial Saw						
Crane						
Crawler Tractor						
Crushing / Processing Equip.						
Excavator						
Grader						
Off Highway Tractor						
Off Highway Truck						
Paver						
Other Equipment						
Paving Equipment						
Rollers						
Rough Terrain Forklift						
Rubber Tired Dozer						
Rubber Tired Loader						
Scraper						

Signal Boards						
Skid Steer Loader						
Surfacing Equipment						
Tractor / Loader / Backhoe						
Trencher						

3. Drainage/Utilities/Subgrade Active Days of Construction

Type of Equipment	Engine Model Year or Year Rebuilt	Equipment Horsepower	Total Hours of Operation	Alternative Fuel Type	Control Device	No. of this Equipment Type
Bore / Drill Rig						
Concrete / Industrial Saw						
Crane						
Crawler Tractor						
Crushing / Processing Equip.						
Excavator						
Grader						
Off Highway Tractor						
Off Highway Truck						
Paver						
Other Equipment						
Paving Equipment						
Rollers						
Rough Terrain Forklift						
Rubber Tired Dozer						
Rubber Tired Loader						
Scraper						
Signal Boards						
Skid Steer Loader						
Surfacing Equipment						
Tractor / Loader / Backhoe						
Trencher						

4. Paving Active Days of Construction

Type of Equipment	Engine Model Year or Year Rebuilt	Equipment Horsepower	Total Hours of Operation	Alternative Fuel Type	Control Device	No. of this Equipment Type
Bore / Drill Rig						
Concrete / Industrial Saw						
Crane						
Crawler Tractor						
Crushing / Processing Equip.						
Excavator						
Grader						
Off Highway Tractor						
Off Highway Truck						
Paver						
Other Equipment						
Paving Equipment						
Rollers						
Rough Terrain Forklift						
Rubber Tired Dozer						
Rubber Tired Loader						
Scraper						
Signal Boards						
Skid Steer Loader						
Surfacing Equipment						
Tractor / Loader / Backhoe						
Trencher						

San Joaquin Valley Air Pollution Control District

www.valleyair.org

Indirect Source Review (ISR) – On-Site Emission Reductions
Transportation Project
Monitoring and Reporting Schedule Supplemental Form

This form is for on-site emission reduction measures that are subject to District monitoring and/or reporting. Each on-site mitigation measure that was selected, but is not required or enforced by another public agency will require District enforcement. The relevant sections of this form must be completed for ***each*** on-site measure that identified the District as the "Enforcement Mechanism".

For those measures that require a Monitoring and Reporting Schedule (MRS) with the District, **please check the corresponding check box (left column) and sign this form.** The District will enforce checklist measures selected by the applicant that are not required by another agency through the compliance measures listed below. Please note—the District reserves the right to perform on-site inspections for all measures identified even if not explicitly stated under "District Monitoring".

Applicant Information	
Applicant/Agency Name:	
Project Name:	
Project Location:	

Monitoring and Reporting Schedule

	On-Site Measure	Standard for Compliance	Applicant Reporting	District Monitoring
Construction				
☐	**General Fleet with Mitigation**	Provide a construction fleet schedule	Prior to grading	During Construction
☐	**Detailed Fleet**	Provide a construction fleet schedule	Prior to grading	During Construction

Certification Statement

I certify that I have reviewed and completed the [redacted] Monitoring and Reporting Schedule and hereby attest that the information relayed within is true and correct to the best of my knowledge. I commit to implementation of those on-site measures that I have selected above. I am responsible for notifying the District if I will be unable to implement these measures. If a committed measure is not implemented, the project may be re-assessed for air quality impacts.

(An authorized agent may sign the form in lieu of the applicant if an authorization letter **signed by the applicant** is provided)

Applicant/Business Name:	
Name (printed):	Title:
Signature:	Date (mm/dd/yy):

5.6 Air Impact Assessment (AIA): An AIA shall be produced for the project from the project specific information identified in the AIA application. An AIA may be produced by or for the applicant. If an AIA is not provided by the applicant, the District shall perform the AIA during the AIA application review period. The AIA shall meet the following requirements:

5.6.1 The analysis of the proposed project shall be conducted according to the information provided in the application;

5.6.2 The analysis shall employ an APCO-approved model or calculator and include detailed documentation and reasons for all changes to the default input values;

5.6.3 If the AIA is conducted by or for the applicant, a hard copy and an electronic copy of all model runs conducted for the project and each phase thereof, shall be submitted;

5.6.4 The applicant shall include any other information and documentation that supports the calculation of emissions and emissions reductions;

5.6.5 The AIA shall quantify construction and operational NOx and PM10 emissions associated with the project. This shall include the estimated construction and operational baseline emissions, and the mitigated emissions for each applicable pollutant for the development project, or each phase thereof;

5.6.6 The AIA shall quantify the Off-Site Fee, if applicable.

6.0 General Mitigation Requirements

6.1 Construction Equipment Emissions

6.1.1 The exhaust emissions for construction equipment greater than fifty (50) horsepower used or associated with the development project shall be reduced by the following amounts from the statewide average as estimated by the ARB:

6.1.1.1 20% of the total NOx emissions, and

6.1.1.2 45% of the total PM10 exhaust emissions.

6.1.2 An applicant may reduce construction emissions on-site by using less-polluting construction equipment, which can be achieved by utilizing add-on controls, cleaner fuels, or newer lower emitting equipment.

6.2 Operational Emissions

6.2.1 NOx Emissions

Applicants shall reduce 33.3%, of the project's operational baseline NOx emissions over a period of ten years as quantified in the approved AIA as specified in Section 5.6.

6.2.2 PM10 Emissions

Applicants shall reduce of 50% of the project's operational baseline PM10 emissions over a period of ten years as quantified in the approved AIA as specified in Section 5.6.

6.3 The requirements listed in Sections 6.1 and 6.2 above can be met through any combination of on-site emission reduction measures or off-site fees.

7.0 Off-site Emission Reduction Fee (Off-Site Fee) Calculations and Fee Schedules

7.1 Off-site Fee Calculations

7.1.1 Construction Activities

7.1.1.1 NOx Emissions

The applicant shall pay to the District a monetary sum necessary to offset the required construction NOx emissions not reduced on-site. The off-site fee shall be calculated as follows:

$$CN\ OF = \sum_{i=1}^{n} [NACE_i - (0.8 \times NSEE_i)] \times CNR_i$$

Where,

CN OF = Construction NOx Off-Site Fee, in dollars

i = each phase

n = last phase

NACE = Actual Estimated Equipment NOx Emissions, as documented in the APCO approved Air Impact Assessment application, in total tons

NSEE = Statewide Average Equipment NOx Emissions, as calculated by the APCO, in total tons

CNR = Cost of NOx Reductions identified in Section 7.2.1 below, in dollars per ton. For projects with an approved FDS, the cost of reductions shall be based on the year each payment is made.

7.1.1.2 PM10 Emissions

The applicant shall pay a monetary sum necessary to offset the required construction PM10 exhaust emissions not reduced on-site. The off-site fee shall be calculated as follows:

$$CPM\ \ OF = \sum_{i=1}^{n} \left[PMACE_{\ i} - (0.55 \times PSEE_{\ i})\right] \times CPR_{\ i}$$

Where,

CPM OF = Construction PM10 Off-Site Fee, in dollars

i = each phase

n = last phase

PMACE = Actual Estimated Equipment PM10 Emissions, as documented in the APCO approved AIA application, in total tons

PSEE = Statewide average Equipment PM10 Emissions, as calculated by the APCO, in total tons

CPR = Cost of PM10 Reductions identified in Section 7.2.2 below, in dollars per ton. For projects with an approved FDS, the fees shall be based on the year each payment is made.

7.1.2 Operational and Area Source Activities

7.1.2.1 NOx Emissions

The applicant shall pay a monetary sum necessary to offset the excess NOx emissions not reduced on-site. The off-site fee shall be calculated as follows:

$$NOxOF = \sum_{i=1}^{n} \left[\left(\frac{NEB_i \times 7.5}{3}\right) - (NEB_i \times 7.5 \times NAPOR_i)\right] \times CNR_i$$

RULE 8021 CONSTRUCTION, DEMOLITION, EXCAVATION, EXTRACTION, AND OTHER EARTHMOVING ACTIVITIES (Adopted November 15, 2001; Amended August 19, 2004)

1.0 Purpose

The purpose of this rule is to limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities.

2.0 Applicability

This rule applies to any construction, demolition, excavation, extraction, and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel on site, and travel on access roads to and from the site. This rule also applies to the construction of new landfill disposal sites or modification to existing landfill disposal sites prior to commencement of landfilling activities. The provisions of this rule adopted on November 15, 2001 shall remain in effect until October 1, 2004 at which time the amendments adopted on August 19, 2004 shall take effect.

3.0 Definitions

The definitions of terms in Rule 8011 (General Requirements) shall apply to this rule.

4.0 Exemptions

In addition to the exemptions established in Rule 8011, the activities listed in Sections 4.1 through 4.5 are exempt from this rule. However, carryout and trackout materials as a result of activities exempted in Sections 4.1 through 4.5 of this rule must be removed from any paved public roads pursuant to Rule 8041 (Carryout and Trackout):

4.1 Blasting activities that have been permitted by the California Division of Industrial Safety. Other activities performed in conjunction with blasting are not exempt from complying with the provisions of other applicable rules under Regulation VIII (Fugitive PM10 Prohibitions).

4.2 Maintenance or remodeling of existing buildings and additions to existing buildings where total building area is not increased by more than fifty percent, or 10,000 square feet, whichever is less; but not including ancillary construction such as expanding parking lots.

4.3 All additions to existing single family residential buildings.

4.4 Diskingof weeds and dried vegetation related to fire prevention required by a Federal, State or local agency on a site less than one-half (½) acre. Activities

performed in conjunction with disking are not exempt from complying with the provisions of other applicable rules under Regulation VIII.

4.5 The spreading of landfill daily cover necessary to cover garbage/rubbish in order to preserve public health and safety and to comply with the requirements of the California Integrated Waste Management Board during wind conditions which would generate fugitive dust.

5.0 Requirements

No person shall perform any construction, demolition, excavation, extraction, or other earthmoving activities unless the appropriate requirements in sections 5.1 through 5.5 are sufficiently implemented to limit VDE to 20% opacity and comply with the conditions for a stabilized surface area when applicable. In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII.

5.1 A person shall implement the requirements specified below when using wrecking balls or other wrecking equipment to raze or demolish buildings.

5.1.1 Apply sufficient water to building exterior surfaces, unpaved surface areas where equipment will operate, and razed building materials to limit VDE to 20% opacity throughout the duration of razing and demolition activities.

5.1.2 Apply sufficient dust suppressants to unpaved surface areas within 100 feet where materials from razing or demolition activities will fall in order to limit VDE to 20% opacity.

5.1.3 Apply sufficient dust suppressants to unpaved surface areas where wrecking or hauling equipment will be operated in order to limit VDE to 20% opacity

5.1.4 Handling, storage, and transport of bulk materials on-site or off-site resulting from the demolition or razing of buildings shall comply with the requirements specified in Rule 8031 (Bulk Materials)

5.1.5 Apply water within 1 hour of demolition to unpaved surfaces within 100 feet of the demolished structure.

5.1.6 Prevention and removal of carryout or trackout on paved public access roads from demolition operations shall be performed in accordance with Rule 8041 (Carryout and Trackout).

5.2 A person shall control the fugitive dust emissions to meet the requirements in Table 8021-1.

Table 8021-1 - CONTROL MEASURE OPTIONS FOR CONSTRUCTION, EXCAVATION, EXTRACTION, AND OTHER EARTHMOVING ACTIVITIES	
A.	PRE-ACTIVITY:
	A1 Pre-water site sufficient to limit VDE to 20% opacity, and
	A2 Phase work to reduce the amount of disturbed surface area at any one time.
B.	DURING ACTIVE OPERATIONS:
	B1 Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity; or
	B2 Construct and maintain wind barriers sufficient to limit VDE to 20% opacity. If utilizing wind barriers, control measure B1 above shall also be implemented.
	B3 Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20% opacity and meet the conditions of a stabilized unpaved road surface.
C.	TEMPORARY STABILIZATION DURING PERIODS OF INACTIVITY:
	C1 Restrict vehicular access to the area; and
	C2 Apply water or chemical/organic stabilizers/suppressants, sufficient to comply with the conditions of a stabilized surface. If an area having 0.5 acres or more of disturbed surface area remains unused for seven or more days, the area must comply with the conditions for a stabilized surface area as defined in section 3.58 of Rule 8011.

5.3 Speed Limitations and Posting of Speed Limit Signs on Uncontrolled Unpaved Access/Haul Roads on Construction Sites

5.3.1. An owner/operator shall limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.

5.3.2. An owner/operator shall post speed limit signs that meet State and Federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads.

5.4 Wind Generated Fugitive Dust Requirements

5.4.1 Cease outdoor construction, excavation, extraction, and other earthmoving activities that disturb the soil whenever VDE exceeds 20% opacity. Indoor activities such as electrical, plumbing, dry wall installation, painting, and any other activity that does not cause any disturbances to the soil are not subject to this requirement.

5.4.2 Continue operation of water trucks/devices when outdoor construction excavation, extraction, and other earthmoving activities cease, unless unsafe to do so.

6.0 Administrative Requirements

6.1 Test Methods

The applicable test methods specified in Rule 8011 shall be used to determine compliance with this rule.

6.2 Recordkeeping

An owner/operator shall comply with the recordkeeping requirements specified in Rule 8011.

6.3 Dust Control Plan

6.3.1 An owner/operator shall submit a Dust Control Plan to the APCO prior to the start of any construction activity on any site that will include 10 acres or more of disturbed surface area for residential developments, or 5 acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. Construction activities shall not commence until the APCO has approved or conditionally approved the Dust Control Plan. An owner/operator shall provide written notification to the APCO within 10 days prior to the commencement of earthmoving activities via fax or mail. The requirement to submit a dust control plan shall apply to all such activities conducted for residential and non-residential (e.g., commercial, industrial, or institutional) purposes or conducted by any governmental entity.

6.3.2 An owner/operator may submit one Dust Control Plan covering multiple projects at different sites where construction will commence within the next 12 months provided the plan includes each project size and location, types of activities to be performed. The Dust Control Plan shall specify the expected start and completion date of each project.

6.3.3 The Dust Control Plan shall describe all fugitive dust control measures to be implemented before, during, and after any dust generating activity.

6.3.4 A Dust Control Plan shall contain all the information described in Section 6.3.6 of this rule. The APCO shall approve, disapprove, or conditionally approve the Dust Control Plan within 30 days of plan submittal. A Dust Control Plan is deemed automatically approved if, after 30 days following receipt by the District, the District does not provide any comments to the owner/operator regarding the Dust Control Plan.

6.3.5 An owner/operator shall retain a copy of an approved Dust Control Plan at the project site. The approved Dust Control Plan shall remain valid until the termination of all dust generating activities. Failure to comply with the provisions of an approved Dust Control Plan is deemed to be a violation of this rule. Regardless of whether an approved Dust Control Plan is in place or not, or even when the owner/operator responsible for the plan is complying with an approved Dust Control Plan, the owner/operator is still subject to comply with all requirements of the applicable rules under Regulation VIII at all times.

6.3.6 A Dust Control Plan shall contain all of the following information:

6.3.6.1 Name(s), address(es), and phone number(s) of person(s) and owner(s)/operator(s) responsible for the preparation, submittal, and implementation of the Dust Control Plan and responsible for the dust generating operation and the application of dust control measures.

6.3.6.2 A plot plan which shows the type and location of each project.

6.3.6.3 The total area of land surface to be disturbed, daily throughput volume of earthmoving in cubic yards, and total area in acres of the entire project site.

6.3.6.4 The expected start and completion dates of dust generating and soil disturbance activities to be performed on the site.

6.3.6.5 The actual and potential sources of fugitive dust emissions on the site and the location of bulk material handling and storage areas, paved and unpaved roads; entrances and exits where carryout/trackout may occur; and traffic areas.

6.3.6.6 Dust suppressants to be applied, including: product specifications; manufacturer's usage instructions (method, frequency, and intensity of application); type, number, and

capacity of application equipment; and information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application.

6.3.6.7 Specific surface treatment(s) and/or control measures utilized to control material carryout, trackout, and sedimentation where unpaved and/or access points join paved public access roads.

6.3.6.8 At least one key individual representing the owner/operator or any person who prepares a Dust Control Plan must complete a Dust Control Training Class conducted by the District. The District will conduct Dust Control Training Classes on an as needed basis.

6.4 District Notification of Earthmoving Activities on Smaller Construction Sites

6.4.1 On residential development construction sites ranging from 1.0 to less than 10.0 acres in area, an owner/operator shall provide written notification to the District at least 48 hours prior to his/her intent to commence any earthmoving activities.

6.4.2 On non-residential development construction sites ranging from 1.0 to less than 5.0 acres in area, an owner/operator shall provide written notification to the District at least 48 hours prior to his/her intent to commence any earthmoving activities.

RULE 8031 BULK MATERIALS (Adopted November 15, 2001; Amended August 19, 2004)

1.0 Purpose

The purpose of this rule is to limit fugitive dust emissions from the outdoor handling, storage, and transport of bulk materials.

2.0 Applicability

This rule applies to the outdoor handling, storage, and transport of any bulk material. The provisions of this rule adopted on November 15, 2001 shall remain in effect until October 1, 2004 at which time the amendments adopted on August 19, 2004 shall take effect.

3.0 Definitions

The definitions of terms in Rule 8011 (General Requirements) shall apply to this rule.

4.0 Exemptions

In addition to the exemptions established in Rule 8011 the following exemptions are established for this Rule:

4.1 Any outdoor storage, handling, or transport of bulk materials which would be damaged by wetting with water or by the application of chemical/organic dust suppressants, provided owners/operators demonstrate to the satisfaction of the APCO and USEPA that none of the control measures specified in Table 8031-1 of this rule can be implemented to limit visible dust emissions (VDE) to 20% opacity or provide a stabilized surface as defined in Rule 8011.

4.2 The spreading of landfill daily cover.

4.3 Transport of a bulk material in an outdoor area for a distance of twelve feet or less with the use of a chute or conveyor device.

4.4 Outdoor storage of any bulk material at a single site where no material is actively being added or removed at the end of the workday or overnight and where the total material stored is less than 100 cubic yards.

4.5 Agricultural sources subject to, or specifically exempt from, the requirements of Rule 8081 (Agricultural Sources).

5.0 Requirements

No person shall perform any outdoor handling, storage, and transport of bulk materials unless the appropriate requirements in Table 8031-1 of this rule are sufficiently implemented to limit VDE to 20% opacity or to comply with the conditions for a stabilized surface as defined in Rule 8011. In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII.

TABLE 8031-1 – CONTROL MEASURES FOR BULK MATERIALS
A. HANDLING OF BULK MATERIALS: A1 When handling bulk materials, apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity or; A2 Construct and maintain wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, control measure A1 shall also be implemented
B. STORAGE OF BULK MATERIALS: B1 When storing bulk materials, comply with the conditions for a stabilized surface as defined in Rule 8011; or B2 Cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action; or B3 Construct and maintain wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, apply water or chemical/organic stabilizers/suppressants to limit VDE to 20% opacity or; B4 Utilize a 3-sided structure with a height at least equal to the height of the storage pile and with less than 50% porosity.
C. ON-SITE TRANSPORTING OF BULK MATERIALS: C1 Limit vehicular speed while traveling on the work site sufficient to limit VDE to 20% opacity; or C2 Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported across any paved public access road sufficient to limit VDE to 20% opacity, or C3 Apply water to the top of the load sufficient to limit VDE to 20% opacity, or C4 Cover haul trucks with a tarp or other suitable cover.
D. OFF-SITE TRANSPORTING OF BULK MATERIALS: D1 Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and D2 Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate; and D3 Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported on any paved public access road, and apply water to the top of the load sufficient to limit VDE to 20% opacity; or cover haul trucks with a tarp or other suitable cover.

TABLE 8031-1 - CONTROL MEASURES FOR BULK MATERIALS
E. OUTDOOR TRANSPORT OF BULK MATERIALS WITH A CHUTE OR CONVEYOR: E1 Fully enclose the chute or conveyor; or E2 Operate water spray equipment that sufficiently wets materials to limit VDE to 20% opacity; or E3 Wash separated or screened materials to remove conveyed materials having an aerodynamic diameter of 10 microns or less sufficient to limit VDE to 20% opacity.

6.0 Administrative Requirements

6.1 Test Methods

The applicable test methods specified in Rule 8011 shall be used to determine compliance with this rule.

6.2 Recordkeeping

An owner/operator shall comply with the recordkeeping requirements specified in Rule 8011.

RULE 8041 CARRYOUT AND TRACKOUT (Adopted November 15, 2001; Amended August 19, 2004)

1.0 Purpose

The purpose of this rule is to prevent or limit fugitive dust emissions from carryout and trackout.

2.0 Applicability

This rule applies to all sites that are subject to any of the following rules where carryout or trackout has occurred or may occur on paved public roads or the paved shoulders of a paved public road: Rules 8021 (Construction, Demolition, Excavation, Extraction, and other Earthmoving Activities), 8031 (Bulk Materials), 8061 (Paved and Unpaved Roads), and 8071 (Unpaved Vehicle and Equipment Traffic Areas) The provisions of this rule adopted on November 15, 2001 shall remain in effect until October 1, 2004 at which time the amendments adopted on August 19, 2004 shall take effect.

3.0 Definitions

The definitions of terms in Rule 8011 (General Requirements) shall apply to this rule.

4.0 Exemptions

In addition to the exemptions established in Rule 8011, the following exemption is also established for this rule.

4.1 Carryout and trackout caused by an Agricultural Source.

5.0 Requirements

An owner/operator shall sufficiently prevent or cleanup carryout and trackout as specified in sections 5.1 through 5.9. In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII. The use of blower devices, or dry rotary brushes or brooms, for removal of carryout and trackout on public roads is expressly prohibited. The removal of carryout and trackout from paved public roads does not exempt an owner/operator from obtaining state or local agency permits which may be required for the cleanup of mud and dirt on paved public roads.

5.1 Owners/operators shall remove all visible carryout and trackout at the end of each workday.

5.2 An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall take the actions for carryout and trackout as specified in Section 5.8.

5.3 An owner/operator subject to the requirements of a Dust Control Plan as specified in Rule 8021 (Construction, Demolition, Excavation, Extraction, and other Earthmoving Activities) shall take the actions for carryout and trackout as specified in Section 5.8.

5.4 Within urban areas or, an owner/operator shall prevent carryout and trackout, or immediately remove carryout and trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site.

5.5 Within rural areas, construction projects 10 acres or more in size, an owner/operator shall prevent carryout and trackout, or immediately remove carryout and trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site.

5.6 For sites with paved interior roads, an owner/operator shall prevent and mitigate carryout and trackout as specified in Section 5.8.

5.7 Cleanup of carryout and trackout shall be accomplished by:

5.7.1 Manually sweeping and picking-up; or

5.7.2 Operating a rotary brush or broom accompanied or preceded by sufficient wetting to limit VDE to 20% opacity; or

5.7.3 Operating a PM10-efficient street sweeper that has a pick-up efficiency of at least 80 percent as defined in Rule 8011 (General Requirements).

5.7.4 Flushing with water, if curbs or gutters are not present and where the use of water will not result as a source of trackout material or result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit program.

5.8 Carryout and trackout shall be prevented and mitigated as specified in sections 5.8.1 and 5.8.2:

5.8.1 Prevented by:

5.8.1.1 Installing and maintaining a trackout control device meeting the specifications contained in Section 5.9 at all access points to paved public roads; or

5.8.1.2 Utilizing a carryout and trackout prevention procedure which has been demonstrated to the satisfaction of the APCO and US EPA as achieving an equivalent or greater level of control than specified in Section 5.8.1.1.

5.8.2 Mitigated by:

In the event that measures specified in Section 5.8.1 are insufficient to prevent carryout and trackout, removal of any carryout and trackout must be accomplished within one-half hour of the generation of such carryout and trackout.

5.9 Specifications for Section 5.8.1 shall meet the following conditions or combination of conditions:

5.9.1 For use of grizzlies or other similar devices designed to removed dirt/mud from tires, the devices shall extend from the intersection with the public paved road surface for a distance of at least 25 feet, and cover the full width of the unpaved exit surface for at least 25 feet.

5.9.2 For use of gravel pads, coverage with gravel shall be at least one inch or larger in diameter and at least 3 inches deep, shall extend from the intersection with the public paved road surface for a distance of at least 50 feet, and cover the full width of the unpaved exit surface for at least 50 feet. Any gravel deposited onto a public paved road travel lane or shoulder must be removed at the end of the workday or immediately following the last vehicle using the gravel pad, or at least once every 24 hours, whichever occurs first.

5.9.3 For use of paving, paved surfaces shall extend from the intersection with the public paved road surface for a distance of at least 100 feet, and cover the full width of the unpaved access road for that distance to allow mud and dirt to drop off of vehicles before exiting the site. Mud and dirt deposits accumulating on paved interior roads shall be removed with sufficient frequency, but not less frequently than once per workday, to prevent carryout and trackout onto paved public roads

6.0 Administrative Requirements

6.1 Test Methods

The applicable test methods specified in Rule 8011 shall be used to determine compliance with this rule.

6.2 Recordkeeping

An owner/operator shall comply with the recordkeeping requirements specified in Rule 8011.

APPENDIX 2

NOISE AND VIBRATION

Giroux & Associates
Environmental Consultants

NOISE IMPACT ANALYSIS

BNSF LE GRAND DOUBLE TRACK PROJECT

MP 1039.93 TO MP 1056.38

SAN JOQUIN VALLEY, CALIFORNIA

Prepared for:

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Date:

April 6, 2009

Project No.: P09-009 N

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EXECUTIVE SUMMARY

The California Department of Transportation (Caltrans) Division of Rail (DOR) is seeking funding to improve rail efficiency in the San Joaquin Corridor. This study focuses on the noise impact of double-tracking 16.43 miles of BNSF track from near "M" Street in the City of Merced to Deadmans Creek within the community of Le Grand.

The virtual elimination of current idling of trains on siding tracks would improve freight delivery schedules, promote inter-city passenger travel though faster and more reliable service and decrease engine idling emissions.

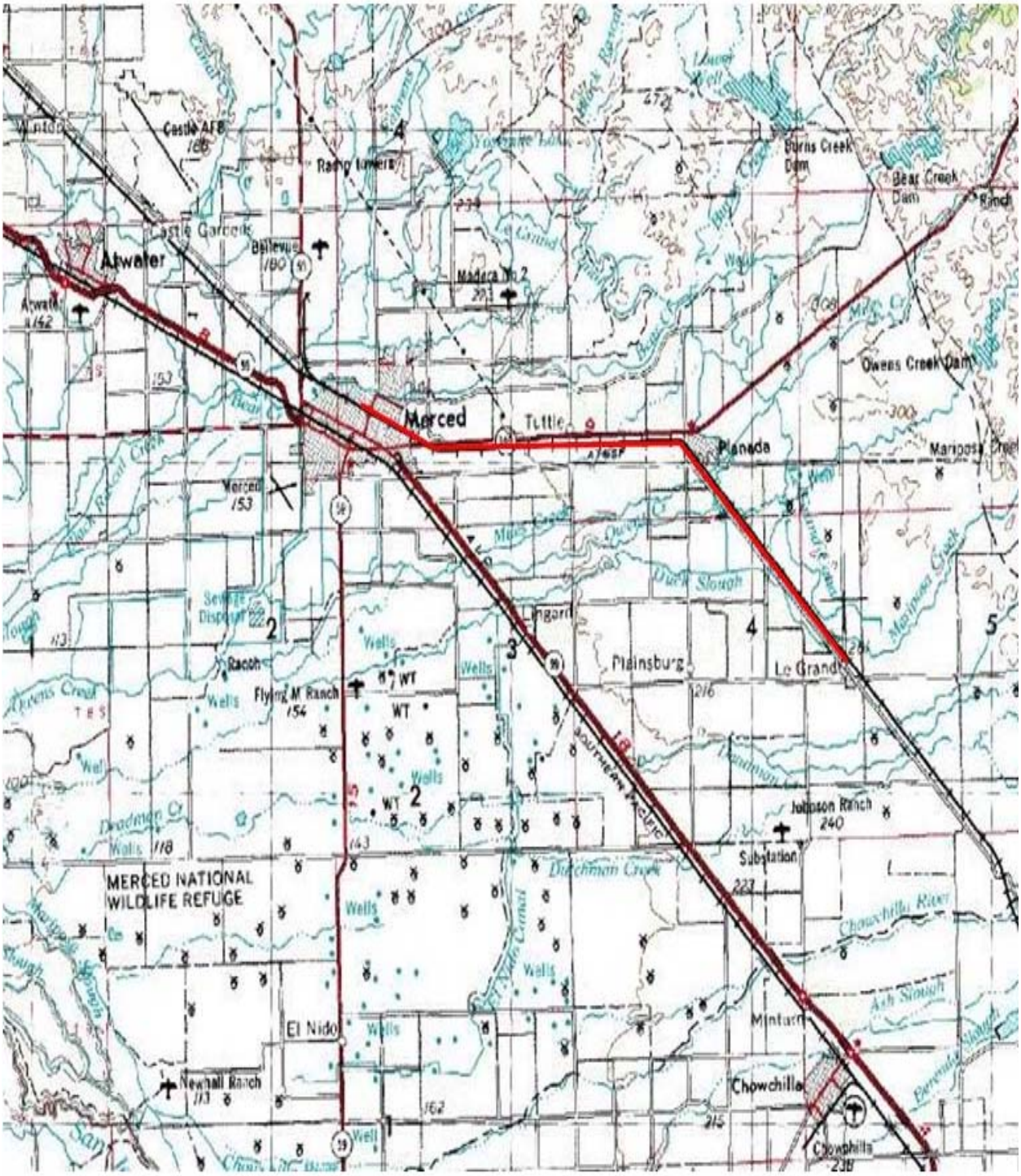
This analysis is designed to meet both NEPA and CEQA environmental clearance requirements. Under CEQA, a determination of impact significance must be made. CEQA Guidelines consider a "substantial" increase in noise levels to be potentially significant. Substantial is generally taken to mean "clearly perceptible". Under ambient conditions, the consensus level of a clearly perceptible increase is +3 dB. NEPA guidelines discourage use of the word "significance". The evaluation must consider context and intensity. For this analysis, context is the existing train noise environment. Impact intensity within this analysis is based upon anticipated change in the noise levels and any increase in the number of noise events. The Federal Transit Administration has developed noise impact guidelines for transit projects, including heavy rail. In an environment of existing noise levels in excess of recommended exposures for noise sensitive land uses, the FTA guidelines consider an increase of +0.5 dB or more to be an impact that should be further evaluated for mitigation potential.

The addition of a second track will bring the apparent centerline of noise generation a distance of 12.5 feet closer on the side with the added track. The apparent noise centerline will move farther away on the other side of the existing track. Assuming both the existing and new tracks are used equally, any existing noise-sensitive uses within 125 feet of the new track would be noise-impacted. Outside Merced, homes are generally set back from the existing track by 125 feet or more. In Merced, a double track already exists such that the noise centerline will not be relocated.

BACKGROUND

The State Department of Transportation (Caltrans) Division of Rail (DOR) is seeking federal funding for the proposed construction of portions of the San Joaquin Corridor Capacity Improvements. As a result, the Le Grand Double Tracking Project requires evaluation under the National Environmental Policy Act (NEPA). As part of its program to improve intercity passenger rail service, Caltrans is proposing to upgrade the capacity of the Burlington Northern Santa Fe Railway Company's (BNSF) existing San Joaquin Valley railroad corridor. This evaluation focuses on a 16.43 mile rail corridor segment extending from about 0.25 miles northwest of M Street within the City of Merced, southwest to about 0.04 miles northeast of Deadman's Creek within the community of Le Grand. The project alignment traverses the City of Merced and the communities of Kadota, Tuttle, Planada and Le Grand. The regional context of the San Joaquin Corridor is shown in Figure 1. The proposed vicinity detail is shown in Figure 2.

Figure 1 – Regional Context



Project Alignment

Figure 2a – Proposed Vicinity Detail (Merced – Northend)

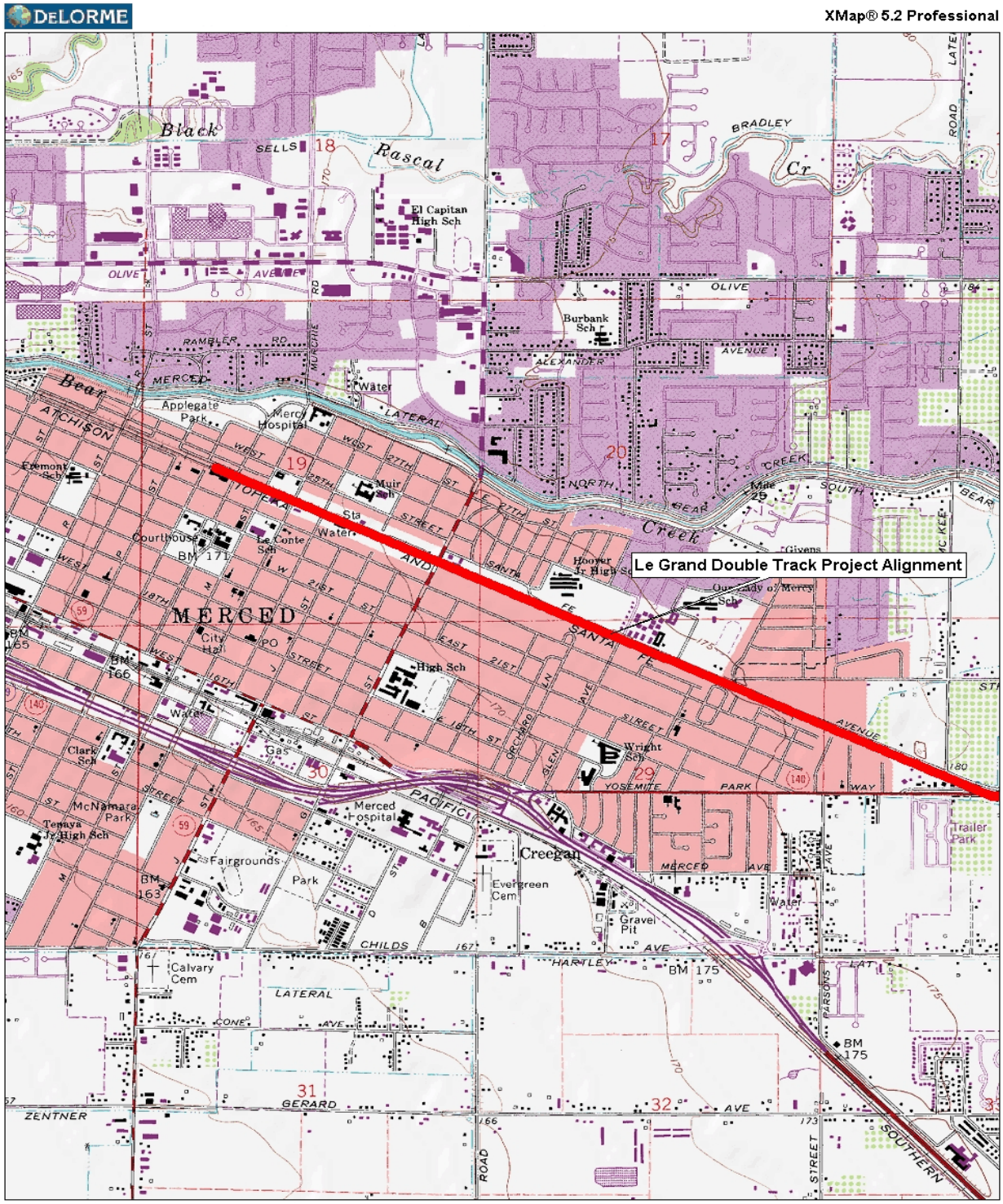


Figure 2b – Proposed Vicinity Detail (Kadota – Central West)

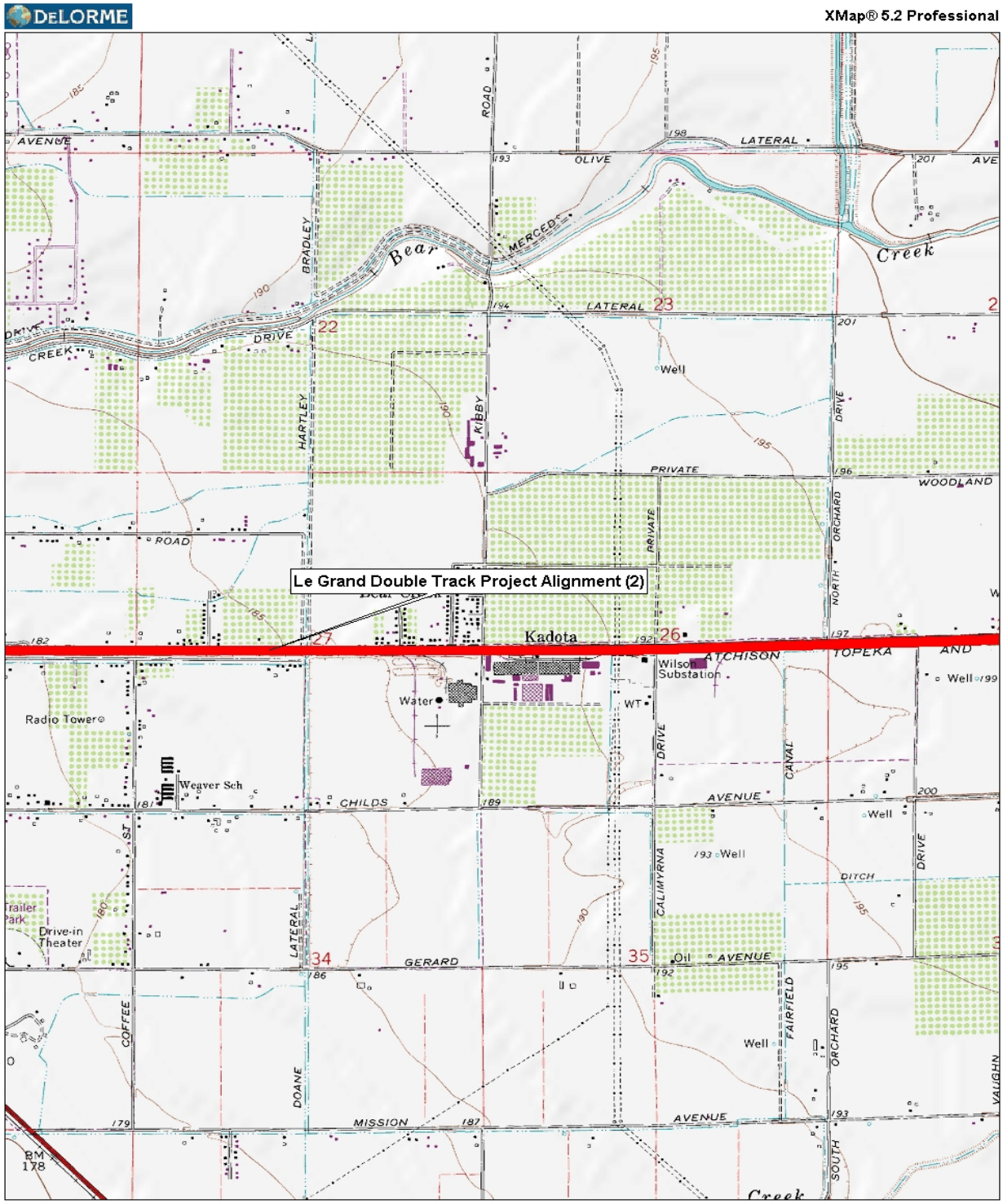


Figure 2c – Proposed Vicinity Detail (Tuttle – Central West)

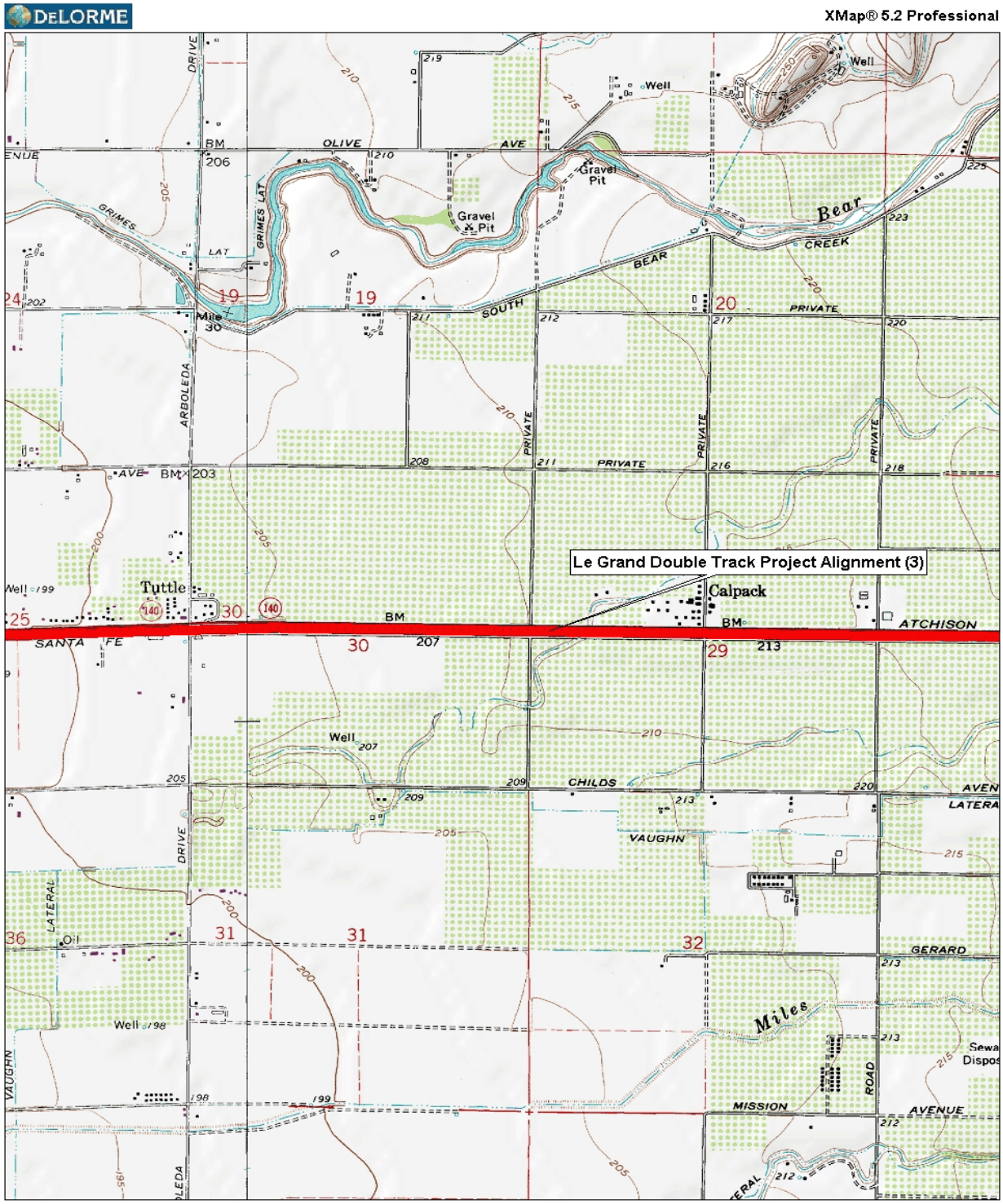


Figure 2d – Proposed Vicinity Detail (Planada)

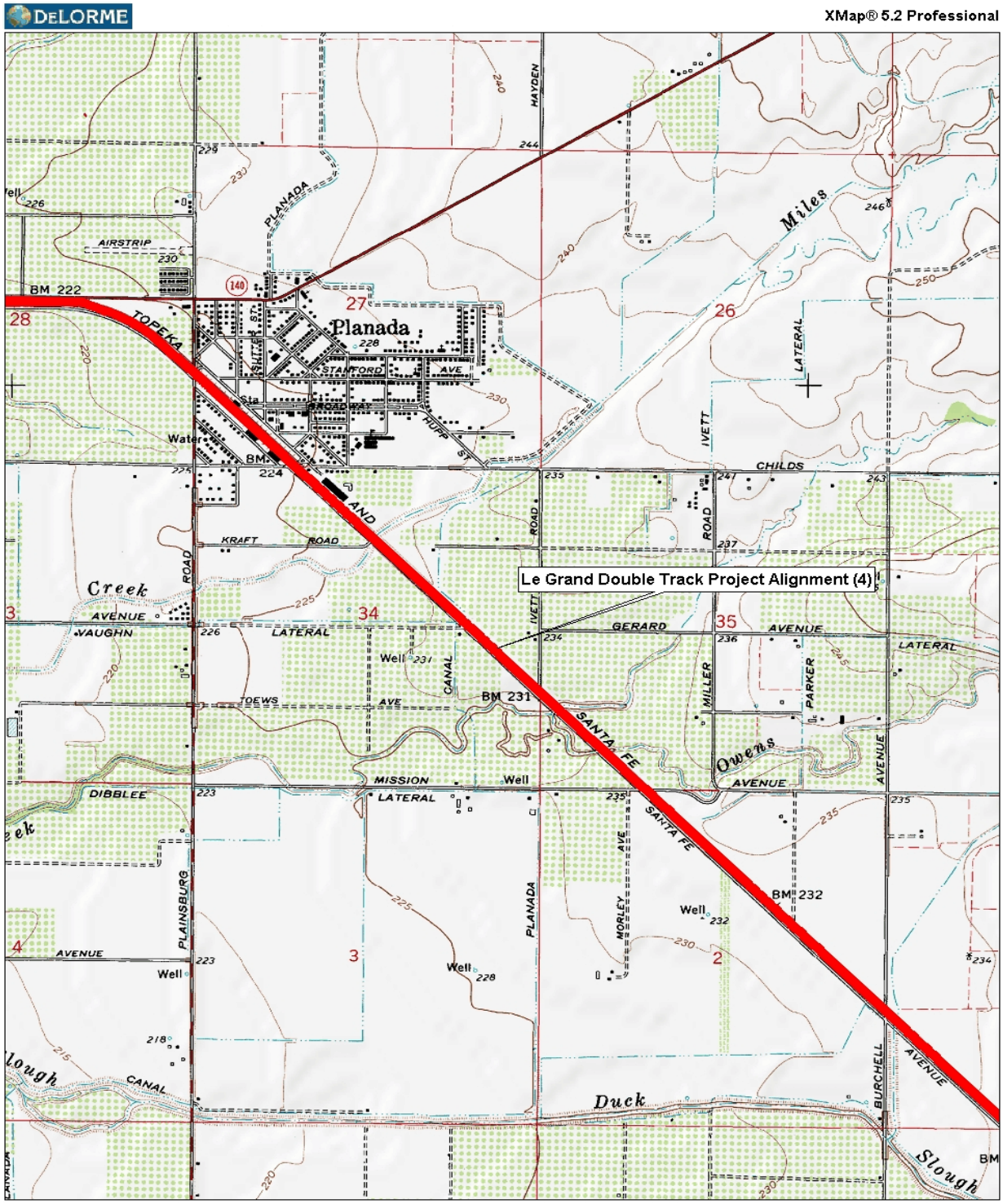


Figure 2e – Proposed Vicinity Detail (Le Grand)

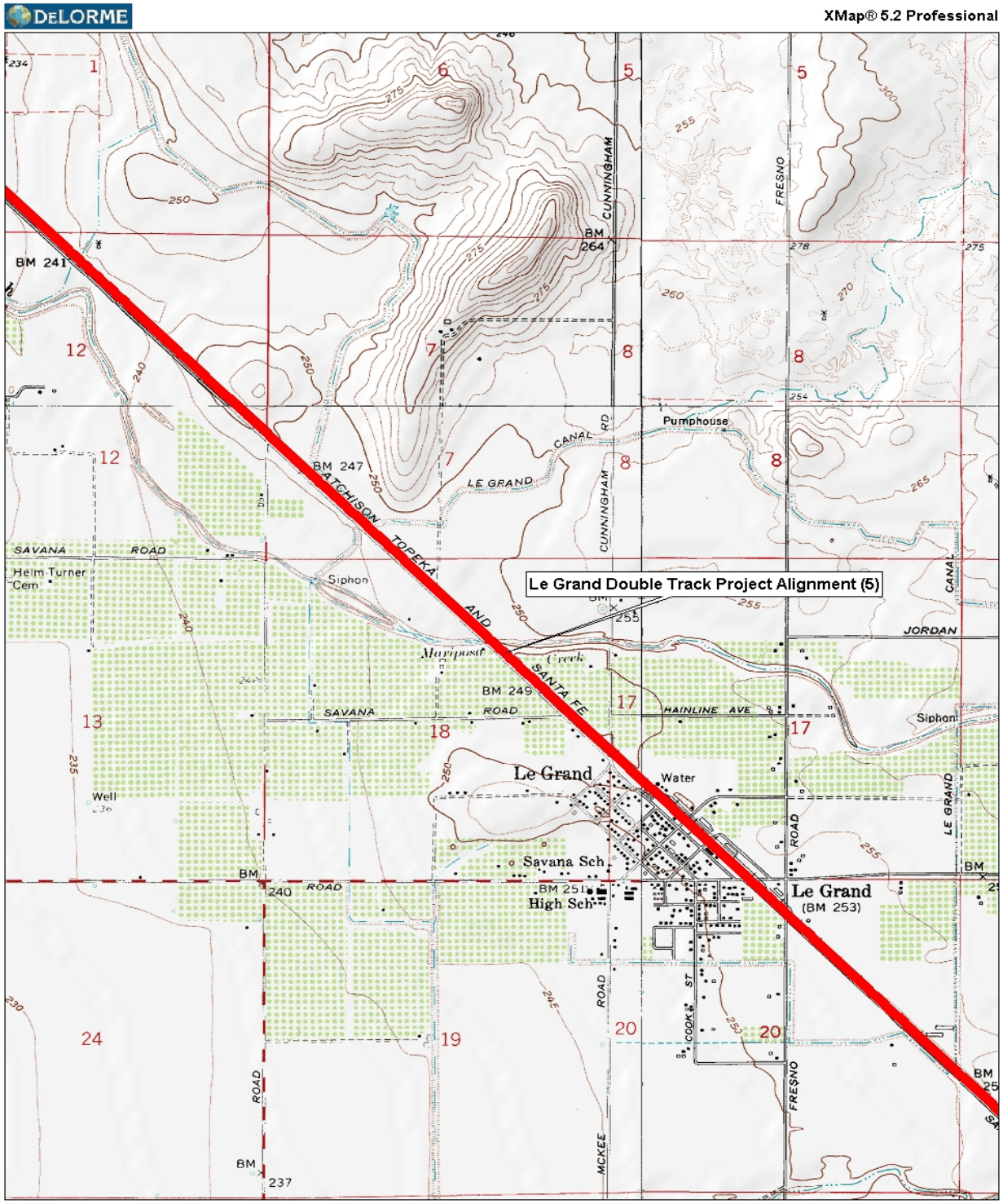
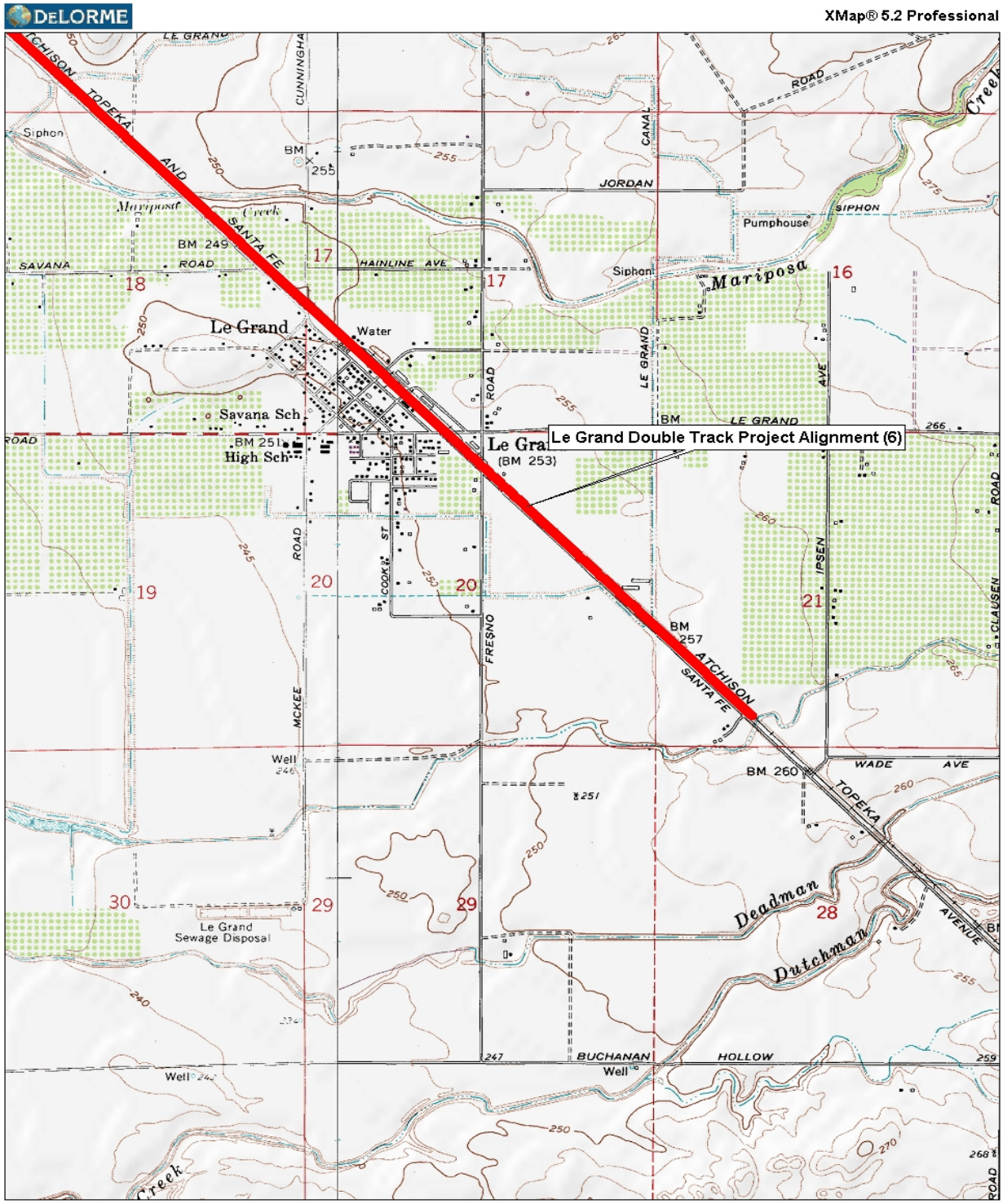


Figure 2f – Proposed Vicinity Detail (Le Grand – Southend)



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PURPOSE OF THIS STUDY

The purpose of this study is to evaluate the noise impacts of project implementation. The identified need for the project is to enhance the efficiency of rail traffic. Increased efficiencies would accomplish the following:

- Better freight delivery schedules for customers
- Increase inter-city passenger rail utilization
- Decrease engine idling on sidings at current single-track segments

Freight by rail is generally four times as pollution-efficient as trucks (600 gross-ton miles per gallon of diesel for trains versus 150 gross-ton miles per gallon for trucks). Inter-city rail is sometimes not popular because of frequent train delays. Idling trains emit air pollution with zero progress and may block cross-track on-road traffic. The purpose of the project therefore has environmental benefits within each project objective.

Project implementation would change the position of the apparent centerline of rail traffic noise generation. Rail traffic volumes are not expected to change with the availability of two tracks on this segment. Rail volumes are dependent upon a much larger number of variables than track capacity upon one single segment of the San Joaquin Corridor. The purpose of this study is to determine if changes in track geometries would create a noise impact to sensitive receivers located close to the proposed track improvements.

The proposed improvements are not anticipated to create any increase in train travel on the project segment. The addition of a second track may slightly change the mean positions of noise generation. The number of unimpeded (louder) train movements will increase slightly at those locations where some trains are forced onto sidings. However, use of sidings is characterized by prolonged engine idling noise at a fixed location, by engine power up at siding departure and rail squeal during deceleration, and by coupler banging noise during starts/stops. At non-siding locations, no change in train speed or numbers of movements is anticipated.

SCOPE OF THE STUDY

This noise impact analysis includes the following components:

- Identification of baseline conditions and thresholds
- Qualitative discussion of construction activity noise
- Quantitative analysis of noise changes form revised track geometrics
- Evaluation of project impact relative to CEQA significance thresholds
- Discussion of NEPA impacts within the context/intensity of train activity noise

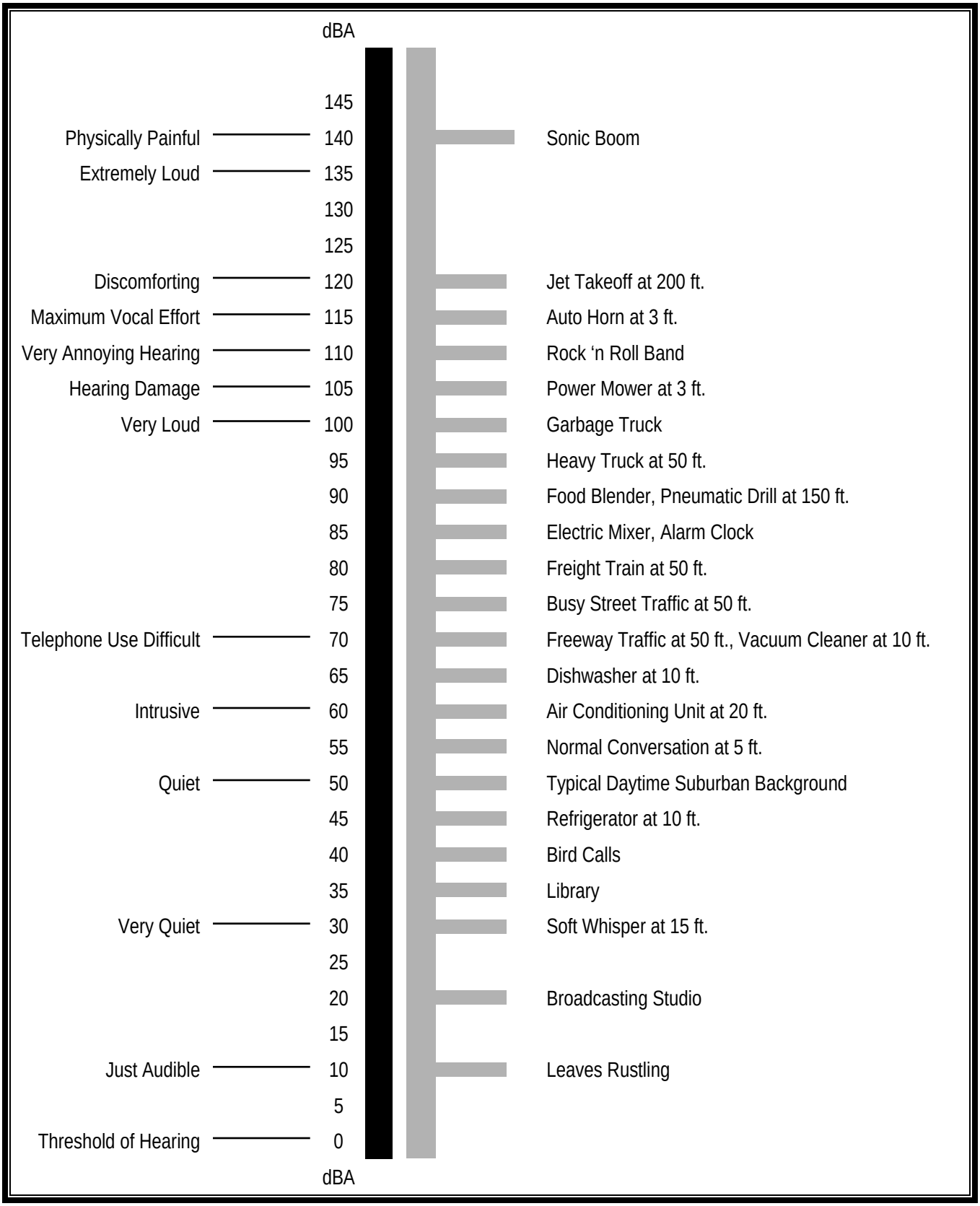
NOISE ENVIRONMENT SETTING

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, special frequency-dependent rating scales have been devised to relate noise to human sensitivity. The A-weighted decibel scale dB performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. A-weighted decibels are written as "dBA" or "dB(A)". Any reference to decibels in this report written as "dB" should be understood as being A-weighted.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquake intensity. In general, a 1-dB change in the sound pressure levels of a given sound is detectable only under laboratory conditions. A 3-dB change in sound pressure level is considered a "just detectable" difference in most ambient situations. A 5-dB change is readily noticeable and a 10-dB change is considered a doubling (or halving) of the subjective loudness. It should be noted that, generally speaking, a 3-dB increase or decrease in the average traffic noise level is realized by a doubling or halving of the traffic volume. Because few rail projects individually cause a doubling or halving of the train volumes on already heavily traveled railways, most train activity noise impacts tend to be cumulative in nature.

In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; 20 dB higher, four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud.) Examples of various sound levels in different environments are shown in Table 1 - Sound Levels and Human Response.

Table 1
Sound Levels and Human Response



Source: Adapted from William Bronson, *"Ear Pollution,"* California Health (October 1971), p. 29.

NOISE SCALES

There are three general methods used to measure sound over a period of time: the Community Noise Equivalent Level (CNEL), the equivalent energy level (LEQ), and the Day/Night Average Sound Level (Ldn).

CNEL: The predominant community noise rating scale used in California for land use compatibility assessment is the Community Noise Equivalent Level (CNEL). The CNEL reading represents the average of 24-hourly readings of equivalent levels, known as LEQs, based on an A-weighted decibel with upward adjustments added to account for increased noise sensitivity in the evening and night periods. These adjustments are +5 dB in the evening (7:00 p.m. to 10:00 p.m.), and +10 dB for the night (10:00 p.m. to 7:00 a.m.). CNEL may be indicated by "dB CNEL" or just "CNEL."

Leq: The LEQ is the sound level containing the same steady-state total energy over a given sample time period as a continuously varying ambient level. The LEQ can be thought of as the steady (average) sound level which, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. LEQ is typically computed over 1, 8, and 24-hour sample periods.

Ldn: Another commonly used method is the day/night average level or Ldn. The Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by the United States Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the LEQ. The Ldn is calculated by averaging the LEQs for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 p.m. to 7:00 a.m.), by a 10 dB to account for the increased sensitivity of people to noises that occur at night. In most applications, CNEL and Ldn are generally indistinguishable.

OTHER NOISE METRICS

The maximum noise level recorded during a noise event is typically expressed as Lmax. The sound level exceeded over a specified time frame can be expressed as Ln (i.e., L_{90}, L_{50}, L_{10}, etc.). L_{50} equals the level exceeded 50 percent of the time.

NOISE STANDARDS

State of California Guideline: The State of California has established guidelines for acceptable community noise levels that are based on the CNEL rating scale. The guidelines rank noise land use compatibility in terms of "normally acceptable," "conditionally acceptable," and "clearly unacceptable" noise levels for various land use types. The City of Merced and Merced County have both adopted variations of the state noise/land use guidelines. The City guidelines are based upon the CNEL metric while the County's General Plan Noise Element uses the Ldn metric. As noted above, CNEL and Ldn are generally identical. The State Guidelines in Table 2, Land Use Compatibility for Community Noise Exposure, single-family homes are "normally acceptable" in exterior noise environments up to 60 dB CNEL and "conditionally acceptable" up to 70 dB CNEL based on this scale. Multiple family residential uses are "normally acceptable" up to 65 dB CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries and churches are "normally acceptable" up to 70 dB CNEL, as are office buildings and business, commercial and professional uses.

The City of Merced has adopted a goal of 60 dB CNEL in any usable outdoor space for new residential uses. Levels up to 65 dB CNEL are acceptable if all reasonable mitigation has been exhausted to reach 60 dB CNEL. The City's Noise Element makes one additional exception for new residential development near the BNSF tracks. Levels of 70 dB CNEL in outdoor recreational space are acceptable for new homes near the tracks if the integrated time period of elevated noise is within specified limits. There is also a requirement for achieving interior noise goals for new homes near the tracks. Although these standards apply to new homes, they are a reasonable analysis threshold for existing homes as well. County noise standards do not make any provision for proximity to the train tracks in establishing noise exposure goals.

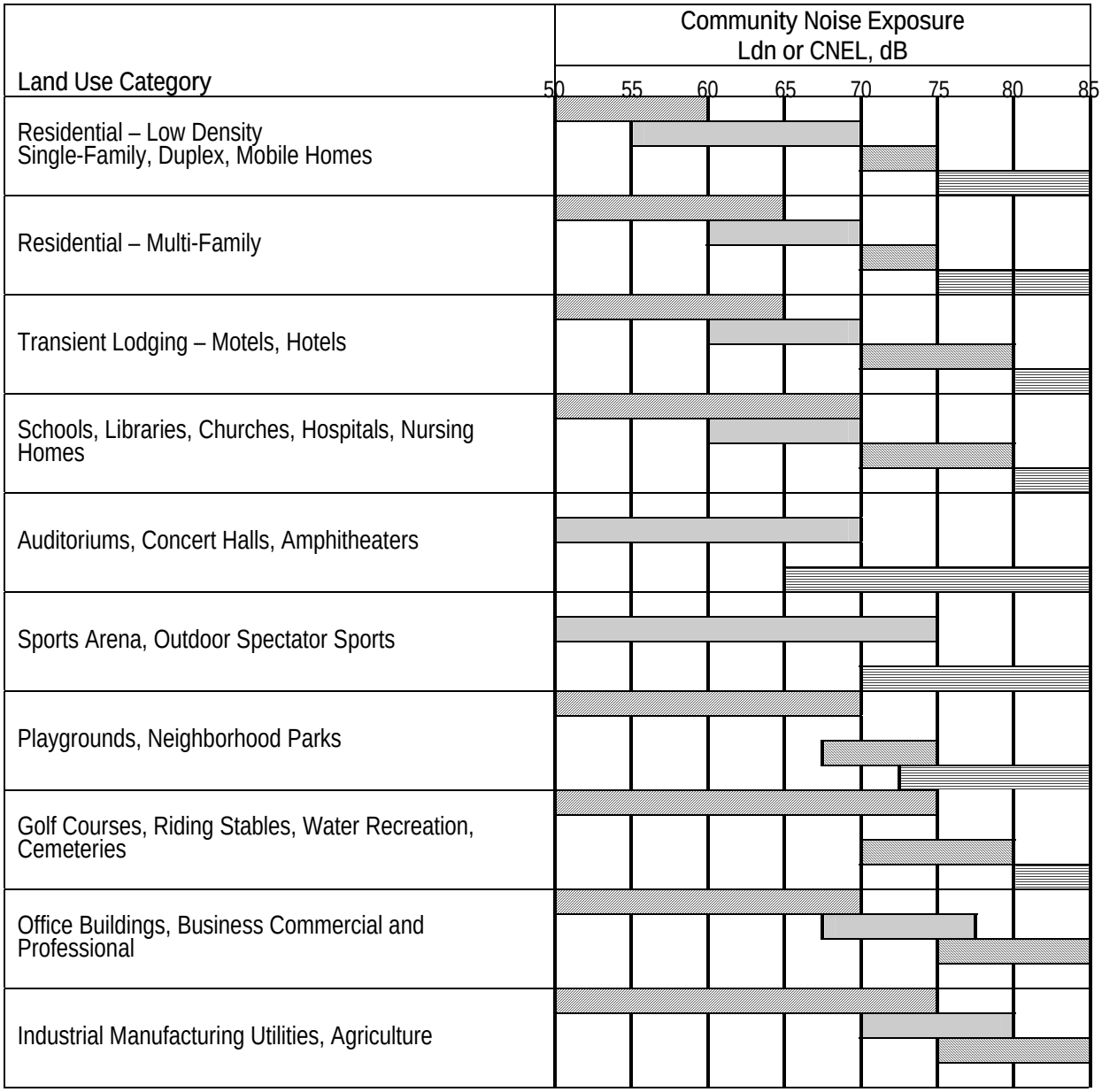
Federal Guidelines: Noise standards promulgated by various agencies differ somewhat from one agency to another. The Federal Highway Administration (FHWA) has adopted Noise Abatement Criteria (NAC) which are based upon the noisiest single hour of the day (Leq[1]). Exterior noise levels of 67 dB Leq in usable outdoor space are considered the maximum desirable noise exposure for noise-sensitive land uses as shown in Table 3. If there are no exterior uses at such receiver sites, attainment of 52 dB Leq is considered the maximum desirable interior noise exposure.

The Department of Housing and Urban Development (HUD) has adopted noise standards for residential properties for which it provides funding. The HUD standards are based upon the day-night level, Ldn (which is essentially identical to CNEL). HUD Ldn standards are very similar to the State of California CNEL-based noise/land use compatibility criteria shown in Table 2. A noise exposure of 60 dB Ldn in usable outdoor space is considered most desirable, and considered conditionally acceptable up to 65 dB Ldn. If there are no exterior uses which require noise protection, and interior exposure of 45 dB Ldn is the target for habitable interior rooms.

The Federal Transit Administration (FTA) has adopted noise evaluation criteria that incorporate both the peak hour and the 24-hour Ldn for various categories of land uses. The FTA standards are detailed in the impact discussion.

Table 2

Land Use Compatibility for Community Noise Environments



INTERPRETATION

Normally Acceptable: Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: State of California Governor's Office of Planning and Research, General Plan Guidelines, 1990.

Table 3

FHWA Noise Abatement Criteria

(The noise abatement criteria specified by the FHWA are presented in terms of the maximum one hour Equivalent Noise Level (Leq).

Activity Category	Noise Abatement Criteria Level – Leq	Description of Activity Category
A	57 (exterior)	Tracts of land in 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 serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of open spaces, or historic districts which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas and parks which are not included in Category A and residences, motels, hotels, public meeting rooms, schools, churches, libraries, and hospitals.
D	72 (exterior)	Developed lands, properties or activities not included in Category A or B above.
C	-	Undeveloped lands.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

EXISTING NOISE ENVIRONMENT

The proposed project "site" is a 16.43-mile span of railway track starting at the City of Merced and extending to the Community of Le Grand. Much of the rail segment is surrounded by rural agricultural lands. However, there are noise sensitive uses located close to the tracks in the City of Merced, and in the communities of Kadota, Tuttle, Planada and Le Grand.

Noise measurements were previously conducted along a portion of the San Joaquin Corridor near the community of Escalon in San Joaquin County. The levels of train traffic and train operating characteristics have changed little in the past decade. The numbers of trains in the previous (2002) study are similar to activity on the proposed Le Grand double-track project. These measurements are considered representative of existing project site noise exposures. Of the four measurements sites shown in Table 4, Site 1 at 50 feet from the BNSF tracks is the most representative of the proposed project's acoustic environment.

The measurements showed train noise exposures of 77 dB (CNEL/Ldn) at 50 feet from the track centerline. The peak noise hour was 76 dB Leq. Most importantly, however, is that the peak noise hour was generally from 1-2 a.m. It also appears that 20+ hours per day have train activity. Although the number of single events is limited to perhaps 40-50 train movements per day, each event is individually loud, and many occur in the middle of the night during greatest noise sensitivity. Because each nocturnal noise event is penalized by a factor of ten in the CNEL/Ldn calculation, the calculated CNEL (CEQA Standard) is higher than the peak noise hour (NEPA standard).

Table 4
BNSF Noise Monitoring Summary (dBA)

Time	Site 1(50')		Site 2 (36')		Site 3 (36')		Site 4 (45')	
	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
00-01	72	84	50	61	47	61	59	77
01-02	76[a]	96	77[a]	96	74[a]	96	77[a]	96
02-03	46	61	47	60	42	60	56	78
03-04	69[a]	91	73[a]	94	72[a]	96	74[a]	96
04-05	66[a]	92	68[a]	93	69[a]	96	71[a]	96
05-06	55	69	55	67	51	61	62	82
06-07	73[a]	96	74[a]	96	73[a]	95	77[a]	96
07-08	70[a]	94	71[a]	93	70[a]	91	75[a]	96
08-09	60[b]	87	62[b]	88	62[b]	90	67[b]	92
09-10	69[a]	91	72[a]	89	71[a]	95	75[a]	94
10-11	61[b]	88	63[b]	91	60[b]	85	66[b]	91
11-12	71[a]	93	73[a]	94	70[a]	91	76[a]	96
12-13	66[a]	90	71[a]	95	69[a]	93	74[a]	94
13-14	70[a]	96	72[a]	95	71[a]	92	75[a]	93
14-15	68[a]	92	71[a]	96	71[a]	96	70[a]	93
15-16	69[a]	93	72[a]	96	71[a]	92	73[a]	93
16-17	68[a]	94	70[a]	87	70[a]	92	74[a]	90
17-18	65[b]	93	68[b]	94	63[b]	87	69[b]	93
18-19	73[a]	96	76[a]	95	74[a]	95	77[a]	96
19-20	57[b]	82	61[b]	87	62[b]	88	67[b]	91
20-21	72[a]	95	75[a]	96	74[a]	95	77[a]	96
21-22	53[b]	70	67[b]	96	65[b]	93	65[b]	91
22-23	66[a]	89	69[a]	94	67[a]	92	73[a]	96
23-24	74[a]	94	77[a]	96	76[a]	96	79[a]	96
24-Hr. CNEL	77	-	79	-	78	-	81	-

Distances are from the center of an existing double track geometry

[a]One or more freight trains during this hour.
[b]Less intense rail movement (switching, passenger?)

NOISE IMPACT ASSESSMENT

The BNSF Track Improvement project will generate two sources of noise along its alignment: temporary construction activity noise and railway service noise. No increase in railway service will occur as a result of project implementation. Any operational emissions impacts would derive from a slight relocation of the rail center-line, from possible speed increases associated with reduced delay at existing sidings, and from possible future rail traffic growth.

IMPACT SIGNIFICANCE CRITERIA (CEQA THRESHOLDS OF SIGNIFICANCE)

A project is considered to have a significant noise impact where it causes an adopted noise standard to be exceeded for the project site or for adjacent sensitive receivers. A substantial increase in an environment where noise standards are already exceeded would also be considered a significant impact. In addition to being concerned about the absolute noise level that might occur when a new source is introduced into an area, it is also important to consider the existing noise environment. If the existing noise environment is quiet and the new noise source greatly increases the noise exposure, even though a criterion level might not be exceeded, an impact may occur. Lacking adopted standards for evaluating such impacts, general rules of thumb for community noise environments are that a change of 5 dB or more is readily noticeable and, therefore, is considered a significant impact. Changes between 3 and 5 dB may be noticed by some individuals and are, therefore considered to constitute a substantial increase since under these conditions sporadic complaints may occur. Changes in community noise levels of 3 dB(A) or less are normally less noticeable and therefore considered less-than-significant with respect to CEQA guidelines.

FEDERAL NOISE IMPACT CRITERIA

The Federal Transit Administration (FTA) has developed guidelines for noise/vibration impact assessment from heavy rail projects. In the absence of definitive guidance for general rail project impact assessment, the FTA's Transit Noise and Vibration Impact Assessment (DOT-T-95-16, 1995) has been presumed applicable to the proposed project as well.

FTA guidelines define three classes of land uses where noise exposure should be evaluated, and the guidelines specify the change in noise levels that would have no impact, limited impact and definite impact. The project alignment has Category 2 land uses within its potential noise impact corridor of 375 feet (FTA Manual, Table 4-1, Rail Mainline). Category 2 uses are residences. These occur mainly in the City of Merced and unincorporated communities in Kadota, Tuttle, Planada and Le Grand. Category 1 uses (amphitheaters, concert pavilions, etc) do not occur near the track. Category 3 uses (schools, libraries, churches, etc) occur at few locations. However, any noise impacts are addressed in terms of the more stringent Category 2 noise standards.

The measured peak hour Leq at 50 feet from the BNSF track centerline was 76 dB. Table 5 shows the range of noise increments that would represent various impact criteria. Because the residential (Category 2) uses in various communities close to the tracks already have high baseline noise conditions, even a small increase in noise is considered environmentally adverse. Any project-related increment of 66 dB or more would be enough to create a noise impact under FTA guidelines. This represents an allowable increase in baseline conditions of 0.5 dB or less as characterizing an impact. Because the proposed project will not of itself generate any increase in train activity, but only move existing traffic more safely and efficiently, the physical change in track location is the only direct project impact that would likely create a potential change in noise levels. Because CEQA significance guidelines of +3 dB are much less stringent, the federal (FTA) guideline is the most relevant criterion.

EFFECTS OF THE PROJECT

Noise impacts for new projects are generally divided between short-term construction and long-term operational sources. For the BNSF Track Improvement project, freight and passenger services already exist. The improvements are designed to improve inter-city and community passenger service throughout the Central Valley, move trains at more efficient speeds, and reduce engine idling and delays on side tracks. These activities may change noise conditions along the project alignment. Operational activity noise changes, plus the noise effects associated with construction, are the focus of the project noise impact analysis.

IMPACTS OF THE PROJECT

Short-Term Impacts

Impact 1: Construction-related activities associated with the transport of workers and equipment, as well as site preparation and construction would result in short-term noise impacts.

Implementation of the proposed project would involve the addition of new railroad tracks next to existing tracks in Merced County and improvements to signals and crossings. Activities associated with such construction may be a highly noticeable temporary noise source. Noise from construction activities would be generated by two primary sources during the construction phase: the on-road transport of construction materials and workers and, off-road construction itself. Since transportation of personnel and materials will occur on already traveled roadways, background noise conditions will mask any project on-road contributions. Some heavy materials delivery for track improvements is proposed to be via trains such that on-road truck noise will be limited.

Construction activities occur in various steps, each of which involves different types of equipment and a distinct noise characteristic. These steps would alter the character of the noise levels surrounding the construction sites as the project is developed. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise to be categorized according to discrete work phases, as discussed below.

Table 5
Noise Levels Defining Impact for Rail Projects (peak hour Leq)

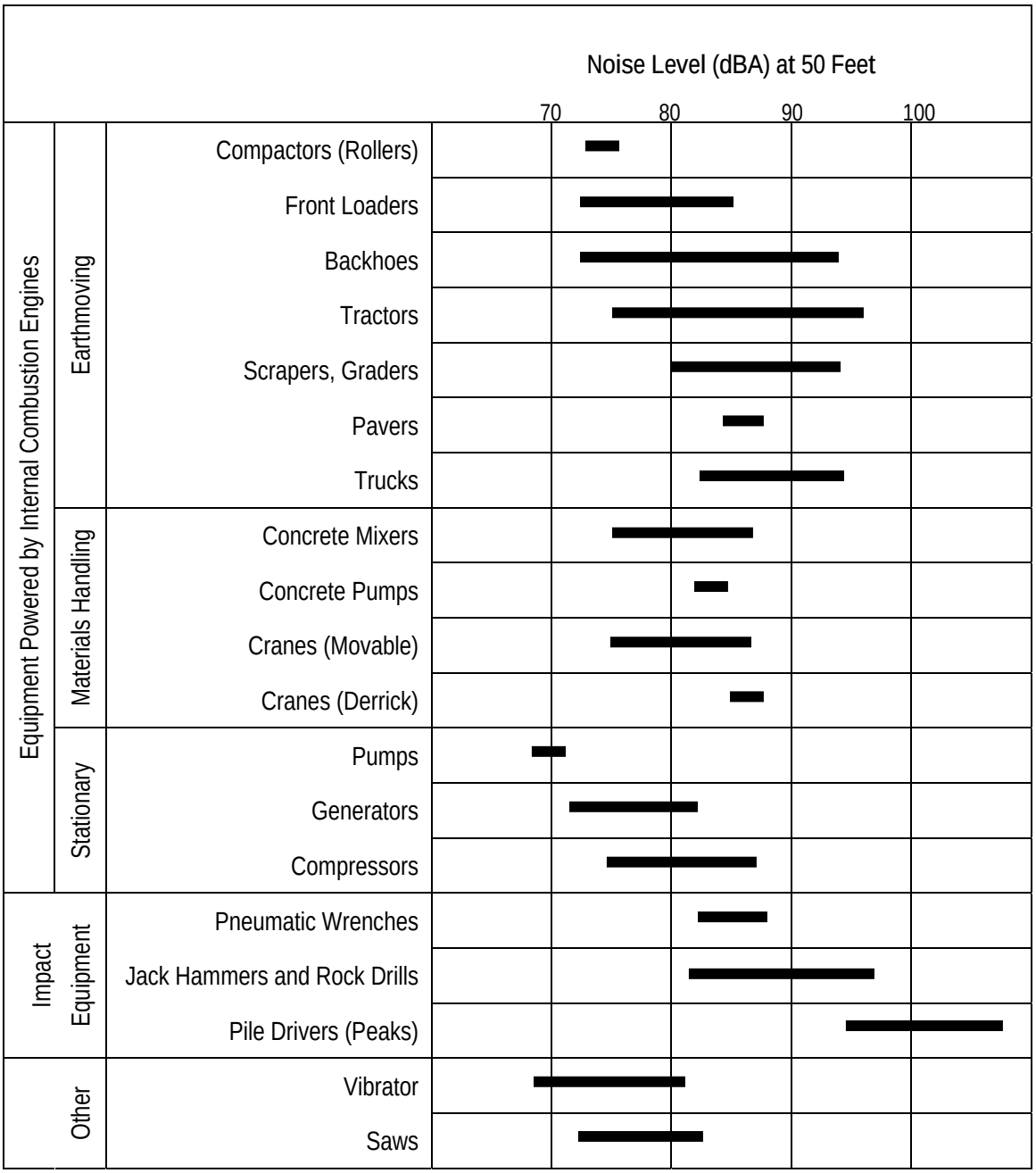
Baseline Levels	Class of Impact		
	Negligible	Moderate	Severe
65	<61	61-66	>66
70	<65	65-69	>69
72	>66	66-71	>71
74	>66	66-72	>72
76	>66	66-74	>74

Source: DOT-T-95-16, Table 3-1

Figure 3 shows the typical range of construction activity equipment noise. For track improvements, the first work phase category, earth moving and materials handling equipment to establish a new track bed, would include typical machinery such as small dozers, front loaders, etc. Typical operating cycles may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels at 50 feet from earth moving equipment typically range from 73 to 96 dB. Although noise ranges during all phases of construction are similar in level, the second phase, track laying, typically varies from 85 to 90 dB at 50 feet from the source. This activity has the potential to temporarily create clearly audible noise levels at the closest receptors due to the various power tools and equipment used in track and tie placement, welding and finishing the track. Such temporary noise levels are similar in magnitude to those already occurring many times per day from passing trains. They are not "new" noise sources within the existing acoustic environment. With implementation of recommended mitigation measures such as limiting construction hours in accordance with the City or County Codes in each project jurisdiction and the temporary nature of construction, impacts from construction activities would be reduced to a less-than-significant level.

Figure 3

Typical Construction Equipment Noise Generation Levels



Source: EPA PB 206717, Environmental Protection Agency, December 31, 1971, "Noise from Construction Equipment and Operations."

Long-Term Impacts

Impact 2: Implementation of the proposed project would result in an increase of train noise levels at noise-sensitive uses along the BNSF track.

Noise level changes due to construction and use of a second track would shift the noise generation "centroid" closer to the location of the nearest track. The effective noise generation distance (DEFF) is currently the distance to the nearest track. The addition of another track closer to the nearest noise-sensitive land use would change the effective generation location (DNEW) as:

$$DNEW = SQRT\ [DEFF \times (D-25)]$$

Application of this formula to the observed noise level would change noise levels as follows:

Distance to Nearest Existing Track (feet)	Noise Increase at Closest Homes	Net Decrease at Farther Homes
50	+1.5 dB	-0.9 dB
60	+1.2 dB	-0.8 dB
70	+1.0 dB	-0.7 dB
80	+0.8 dB	-0.6 dB
90	+0.7 dB	-0.6 dB
100	+0.6 dB	-0.5 dB
125	<0.5 dB	-0.4 dB

Any sensitive (Category 2) land use would experience an "impact" (+0.5 dB or more) if the receiver is located within 125 feet of the nearest track, and the new track is added on the receiver's side of the existing track. A noise reduction would occur on the side of the tracks father away from the new addition. There are no Category 2 receivers located so close to the existing track as to experience a noise impact solely from the addition of a second track except within the City of Merced. However, existing trackage from the Merced Wye on the southeast side of town to the end of the project limits near "M" Street is already double tracked. Little change in track utilization will occur within the city. Setbacks in various unincorporated communities are generally sufficient as to maintain noise level increases at less than +0.5 dB.

Increases in noise levels associated with continued growth on the project track segment, which is not a part of this project, will derive from the projected growth of track utilization. Given the elevated baseline levels, a relatively small increase would constitute an impact under federal guidelines. Freight train traffic increases of more than perhaps 15 percent would increase noise

by +0.6 dB, or 0.1 dB in excess of the federal guideline. The increase would be less than the +3 dB increment identified as significant under CEQA thresholds.

However, the primary anticipated growth would be in passenger and commuter rail. Such vehicles are quieter than freight trains. With the gradual conversion of the California economy from manufacturing to service and with no major anticipated change in the agricultural economy of the Central Valley, a slow future passenger increase with little change in freight traffic will likely create future train activity noise that is very similar to existing conditions. Project implementation would not substantially increase the intensity of noise events within the context of existing noise conditions.

VIBRATION IMPACT ASSESSMENT

Vibration is oscillatory movement which can be described in terms of distance displacement, vibrational velocity or acceleration. The vibration velocity is perhaps the most common vibration descriptor. The peak particle velocity (PPV) during one vibration cycle is the maximum instantaneous peak in the vibration signal. It is a good indicator of possible structural damage. The root-mean-squared (RMS) velocity is a smoothed representation of the average level of "shaking" during each vibration cycle. The human body is more sensitive to a continuous rolling or shaking motion (RMS) than it is to a single jolt (PPV).

For ease of representation, a decibel scale is used for vibration similar to the scale used for sound. The most common vibration velocity reference level in the United States is one-millionth inch/second as follows:

Vibration Velocity (in/sec)	Vibration Decibels (VdB)	Typical Source/Effect
0.000001	0	Undetectable by humans
0.000001	20	Undetectable by humans
0.0001	40	Undetectable, isolated house in the country
0.0001	60	Almost perceptible, typical suburban residence
0.01	80	Annoying, loaded truck going over large bump
0.03	90	Very annoying, bulldozer operating nearby
0.1	100	Building damage, construction blasting nearby

HUMAN PERCEPTION

The commonly accepted human threshold of perception for vibration is 65 VdB (re: 10^{-6} in/sec). The dividing line between vaguely perceptible and clearly perceptible is around 75 VdB. At 85 VdB, the vibration becomes intrusive for sleeping, reading or most other "quiet" activities. There are no adopted vibration impact criteria that have been developed and approved by appropriate agencies for purposes of environmental assessment. The Federal Transit Administration, in "Transit Noise and Vibration Impact Assessment" (1995) has developed recommended impact criteria for transit projects. In the absence of definitive standards for train activity vibration, these guidelines have been incorporated into the following discussion.

The FTA's suggested vibration impact criteria are as follows:

Land Use	Threshold	
	Frequent[1] (VdB)	Infrequent[2] (VdB)
Precision manufacturing or research	65	65
Residences with sleeping areas	72	80
Schools and other daytime-only uses	75	83

[1]More than 70 events per day.
[2]Less than 70 events per day.

The FTA Manual provides a screening distance for vibration effects. Unless there are unusual vibration propagation conditions, passage of a heavy rail passenger, commuter or freight train moving at moderate speed (50 mph) will have no perceptible impact following distances:

School classroom	120 feet from tracks
Occupied residences	200 feet from tracks

There are no classrooms within the possible vibration zone. There are, however, homes within 200 feet of the tracks. A more detailed vibration analysis is specified in the FTA Guidelines if a screening analysis cannot rule out any impact potential

VIBRATION IMPACT

The proposed project will relocate approximately one-half of existing train movements onto the new track. Although some growth in rail service is anticipated to occur over time, the proposed project does not accommodate service demand that could not be met on existing trackage. To be sure, the growth could not be accommodated as efficiently or as safely on only one existing track, but the number of vibration events would be identical with or without the project.

The vibration velocity as a function of distance from the track ("D") is expressed as follows:

$$\text{VdB (at "D")} = 78 - 20 \times \log (D/100)$$

where VdB in decibels (re: 10^{-6} in/sec) and D is expressed in feet

Inside a home, the interface between the building shell and its foundation will absorb about 5 VdB of vibrational energy. However, the resonance of the structure will amplify the net vibration by +6 dB. Within 1 dB, the vibration velocity outside the structure and within the interior are identical.

The vibration velocity impact criterion for residences is 72 VdB for frequent (>70/day) events, and 80 VdB for infrequent (<70/day) occurrences. Existing train activity is estimated at 50 train

movements per day. Existing conditions are in the "infrequent" category. A vibration velocity impact criterion of 80 VdB would be applicable to the project area. Based upon the above predictive equation, the zone of potentially perceptible vibration extends as follows:

Distance from track midpoint (feet)	Vibration velocity (VdB)
100	78
125	76
150	74.5
200	72
300	68.5
400	66

The zone of potential vibration impact is therefore less than 100 feet from the track centerline. Addition of a second mainline track will slightly change the maximum location of vibration perception, and may slightly increase the severity of individual vibration events toward the side of new track construction. The centroid of vibration generation (mainly from train locomotive) will shift by +12.5 feet for a 25-foot separation between the existing and proposed track. The potential vibration perception distance will increase toward the track side of new construction. Conversely, the number of perceptible vibration events on the side away from the new track near the fringe of the perception threshold will decrease as one-half of existing traffic is assumed to be shifted to the new track away from the closest receivers. The increased vibration magnitude of individual passbys is expressed as follows (VdB):

Existing Dist. from New Track C.L. (feet)	Toward New Track Construction	Away from New Track Construction
100	+1.2 max.	-1.0 avg.
150	+0.8 max.	-0.7 avg.
200	+0.6 max.	-0.5 avg.

An increase of +1.2 VdB is not considered a substantial increase even at 100 feet from the existing nearest track. Most existing residences are 150 feet or more from the nearest track. Their maximum increase of less than 1.0 VdB is likely an imperceptible change from current conditions. Addition of a second mainline track will not have a substantially adverse vibration effect on the closest residences along several portions of the project.

APPENDIX 3

BIOLOGICAL ASSESSMENT

BIOLOGICAL ASSESSMENT

for the

Le Grand Double Tracking

Mile Post 3510.0 to 1056.17

Submitted to:

CALTRANS
Division of Rail

In cooperation with:

BNSF RAILWAY COMPANY
Principal-in-Charge: John Fleming

Prepared by:

Lisa M. Tollstrup
TOM DODSON & ASSOCIATES
2150 North Arrowhead Avenue
San Bernardino, California 92405
(909) 882-3612

MARCH 2009

Certification: I hereby certify that the statements furnished herein and in the attached exhibits present data and information required for this Biological Assessment to the best of my ability, and the facts, statements and information presented are true and correct to the best of my knowledge and belief.

_____
Lisa M. Tollstrup
Ecologist

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INTRODUCTION AND SUMMARY OF FINDINGS

Tom Dodson & Associates (TDA) has prepared this Biological Assessment as part of the Environmental Assessment and (NEPA/CEQA document) for Caltrans Division of Rail as delegated federal authority to evaluate the effects of the proposed capacity improvements along an approximately 16.43-mile segment of the San Joaquin Valley Railroad Corridor. The proposed project is located the communities of Merced and Le Grand, in both Merced and Madera counties, California. See Figure 1 for a Regional Location Map and Figure 2-1 through Figure 2-6 for Site Location Maps.

Action Area

An action area is the area which would be either directly or indirectly affected by the proposed action. The proposed capacity improvements will be accomplished by adding a new mainline track or upgrading existing sidings for the entire length of railway between Mile Post 3510.0 and Mile Post 1056.17. All construction will occur within the BNSF right-of-way. The BNSF right-of-way through this segment ranges between 100 feet and 250 feet with the existing track or tracks going through the center of the right-of-way. The vast majority of the right-of-way is 100 feet along this segment. In areas where construction of new track is proposed, the construction will be limited to one side of the track or the other. Thus, the project limits the area of potential effect to approximately 50 feet off of the centerline of the existing track.

The Le Grand Double Tracking Project is located within the counties of Madera and Merced. The USGS topographic maps that apply to the project area are the Merced, Planada, Plainsburg, and Le Grand Quadrangles, 7.5 Minute Series topographic maps. From the north the project is located in Sections 19, 20, 29, 28, 27, 26 and 25 of Township 7 South, Range 14 East, Mount Diablo Base and Meridian (MDBM); Sections 30, 29, 28, 27, 34, and 35 of Township 7 South, Range 15 East, MDBM; Sections 2, 1, and 12 of Township 8 South, Range 15 East, MDBM; and Sections 7, 18, 17, 20, 21, and 28 of Township 8 South, Range 16 East, MDBM. As previously stated, the project area extends approximately 16.43 miles in length and is best illustrated on Figure 1 and Figures 2-1 through 2-6.

Based upon a review of the California Natural Diversity Data Base (CNDDB), the U.S. Fish and Wildlife Services (USFWS) list, and the various County General Plans, there are several listed species that occur within the vicinity of the project area, however only six species occur within the vicinity of the proposed project. These species are the San Joaquin kit fox, Valley elderberry longhorn beetle, Swainson hawk, giant garter snake, California tiger salamander, and Fresno kangaroo rat. The vast majority of the area adjacent to the track along the proposed double tracking segment is highly disturbed and does not support native plant communities and is not likely to support these species. See Table 2 for a complete list of species with potential to occur within the project area, and the probability of occurrence within the project APE.

The railroad beds are, for the most part, maintained vegetation-free in accordance with the federal regulations. Most of the drainage crossings were active irrigation ditches which have been excavated out of uplands for the purpose of irrigation and are not subject to regulation by the U.S. Army Corps of Engineers (COE) or the California Department of Fish and Game (CDFG).

There are four crossings that will require either culvert extensions or bridge construction, jurisdictional waters, and streambeds. These crossings will likely require a permit from the COE, CDFG, and the State Regional Water Quality Control Board. The need for permits at these locations will depend upon the methodology of crossings construction. The following is a table of the channel locations and their approximate size. Figures 4-1 through 4-4 depict each of these crossings with the proposed new structures.

Table 1
WATERS/STREAMBEDS/WETLANDS FROM STOCKTON TO ESCALON

Location	Type of Activity	Estimated Permanent Impacts
MP 1042.25	Mariposa Creek	0.13 acre
MP 1045.90	Owens Creek	0.01 acre
MP 1049.30	Unnamed Channel	0.001 acre
MP 1052.94	Unnamed Channel	0.003 acre

The focus of this assessment was to determine the presence or absence of listed species within the project area. The results of these surveys are that listed species, species of special concern, signs indicating past use, or designated critical habitat were observed within the area of potential effect of the project. Because there are no listed species within the proposed double-track area, and the site is not located within designated critical habitat, a formal consultation with the USFWS or the CDFG is not likely to be required. BNSF may wish to consult with USFWS informally. This project will not adversely affect these species.

Although there were no listed species observed within the project area, it is recommended the following “best management practices” be implemented to ensure a species of special concern does not enter the site unnoticed during construction.

1. Designation of an Environmental Site Manager (ESM) to coordinate all activities and reporting to the regulatory agencies. The ESM should be an individual who is knowledgeable of endangered species.

2. Retention of a qualified biological monitor for all construction and construction-related activities within Mariposa Creek to ensure no species enter the site.

3. Require all personnel associated with the construction and maintenance of the facility to attend a worker education program (WEP) class. This class should include general information regarding the sensitive biological resources on the site, Federal and State laws regarding the listed species, and their responsibilities when working in sensitive habitat.

4. Implementation of standard procedures should be followed by construction personnel while working in a sensitive biological habitat, including controlled speeds and trash collection.

5. Construction of silt fencing buried approximately 4 inches below the ground around the limits of construction in order to exclude reptiles and amphibians from the construction areas.

Thus, based on the field survey and site conditions, no listed, candidate, sensitive or special status species were observed within the project area of effect, so no potential adverse impact to such species can result from project implementation. No mitigation for listed species is recommended.

FIGURE 1 – Regional Location Map

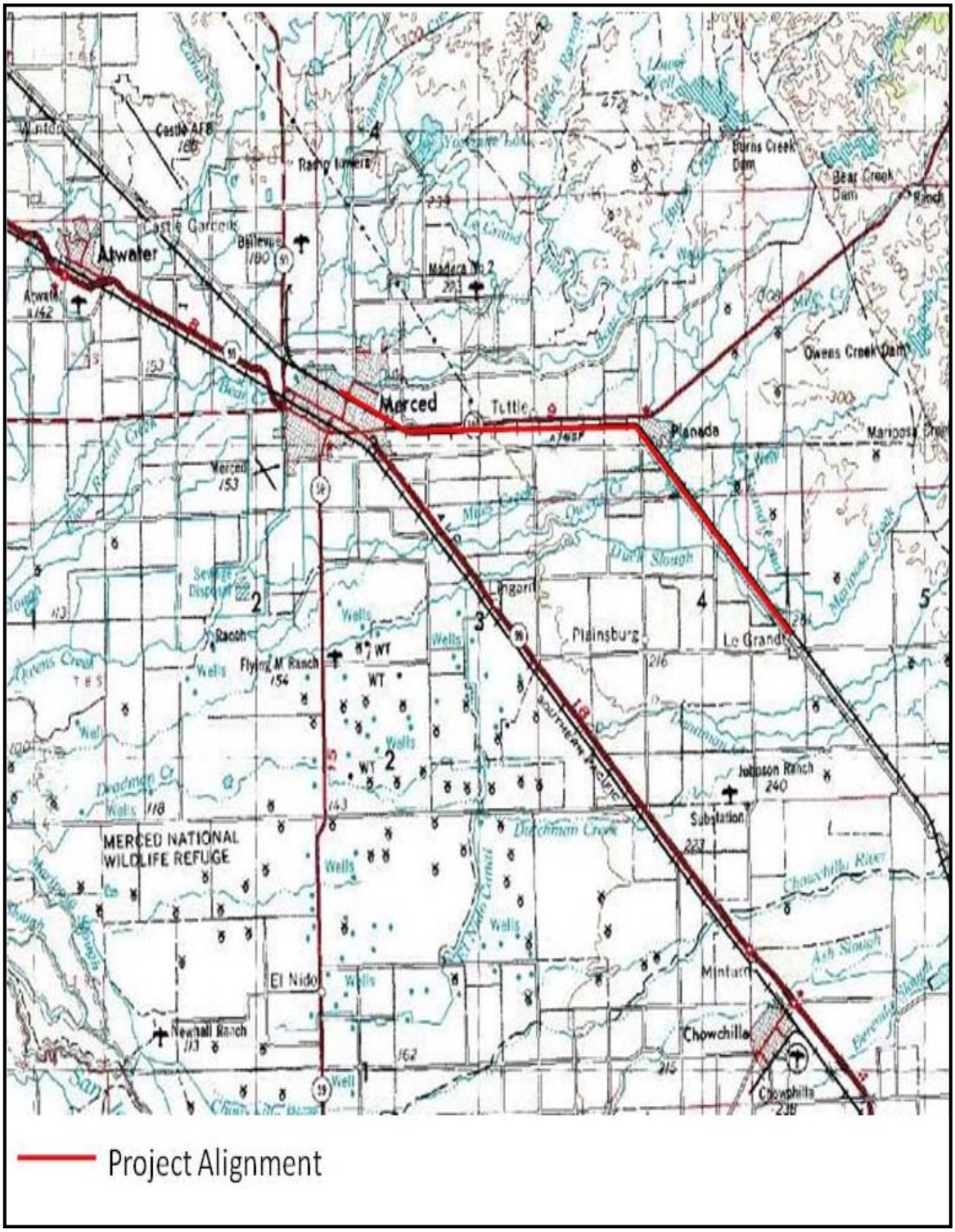


FIGURE 2-1 – Site Location Map (Merced to North End)

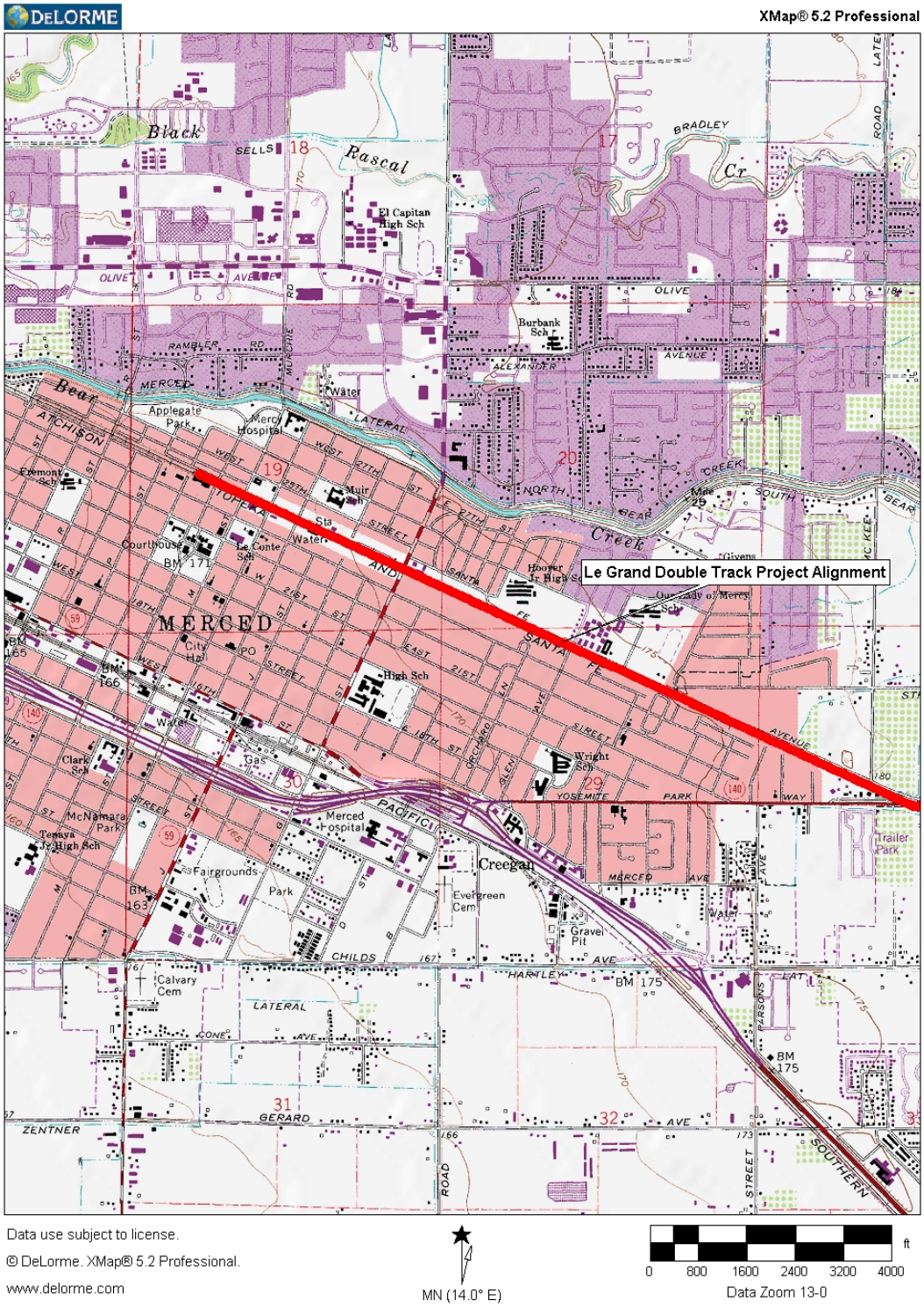


FIGURE 2-2 – Site Location Map (Kadota to Central West)

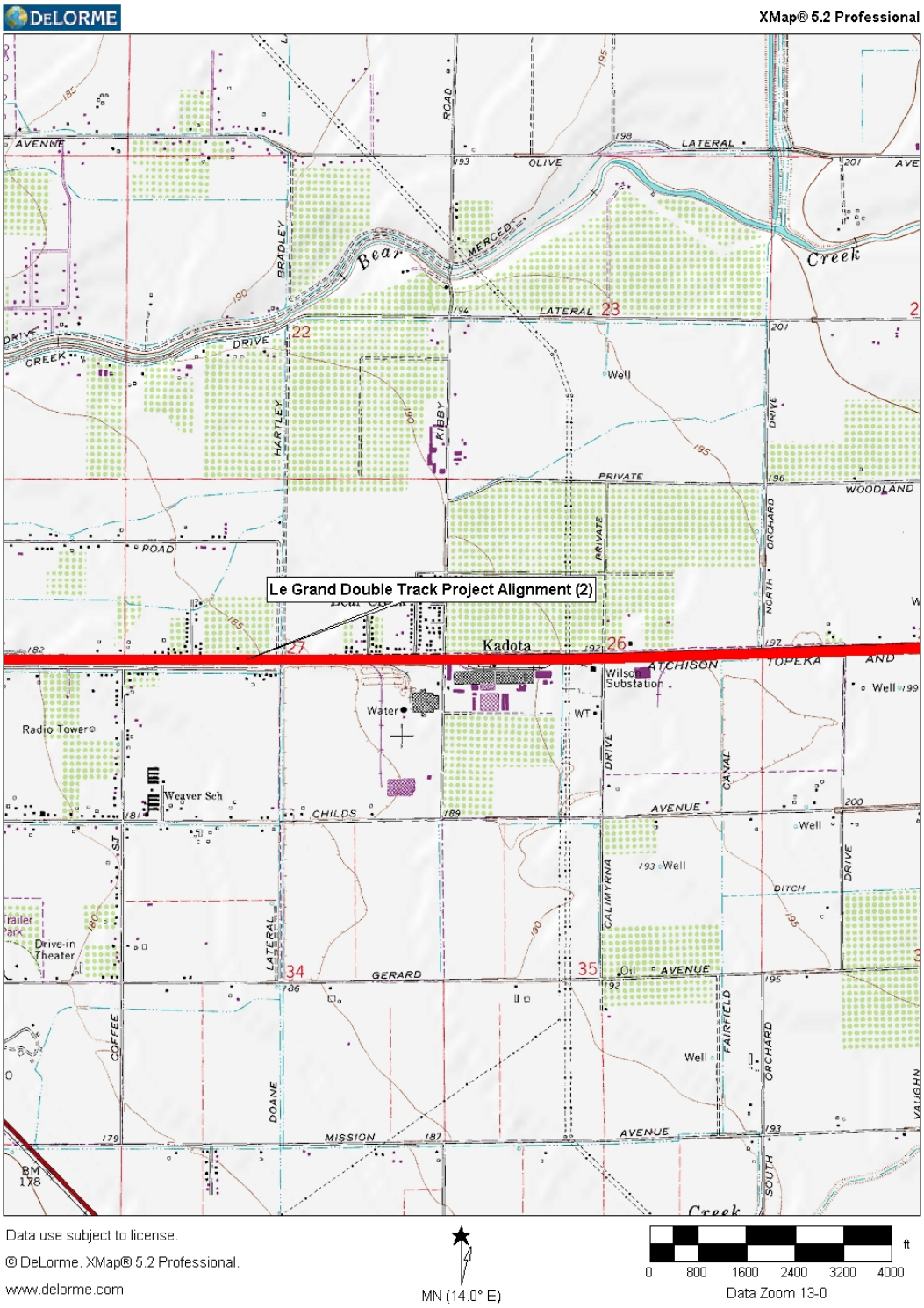


FIGURE 2-3 – Site Location Map (Tuttle to Central East)

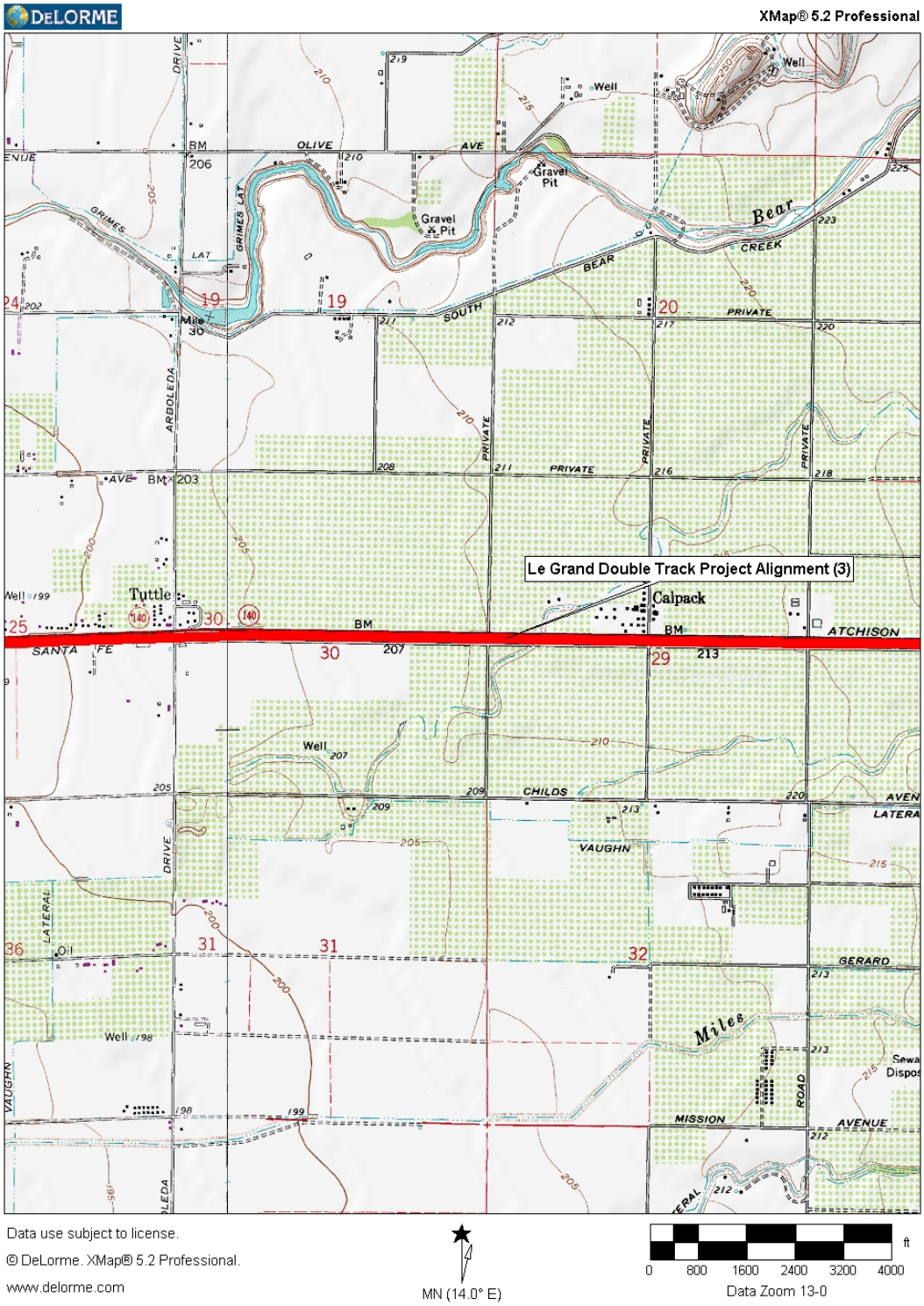


FIGURE 2-4 – Site Location Map (Planada)

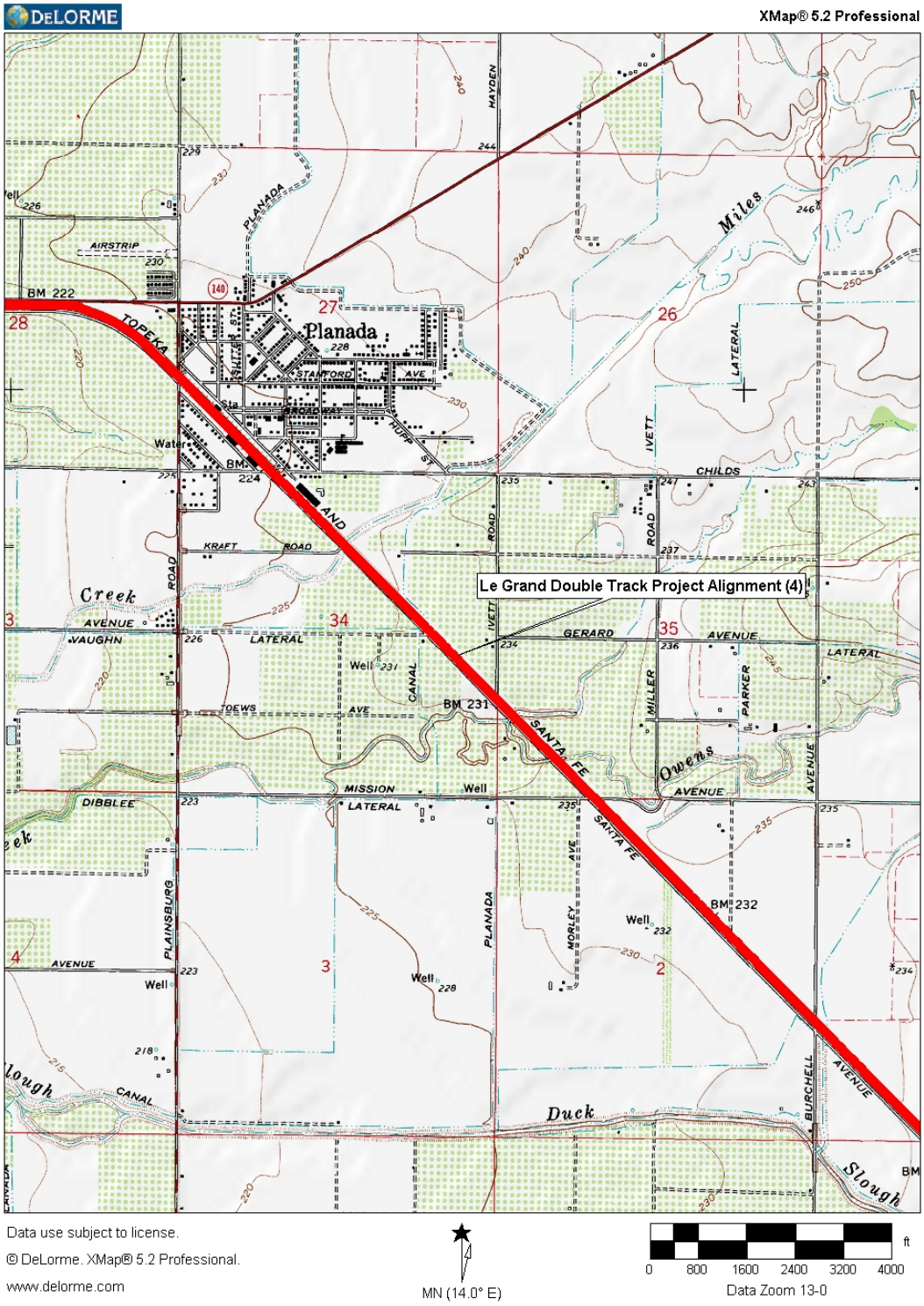


FIGURE 2-5 – Site Location Map (Le Grand)

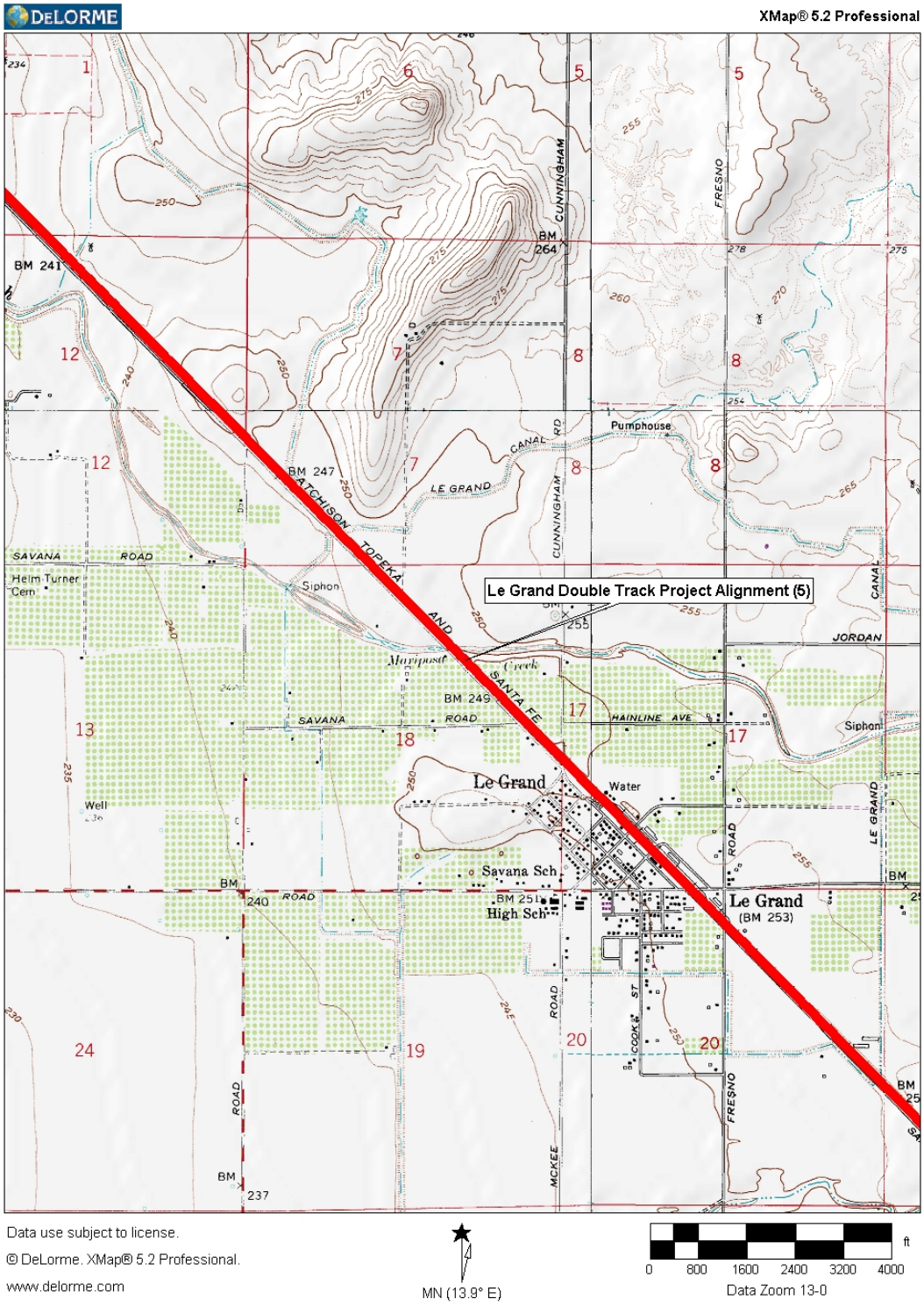
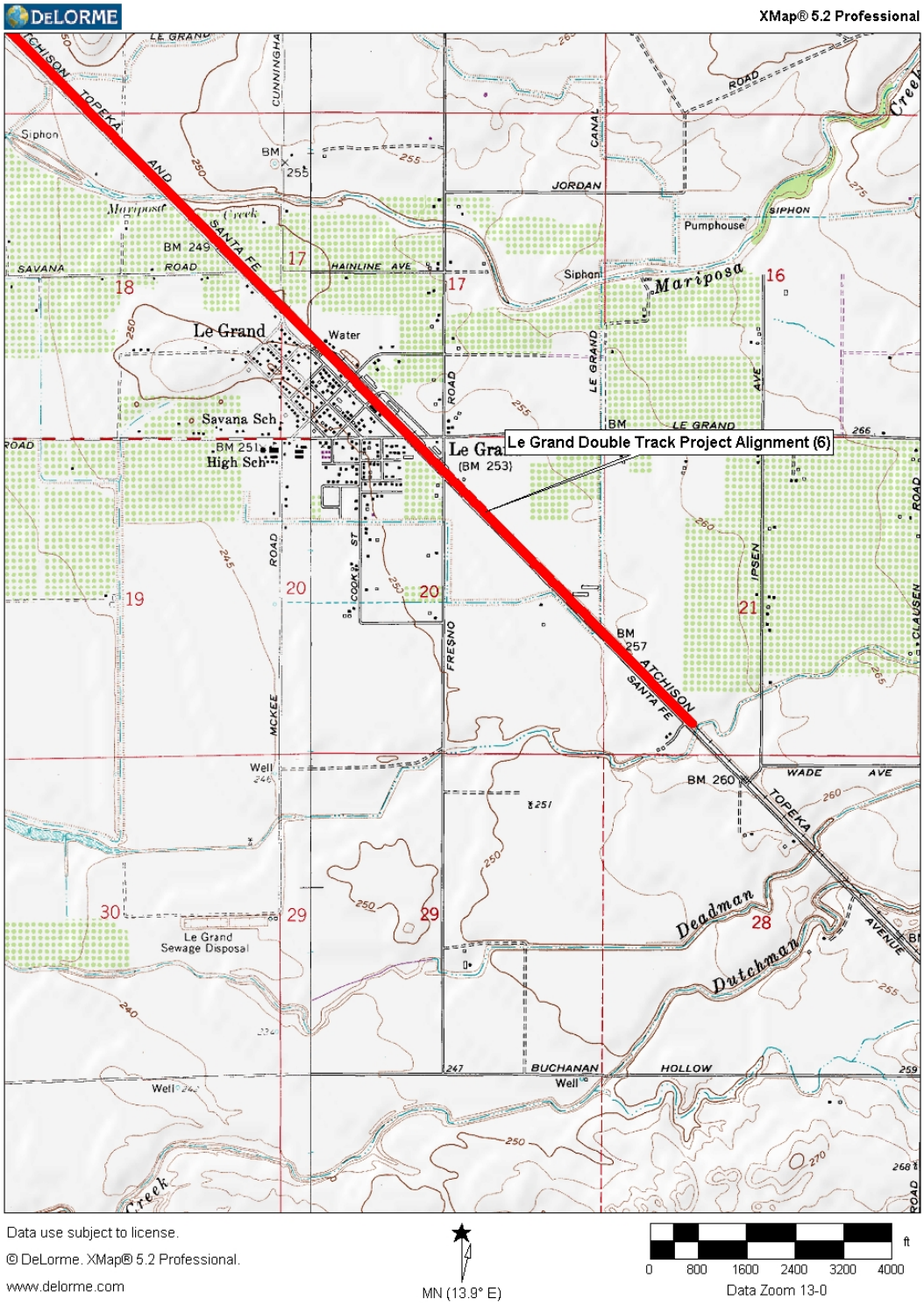


FIGURE 2-6 – Site Location Map (South End)



METHODOLOGY

Background information was gathered prior to visiting this site in order to determine what species would be expected in this area. This background check included a search of the CDFG's Natural Diversity Database (CNDDB). The CNDDB searches that were completed for the USGS 7.5 minute topographic maps, which apply to the project area, are the Merced, Planada, Plainsburg, and Le Grand Quadrangles.

Field surveys were conducted by Ms. Lisa M. Tollstrup of Tom Dodson & Associates on December 15, 2008, January 28, 2009, and February 26, 2009. Disturbance characteristics and all other animal signs were recorded. The primary focus of this field investigation was to determine the presence of any sensitive biological resources on the project site; and to determine the extent of jurisdictional "waters of the United States" under Section 404 of the Clean Water Act, including wetlands, and CDFG "Streambed" under Section 1600 of the CDFG Code. The following discussion outlines the specific criteria for the three types of jurisdictional areas: streambed, waters, and wetlands.

California Department of Fish and Game Section 1602

The CDFG takes jurisdiction over water flow areas, i.e., streams. These water flow areas are identified in the code as:

> "...natural flow or bed, channel or bank of any river stream of lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit or will use material from the streambeds..."

In order to quantify the acreage of "Streambed", the channels were walked and measurements of the discernable bed and banks were taken at approximately 100-foot intervals. The acreage was then calculated from these measurements.

U.S. Army Corps of Engineers "Waters of the United States", excluding wetlands

The limits of "Waters of the United States", excluding wetland, are defined in 33 CFR 328.3(a) as those areas within the "ordinary high water mark" (OHWM). The OHWM is defined as:

> "...that line on the shore established by the fluctuations of the water and indicated by physical characteristics such as clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

In order to quantify the acreages of "Waters of the United States", the channels were walked and measurements of the OHWM were taken at approximately 100-foot intervals.

U.S. Army Corps of Engineers "Wetlands"

The conclusions of the Jurisdictional Delineation conducted in 2000 are based upon The U.S. Army Corps of Engineers' Wetland Delineation Manual, January 1987, Technical Report Y-87-1

(Manual). This Manual outlines a comprehensive approach based upon the presence of the following three parameters: wetland hydrology, hydrophytic vegetation, and hydric soils.

Wetland hydrology is present if the "sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation" (Manual). Hydrophytic vegetation is "the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content" (Manual). A positive hydrophytic vegetation indicator is present if the prevalence, characterized by the dominant species of a plant community or communities, of the vegetation is classified as hydrophytic vegetation. Dominant plant species are those that contribute more to the character of a plant community than other species present, as estimated or measured in terms of some ecological parameter (i.e., %cover, %density, etc…). Hydric soil is "soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation."

Using this Manual, a wetland determination is made when under "normal circumstances" an area has all three parameters present. An area is not functioning under normal circumstances if a positive indicator for one of the three parameters could not be found due to effects of recent human activity. If a particular site has been recently disturbed by natural or human activity, the site may not meet the criteria of "normal circumstances". If this occurs, the site would be classified as an "Atypical Situation" meaning one or more parameters are not reliable indicators.

To complete this Jurisdictional Wetland Delineation, all three parameters were investigated: soils, hydrology, and vegetation. The Manual describes inundation greater than one month to be a "very long duration", therefore areas that were ponded or were saturated at the surface or within the root zone (usually 1-12 inches). The hydrophytic vegetation is characterized by plant species that have "demonstrated an ability to achieve maturity and reproduce in an environment where all or portions of the soil within the root zone become, periodically or continuously, saturated or inundated during the growing season" (Reed). The National List of Plant Species That Occur in Wetlands was used to determine the indicator status of the dominant species of a community. The wetland area was delineated by looking for vegetation boundaries in the field between communities dominated by Facultative Wetland Species – Obligate Wetland Species and those dominated by Facultative Upland - Upland Species, and comparing the hydrological and soils data along the vegetation transition.

BACKGROUND INFORMATION

Biological Setting

The existing environmental setting of the proposed project includes:

The majority of the proposed double track segment topography is flat, with slopes ranging from zero to 5 percent. There are some areas with short, steep slopes along filled areas associated with railroad grading. According to the U.S. Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, the soil units present on the project site consist primarily of silt, gravel, and clay loams within the Alamo, Bear Creek, Burchell, Honcut, Keyes, Marguerite, Porterville, Raynor, Redding, Wyman, Ykohl and Yolo soil series. The project alignment traverses between approximately 165 feet and 250 feet above mean sea level (amsl).

Surrounding land uses are primarily agricultural (vineyards, orchards, and pastures) with some urban and commercial/industrial developments. The Federal Rail Road Authority dictates that rail structures and bridges be kept clear of vegetation, therefore the vast majority of the proposed track alignment is unvegetated and disturbed, the vegetation that does occur along the existing railroad facility is characterized by non-native weedy species such as Storks bill (*Erodium cicutarium*), brome grasses (*Bromus* sp.), and Tumble weed (*Salsola tragus*).

Drainages in the vicinity of the proposed double track are predominately man-made irrigation canals, both lined and unlined. There are four drainages impacted by the proposed project that will be subject to the jurisdiction of the U.S. Army Corps of Engineers, California Department of Fish and Game, and the Regional Water Quality Control Board. Only two of these channels support native vegetation. They are Owens' Creek and Mariposa Creek. Owens' Creek is associated with agricultural uses and is highly disturbed. However, Mariposa Creek is characterized by open water habitat, riparian overstory consisting of willows and cottonwoods, and an understory largely comprised of blackberry. A complete description of all four of these jurisdictional channels is discussed below.

RESULTS

No State or Federal listed species were observed during any of the field surveys. The areas adjacent to the existing track are predominantly agricultural and commercial with some adjacent residential in the communities of Merced and Le Grand. The vast majority of the proposed double track is within the existing BNSF right-of-way and is disturbed by mandatory FTA weed abatement and operations activities.

There are several species listed on the CNDDB and the USFWS lists for the affected counties. The potential for these species to occur within the project areas are identified in Table 2 below. The proposed project does not traverse any designated critical habitat areas.

There were two areas with sensitive biological resources identified along the proposed project. These are the Owens Creek crossing and the Mariposa Creek crossing. Both these areas are characterized by riparian vegetation. The sensitive species with potential to occur within the project area are discussed in Table 2 below. The probability of the species occurrence is discussed in the table as well.

Finally, although none were observed, the above referenced Mariposa crossing has the potential to support the Federally-listed Giant garter snake and the Valley elderberry longhorn beetle. There are no records of Giant garter snake east of Highway 99 in the vicinity of the project. Further, impacts to this species may be avoided by timing the construction when the species is active and has the opportunity to avoid the construction disturbance areas, and to construct the structures in a manner that would avoid disturbing their habitat.

Vegetation

The vast majority of the proposed double track is within the existing BNSF right-of-way and is disturbed by mandatory FTA weed abatement and operations activities. The few places where right-of-way will be acquired are characterized by active agriculture. Surrounding land uses are primarily agricultural (vineyards, orchards, and pastures) with some urban and comercial/industrial developments. The vast majority of the proposed track alignment is unvegetated and disturbed, the vegetation that does occur along the existing railroad facility is characterized by non-native weedy species such as Storks bill (*Erodium cicutarium*), brome grasses (*Bromus* sp.), and Tumble weed (*Salsola tragus*).

Animals

Wildlife observations made during the survey were dominated by bird and mammal species. Observations of wildlife include scat, tracks, burrows, nests, calls and individual animals. Common mammals are dogs (*Canis lupus familularis*) and Beechy Ground Squirrel (*Spermopholus beecheyi*). Common bird species observed were Crows (*Corvus brachyrhynchos*) and Mourning dove (*Zenaida macroura*).

Therefore, vast majority of the alignment is disturbed and characterized by common disturbance orientated species.

Weather

The weather during the field surveys conducted in April 1999 was generally clear and warm with temperatures ranging from low 70°F to the low 80°F. During the field surveys conducted in April 2001, conditions ranged from scattered clouds to mostly sunny with winds from calm to 5 miles per hour. The temperatures ranged from the upper 40°F to the mid 60°F for the entire survey period.

Soils and Topography

The approximately 22.7 miles of track traverses 13 soil series types: Alamo, Bear Creek, Burchell, Honcut, Keyes, Marguerite, Porterville, Raynor, Redding, Wyman, Ykohl and Yolo. The following are the soils maps, and a list of the series type, a brief description of the series characteristics.

FIGURE 3-1 – Soil Map South Half

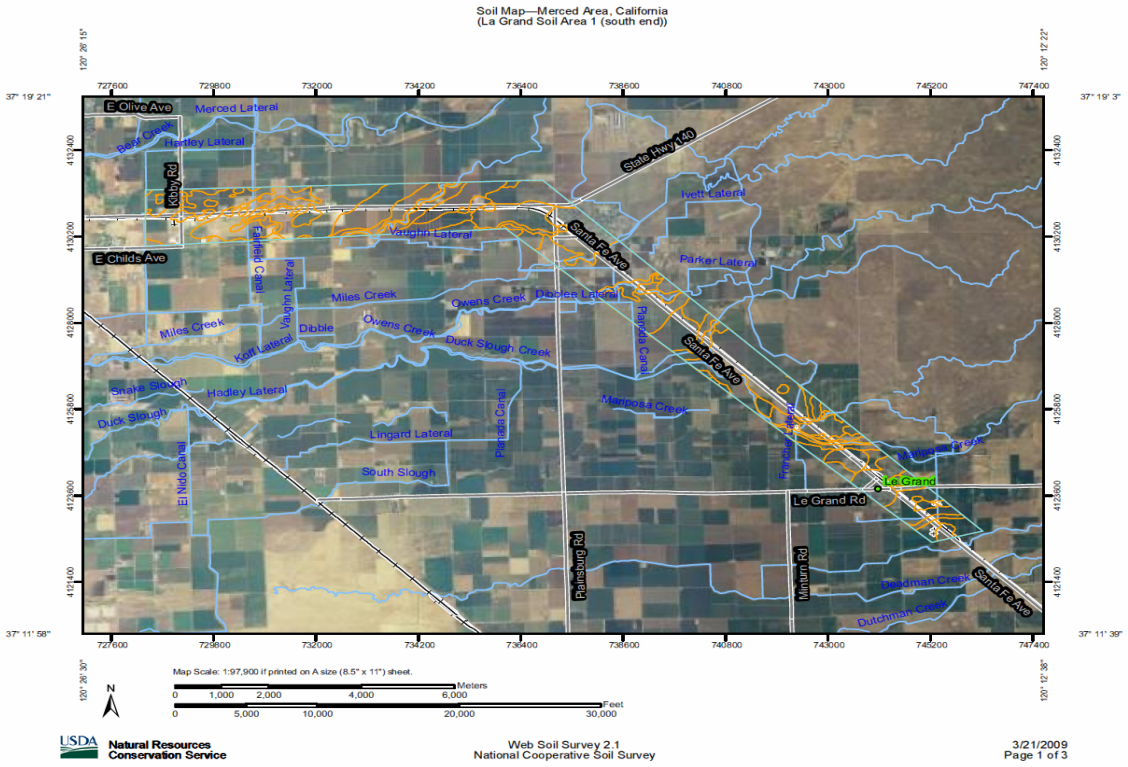
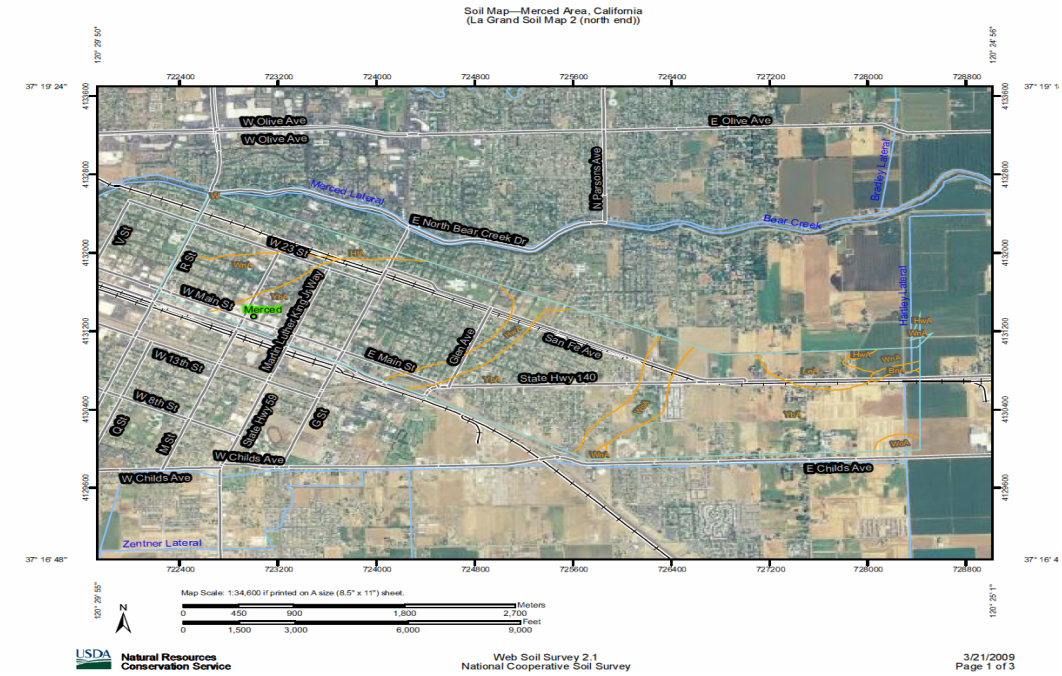


FIGURE 3-2 – Soil Map North Half



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Map Unit Legend

Merced Area, California (CA648)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
AaA	Alamo clay, 0 to 1 percent slopes	7.6	0.1%
BcA	Bear Creek loam, 0 to 3 percent slopes	7.7	0.1%
BnA	Burchell silty clay loam, 0 to 1 percent slopes	59.4	0.9%
HrA	Honcut fine sandy loam, 0 to 1 percent slopes	61.2	1.0%
HtA	Honcut silt loam, 0 to 1 percent slopes	478.8	7.5%
HuA	Honcut silt loam, deep over hardpan, 0 to 1 percent slopes	77.3	1.2%
HwA	Honcut silty clay loam, 0 to 1 percent slopes	266.0	4.2%
HzA	Honcut silty clay loam, channeled, 0 to 8 percent slopes	101.2	1.6%
KaB	Keyes gravelly clay loam, 0 to 8 percent slopes	24.3	0.4%
KbB	Keyes gravelly loam, 0 to 8 percent slopes	101.4	1.6%
KcB	Keyes-Pentz gravelly loam, 0 to 8 percent slopes	7.2	0.1%
LaA	Landlow clay, 0 to 1 percent slopes	89.9	1.4%
LeA	Landlow silty clay loam, 0 to 1 percent slopes	40.0	0.6%
MfA	Marguerite silty clay loam, 0 to 1 percent slopes	370.2	5.8%
MgA	Marguerite silty clay loam, deep over hardpan, 0 to 1 percent slopes	68.2	1.1%
PwA	Porterville clay, o to 3 percent slopes	1,529.8	24.0%
PwB	Porterville clay, 3 to 8 percent slopes	10.2	0.2%
RaA	Raynor clay, 0 to 3 percent slopes	105.6	1.7%
RaB	Raynor clay, 3 to 8 percent slopes	23.0	0.4%
ReB	Redding gravelly loam, 0 to 8 percent slopes	21.8	0.3%
Rf	Riverwash	35.3	0.6%
W	Water	3.0	0.0%
WhA	Wyman clay loam, deep over hardpan, 0 to 1 percent slopes	684.7	10.7%
WoA	Wyman clay loam, 0 to 3 percent slopes	769.9	12.1%
WrA	Wyman loam, 0 to 3 percent slopes	132.3	2.1%
WsA	Wyman loam, deep over hardpan, 0 to 3 percent slopes	255.7	4.0%
YaA	Yokohl clay, 0 to 3 percent slopes	237.3	3.7%
YbA	Yokohl clay loam, 0 to 3 percent slopes	702.6	11.0%
YcA	Yokohl loam, 0 to 3 percent slopes	47.2	0.7%
YdA	Yolo loam, 0 to 1 percent slopes	62.9	1.0%
Totals for Area of Interest		**6,383.1**	**100.0%**

Wildlife

Wildlife observations made during the survey were dominated by bird and mammal species. Observations of wildlife include scat, tracks, burrows, nests, calls and individual animals. Common mammals are dogs (*Canis lupus familularis*) and Beechy ground squirrel (*Spermopholus beecheyi*). Common bird species observed were Crows (*Corvus brachyrhynchos*) and Mourning dove (*Zenaida macroura*).

Although the vast majority of the alignment is disturbed and characterized by common disturbance orientated species, there is an approximately one mile segment along the railroad fill embankment in Stockton between Navy Drive and Fresno Avenue where burrowing owls (*Athene cunicularia*) were observed.

Disturbances

The level of disturbance is severe. The disturbances include complete industrial development, residential development, active agriculture, and maintained railroad bed.

Jurisdictional Determination

There were four crossings that will be impacted by the proposed project with potentially jurisdictional waters. Further, these crossings may require a Section 404 permit, Section 401 Certification, or a 1602 Agreement. The need for a permit at any given structure will depend upon the nature of the body of water as well as the design of the proposed structure and the construction methods. The following is a list of bridges that may require permitting:

Location	Type of Activity	Estimated Permanent Impacts
MP 1042.25	Mariposa Creek	0.13 acre
MP 1045.90	Owens Creek	0.01 acre
MP 1049.30	Unnamed Channel	0.001 acre
MP 1052.94	Unnamed Channel	0.003 acre

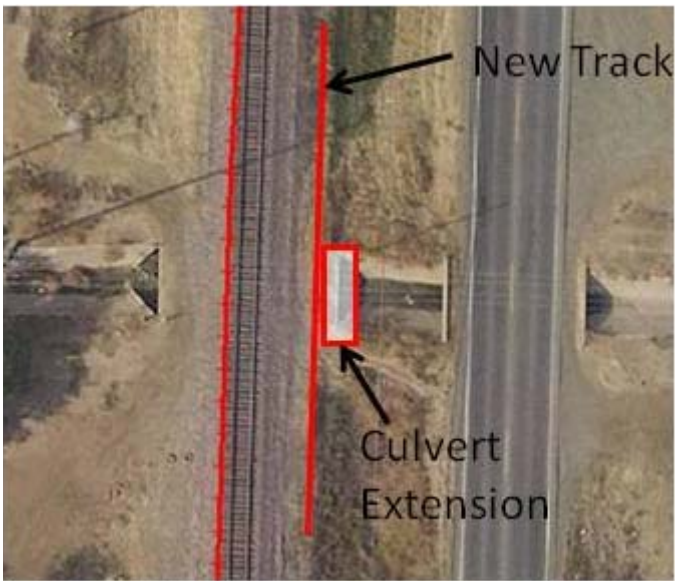


FIGURE 4-1 – MP 1052.94

The unnamed drainage at MP 1052.94 is characterized by a concrete lined channel. The channel is used to transport irrigation water to local crops. There is no vegetation associated with this crossing.

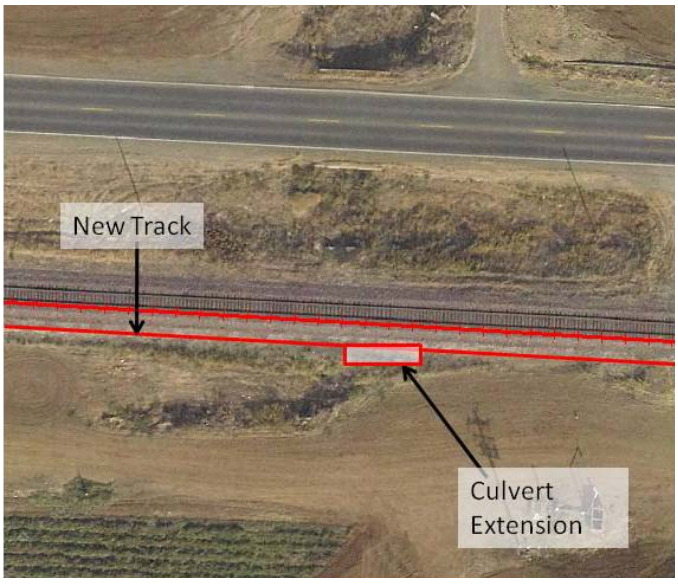


FIGURE 4-2 – MP 1049.30

This crossing is a pipe culvert. The area is typically maintained, and is characterized by non-native upland grasses.

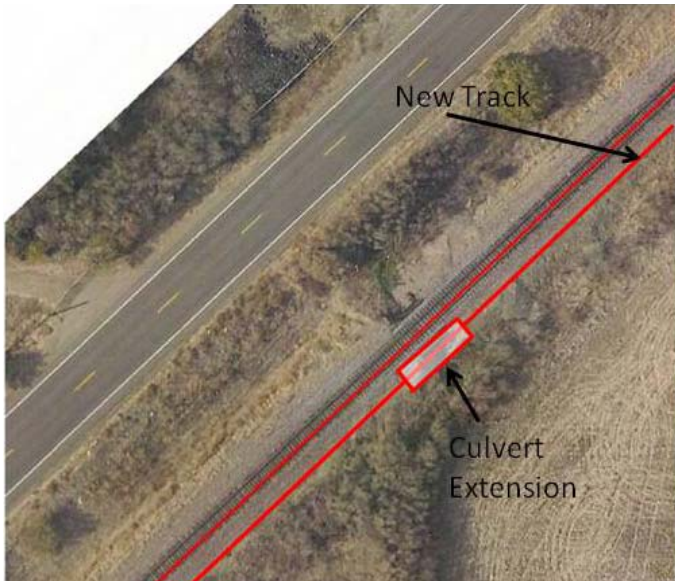


FIGURE 4-3 – Owens' Creek (MP 1045.90)

Owens' Creek is characterized by riparian habitat dominated by willow (Salix sp). This channel is very narrow at the existing bridge, and may be able to be clear-spanned to avoid impacts.

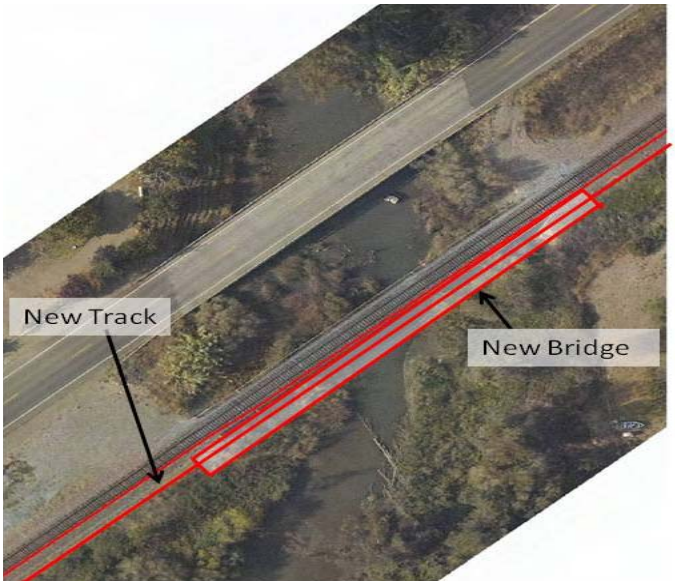


FIGURE 4-4 – Mariposa Creek (MP 1042.25)

Mariposa Creek is characterized by a large riparian overstory consisting of willow (Salix sp) and cottonwoods (*Populus fremontii*), open water with emergent vegetation, and an understory dominated by blackberry.

CNDDB Search Results and Discussion

California Department of Fish and Game's CNDDB for the UGSS topographic maps that apply to the project area are the Merced, Planada, Plainsburg, and Le Grand Quadrangles, 7.5 Minute Series topographic quadrangles were searched. The following is a discussion of the species listed by the database as occurring within the Valley Floor.

Table 2: CNDDB OCCURRENCE SPECIES LIST

Scientific Name	Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Agelaius tricolor	tricolor blackbird	None / Species of Concern	A colonial breeder that requires wetlands including a protected nesting substrate and insect prey within a couple of miles of the nesting site.	No suitable habitat occurs within the proposed double track area of potential effect. However there is suitable habitat adjacent to the right-of-way in the vicinity of Mariposa Creek.
Ambystoma californiense	California tiger salamander	Endangered / None	The species is restricted to grasslands and low (typically below 2000 feet/610 meters) foothill regions where lowland aquatic sites are available for breeding. They prefer natural ephemeral or vernal pools or ponds that mimic them (stock ponds that are allowed to go dry).	No Suitable habitat for this species occurs within the project APE. There is no upland grassland or other such undisturbed area suitable for this species. Further, Mariposa Creek is not ephemeral, and is too deep and swift moving for the larval stage of this species. Therefore, this species will not likely be impacted by this project.
Amphispiza belli belli	Bell's sage sparrow	None / Species of Concern	Nests in dense stands of chamise in chaparral.	No suitable habitat occurs within the proposed double track area of potential effect.
Anniella pulchra pulchra	silvery legless lizard	None / Species of Concern	Prefers sandy or loose loamy soils under sparse vegetation with high moisture content.	Due to the disturbed and compacted nature of the high fill areas, no suitable habitat occurs within the proposed double track area of potential effect.
Aster lentus	Suisun Marsh aster	None / None	Brackish and freshwater marshes and swamps most often along sloughs.	No suitable habitat occurs within the proposed double track area of potential effect.
Astragalus tener var. *tener*	Alkali milk vetch	None / None	Alkali playa in valley and foothill grassland and in vernal pools.	No suitable habitat occurs within the proposed double track area of potential effect. Further, this species may have been extirpated from the focus area according to CNDDB.

Scientific Name	Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Athene cunicularia	burrowing owl	Species of Concern / None	Inhabits open fields and along berms where ground squirrel burrows occur.	No burrowing owls or evidence of use by owls was observed within the project areas.
Atriplex cordulata	heartscale	None / None	Found in chenopod scrub, valley and foothill grassland and meadows.	No suitable habitat occurs within the proposed double track area of potential effect.
Atriplex minuscule	Lesser Saltscale	None / None	Found in chenopod scrub, alkali meadow, valley and foothill grassland.	No suitable habitat occurs within the proposed double track area of potential effect.
Blepharizonia plumosa ssp. *plumosa*	big tarplant	None / None	Grows in valley grassland and disturbed grassland habitats with dry soils. Blooms July to October.	This species is not known to occur in the vicinity of the proposed project. There is, however suitable habitat adjacent to the area of potential effect. The likelihood of this species being impacted by this project is low.
Branchinecta conservatio	Conservancy fairy shrimp	Endangered / None	This species is endemic to grasslands of the northern 2/3 of the central valley and is found in large, turbid pools.	No suitable habitat occurs within the proposed double track area of potential effect.
Branchinecta longiantenna	Longhorned fairy shrimp	Endangered/ None	Inhabits seasonally aquatic grassland vernal pools and is endemic to the eastern margin of the central coast mountains.	No suitable habitat occurs within the proposed double track area of potential effect.
Branchinecta mesovallensis	Midvalley fairy shrimp	Endangered / None	Inhabits seasonally aquatic grassland vernal pools and is endemic to the eastern margin of the central coast mountains.	No suitable habitat occurs within the proposed double track area of potential effect.
Branchinecta lynchi	Vernal pool fairy shrimp	Threatened / None	Found in vernal pools and small pond habitat.	No suitable habitat occurs within the proposed double track area of potential effect.
Branta candensis leucopareia	Aleutian Canada goose	Threatened / None	This species winters in lakes and inland prairies.	No suitable habitat occurs within the proposed double track area of potential effect.

Scientific Name	Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Buteo regalis	ferruginous hawk	None / Species of Concern	Inhabits open grasslands, sage brush flats, desert scrub low foothills surrounding valleys and fringes of pinyon-juniper habitats.	There are roosting and nesting sites adjacent to the proposed project, however, there is little to no foraging habitat that will be affected by the proposed project. Tree removal should be timed to avoid the nesting season. The proposed double track will not adversely affect this species.
Buteo swainsoni	Swainson's hawk	Partners in Flight Priority Bird Species / Threatened	Typical habitat of the Swainson's hawk is open desert, sparse shrub lands, grassland, or cropland containing scattered, large trees or small groves. In California's Central Valley, the nests are typically at the edge of a narrow band of riparian vegetation, in isolated oak woodland, and in lone trees, roadside trees, or farmyard trees, as well as in adjacent urban residential areas (England et al. 1989).	There are roosting and nesting sites adjacent to the proposed project, however, there is little to no foraging habitat that will be affected by the proposed project. Tree removal should be timed to avoid the nesting season. The proposed double track will not adversely affect this species.
Charadrius montanus	mountain plover	Proposed Threatened / Species of Concern	Found in short grass plains, low rolling grassy hills, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms.	This species was not observed during any of the field surveys. There is no suitable habitat within the railroad alignment. There are, however, plowed agriculture fields adjacent to the railroad right-of-way. Although it is unlikely the proposed project will affect this species, construction staging areas should be checked prior to construction to insure no nests are disturbed.

Scientific Name	Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Circus cyaneus	northern harrier	None / Species of Concern	Nests on the ground in grass-land, meadows or open range land. Hunts over open ground and wetlands.	This species was not observed during any of the field surveys. There is no suitable habitat within the railroad alignment. There are, however, plowed agriculture fields adjacent to the railroad right-of-way. Although it is unlikely the proposed project will affect this species, construction staging areas should be checked prior to construction to insure no nests are disturbed.
Cirsium crassicaule	slough thistle	None / None	Grows in Chenopod scrub, marshes, swamps and riparian scrub. Endemic to the San Joaquin Valley.	No suitable habitat occurs within the proposed double track area of potential effect. Further, none was observed during the field visit. There-fore the proposed project is not likely to affect this species.
Clemmys marmorata	western pond turtle	Species of Concern / Species of Concern	Inhabits fresh or brackish permanent or intermittent water bodies such as creeks and ponds.	Mariposa Channel does have habitat suitable for this species. Therefore, con-struction should be timed when this species is active and exclusionary methods should be used to avoid impacts to this species.
Cordylanthus palmatus	palmate-bracted bird's-beak	Endangered / Endangered	Grows in chenopod scrub, valley and foothill grasslands usually on alkaline pescadero silty clay.	No suitable habitat occurs within the proposed double track area of potential effect.
Delphinium californicum ssp. interius	Interior California larkspur or Hospital Canyon larkspur	None / None	Found in openings and canyons of cismontane woodland and chaparral and in wet, boggy meadows.	No suitable habitat occurs within the proposed double track area of potential effect.
Delphinum gysophilum ssp. *gypsophilum*	gypsum-loving larkspur	None / None	Grows in chenpod scrub and valley and foothill grassland.	No suitable habitat occurs within the proposed double track area of potential effect.

Scientific Name	Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Threatened / None	This beetle is associated with elderberry trees (*Sambucus* spp.) in California's Central Valley during its entire life cycle. The adults emerge from pupation inside the wood of these trees in the spring as their flowers begin to open. The adults eat the elderberry foliage until about June when they mate. Upon hatching the larvae they begin to tunnel into the tree where they will spend 1-2 years eating the interior wood which is their sole food source.	No elderberry plants were observed within the proposed double tracking areas of potential effect. Therefore the probability of this species being affected by this project is zero.
Eryngium racemosum	delta button celery / coyote thistle	None / Endangered	Found on seasonally inundated clay based floodplains.	No suitable habitat occurs within the proposed double track area of potential effect. Possibly extirpated from this study's focal area according to the CNDDB.
Falco peregrinus anatum	American peregrine falcon	Unknown code / Endangered	Breeds near wetlands, lakes, rivers or other water on high cliffs, bands, dunes, mounds and human-made structures.	This species was not observed during any of the field surveys. There is no suitable habitat within the railroad alignment. There are, however, plowed agri-culture fields adjacent to the railroad right of way. Although it is unlikely the proposed project will effect this species, construction staging areas should be checked prior to construction to ensure not nests are disturbed.
Hypomesus transpacificus	delta smelt	Threatened / Threatened	Most often found at salinities less than 2 ppt in the Sacramento and San Joaquin Delta.	No suitable habitat occurs within the proposed double track area of potential effect.
Lampetra ayresi	river lamprey	None / Species of Concern	Adults need clean, gravelly riffles. Amocoetes need sandy backwaters or stream edges with good water quality and temperatures below 25 Celsius.	No suitable habitat occurs within the proposed double track area of potential effect.
Lampetra hubbsi	Kern brook lamprey		Adults need clean, gravelly riffles.	No suitable habitat occurs within the proposed double track area of potential effect.

Scientific Name	Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Laterallus jamaicensis	black rail	None / Threatened	Found in salt, brackish and freshwater marshes at low elevations.	No suitable habitat occurs within the proposed double track area of potential effect.
Lathyrus jepsonii var. *jepsonii*	delta tule-pea	None / None	Usually found on marsh and slough edges in freshwater and brackish marshes. Distribution is mostly restricted to the Sacramento and San Joaquin River Delta.	No suitable habitat occurs within the proposed double track area of potential effect.
Legenere limosa	legenere	None / None	Found in vernal pools.	According to the CNDDB it has been extirpated from this study's focal area.
Lepidurus packardi	vernal pool tadpole shrimp	Endangered / None	Vernal Pool, small pond habitat	No suitable habitat occurs within the proposed double track area of potential effect.
Lytta molesta	molestan blister beetle	None / None	Common in dry vernal pools.	No suitable habitat occurs within the proposed double track area of potential effect.
Myotis ciliolabrum (subulatus)	small-footed myotis bat	None / None		No suitable habitat occurs within the proposed double track area of potential effect.
Myotis evotis	long-eared myotis bat	None / None	Prefers coniferous forests but is found in all brush, woodland and forest habitat from sea level to 9000 feet. Nursery roosts are located in buildings, crevices, spaces under bark and snags. Caves are used primarily as night roosts.	No suitable habitat occurs within the proposed double track area of potential effect.
Myotis thysanodes	fringed myotis bat	None / None	Prefers pinyon-juniper, valley and foothill hardwood and hardwood-conifer habitat but is found in a wide variety of habitats.	No suitable habitat occurs within the proposed double track area of potential effect.
Myotis volans	long-legged myotis bat	None / None	Trees are used as day roosts while caves and mines are used as night roosts.	No suitable habitat occurs within the proposed double track area of potential effect.
Myotis yumanensis	Yuma myotis bat	None / None	Found in open forests and woodlands with water bodies for foraging.	No suitable habitat occurs within the proposed double track area of potential effect.

Scientific Name	Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Neotoma fuscipes riparia	San Joaquin Valley woodrat	Endangered / Species of Concern	Found in riparian areas with a mix of brush and trees. Nesting sites are located in trees, snags and logs.	Mariposa Creek crossing has the potential to affect this species. Exclusionary methods may minimize the impacts to this species.
Oncorhynchus mykiss	Central Valley steelhead	Candidate / Species of Concern	Requires a minimum water depth of 18 cm for upstream migration. Water velocity above 3 to 4 meters per second impedes upstream movement.	No suitable habitat occurs within the proposed double track area of potential effect.
Oncorhynchus tshawytscha	winter-run chinook salmon	Candidate / Species of Concern	Requires a minimum water depth of 18 cm for upstream migration. Water velocity above 3 to 4 meters per second impedes upstream	No suitable habitat occurs within the proposed double track area of potential effect.
Perognathus inornatus	San Joaquin pocket mouse	None / None	Requires friable soils in grasslands and blue oak savannahs.	No suitable habitat occurs within the proposed double track area of potential effect.
Phrynosoma coronatum frontale	California horned lizard	None / Species of Concern	Most common along sandy washes with scattered low bushes. Needs abundant supply of ants and other insects.	No suitable habitat occurs within the proposed double track area of potential effect.
Plecotus townsendii townsenii	pacific western big-eared bat	Species of Concern / Species of Concern	Found throughout California most abundantly in mesic habitats. Requires caves, mines, tunnels, buildings or other human made structures for roosting. Roosting sites the most limiting resource (Zeimer, et al. 1990).	No suitable habitat occurs within the proposed double track area of potential effect.
Plegadis chihi	white-faced flycatcher	None / Species of Concern	Nests in dense tule thickets in shallow freshwater marshes.	No suitable habitat occurs within the proposed double track area of potential effect.
Rana aurora draytonii	California red-legged frog	Threatened / Species of Concern	Requires dense shrubby or emergent riparian vegetation closely associated with deep, still and slow moving water. Requires 11 - 20 weeks of permanent water for larval development.	This species was not identified during the field survey. The closest occurrence is more than 10 miles away. Further, due to the railroad maintenance activities and the agricultural practices, the probability of this species occurring within the project APE is low.

Scientific Name	Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Rana boylii	foothill yellow-legged frog	None / Species of Concern	Found in partly-shaded, shallow streams and riffles with rocky substrate in a variety of habitats. Needs some cobble-sized substrate for egg-laying and at least 15 weeks of water.	No suitable habitat occurs within the proposed double track area of potential effect.
Sagittaria sanfordii	valley sagittaria	None / None	Grows in standing or slow moving freshwater ponds, marshes and ditches.	None were observed in the project area. Therefore this project will not likely affect this species.
Scaphiopus hammondii	western spadefoot toad	None / DFG protected	This species utilizes temporary rain pools or slow moving permanent waters for breeding. Non-breeding habitat consists of open vegetation characterized by short grasses.	Suitable habitat occurs at Mariposa Creek. There are no vernal pools with in the project impact areas. Impacts should avoid breeding season and exclusionary methods may minimize any potential impact to this species.
Spirinchus thaleichthys	longfin smelt			No suitable habitat occurs within the proposed double track area of potential effect.
Sylvilagus bachmani riparius	riparian brush rabbit	Endangered / Endangered	Inhabits dense thickets of wild rose, willows and blackberries in riparian areas of the San Joaquin River in Stanislaus County.	The only known extant population is in the Caswell Memorial State Park 4 miles southwest of Ripon.
Thamnophis gigas	giant garter snake	Threatened / Threatened	Prefers freshwater marsh and low-gradient streams but has adapted to irrigation ditches and drainage canals. Requires water throughout its active season (early spring through mid-fall) with emergent vegetation such as, cattails and bulrushes.	This species was not identified during the field survey. Further, there are no records for this species east of Highway 99 in the vicinity of this project. Finally, due to the railroad maintenance activities and the agricultural practices, the probability of this species occurring within the project APE is low. Timing of the construction should be during the active period to allow any snakes that may be in the area to avoid the construction activities.
Tuctoria greenei	Greene's tuctoria	Endangered / Rare	Grows in vernal pools and valley and foothill grasslands.	According to the CNDDB it has been extirpated from this study's focal area.

Scientific Name	Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Vulpes macrotis mutica	San Joaquin kit fox	Endangered / Threatened	Annual grasslands or grassy open areas with shrub land vegetation. This species requires loose sandy soils for burrowing and a suitable prey base.	There are no natural grasslands associated with this segment. Further, no large burrows were observed within the proposed double track alignment. Therefore, the probability of this species occurring within the project areas of impact is exceedingly low.

Coding and Terms
Federal Species of Concern: "taxa for which the U.S. Fish and Wildlife Service has information that indicates proposing to list the taxa as endangered or threatened is possibly appropriate, but for which substantial data on the biological vulnerability and threats are not currently known or on file to support the immediate preparation of rules." (Arnold). All of these species have a limited range. In fact, some species are limited to the San Bernardino Mountains area, however, they are locally common.
State Species of Special Concern: An administrative designation given to vertebrate species that appear to be vulnerable to extinction because of declining populations, limited acreages, and/or continuing threats.
State Plant Rankings: S1 - less than 6 element occurrences, or less than 1,000 individuals, or less than 2,000 acres S2 - 6 to 20 element occurrences, or between 1,000 and 3,000 individuals, or between 2,000 and 10,000 acres S3 - 21 to 100 element occurrences, or between 3,000 and 10,000 individuals, or between 10,000 and 50,000 acres S4 - No Threat Rank S5 - No Threat Rank
R-E-D Code: .1 - very threatened .2 - threatened .3 - no current threats known

Tiger Salamander (*Ambystoma californiense)*

The California Tiger Salamander is found in annual grasslands and open woodlands (FWS 2003). Here, the Mediterranean climate creates hot dry summers and cool rainy winters. The mean annual precipitation is 20 to 40 inches per year with mean annual temperatures of 50 to 58 degrees Fahrenheit (USFS 2003). Ecological characteristics of this area include dry soils, needlegrass grasslands, valley oaks, coast live oaks and ephemerally flooded claypan depressions called vernal pools (USFS 2003). The species is restricted to grasslands and low (typically below 2000 feet/610 meters) foothill regions where lowland aquatic sites are available for breeding. They prefer natural ephemeral or vernal pools or ponds that mimic them, such as stock ponds that are allowed to go dry.

Larvae require significantly more time to transform into juvenile adults than other amphibians, such as the western spadefoot toad (*Scaphiopus hammondii*) and Pacific tree frog (*Pseudacris regilla*). Compared to the western toad (*Bufo boreas*) or western spadefoot toad, California tiger salamanders are poor burrowers. They require refuges provided by ground squirrels and other burrowing mammals in which to enter a dormant state called *estivation* during the dry months.

There is no suitable habitat for this species located within the APE. This species is typically found in valley grasslands and oak savannas where vernal pool or other temporary water sources occur. This species is not associated with permanent water sources such as Mariposa Creek, or with chronic disturbances for agricultural uses such as the other channels associated with this project.

San Joaquin kit fox *(Vulpes macrotis mutica)*

The San Joaquin kit fox is primarily nocturnal, becoming active near sunset and foraging throughout the night. It feeds on rodents and other small animals, including blacktailed hares, desert cottontails, mice, kangaroo rats, squirrels, birds, and lizards. The San Joaquin kit fox satisfies its moisture requirements from prey and does not depend on freshwater sources.

The San Joaquin kit fox forages in California prairie and Sonoran grasslands in the vicinity of freshwater marshes and alkali sinks, where there is a dense ground cover of tall grasses and San Joaquin saltbush. Seasonal flooding in such habitats is normal. Soils are deep, heavy loams that support mixtures of native perennial and introduced grasses. Pupping dens are built in more loosely textured soils at elevations between 110 and 900 meters (350 and 2,950 ft).

Formerly, this kit fox was relatively common in the semi-arid San Joaquin Valley, California, in a range that extended in the north from above Modesto (San Joaquin and Stanislaus counties) to near Bakersfield (Kern County) in the south. By 1930 the kit fox had been eliminated from the northern portion of its range and was found in declining numbers from Merced (Merced County) south along the Coastal Range through Fresno and San Benito counties. Populations survived in Kings, San Luis Obispo, and Kern counties mostly west of Interstate Highway 5.

The kit fox is now known to occur along the west side of the San Joaquin Valley in Merced County, and in Kern and San Luis Obispo and Kern counties. Isolated individuals or small breeding populations have been found near White River south of Porterville (Tulare County) and in three counties outside the original range of the species-Monterey, Santa Barbara, and Santa Clara.

There are no known populations within the vicinity of the proposed project. Further, there is no native habitat such as fresh water marshes, alkali sinks, or valley grasslands on or adjacent to the APE. Therefore this project will not impact this species.

Giant garter snake (*Thamnophis gigas*)

Prefers freshwater marsh and low gradient streams but has adapted to irrigation ditches and drainage canals. This species requires water throughout its active season (early spring through mid-fall) with emergent vegetation such as, cattails and bulrushes. It is highly aquatic, active during daylight and at night in hot weather. Secretive and difficult to approach, this snake will quickly drop into the water from its basking site and dive to the bottom before the observer can get close. This behavior probably derives from the habitat of this snake which is often open and treeless and the presence of many airborne predators such as egrets, herons, and hawks.

This species emerges from overwintering sites in March. Basks on vegetation near water in spring, and utilizes animal burrows and vegetation piles during hotter weather. Some snakes remain active until October. This species overwinters in animal burrows, and is found primarily in marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks. The species prefers locations with vegetation close to the water for basking, and at elevations from sea level to 400 ft. (122m).

This species was not identified during the field survey. Further, there are no records for this species east of Interstate 99 in the vicinity of this project. Finally, due to the railroad maintenance activities and the agricultural practices, the probability of this species occurring within the project APE is low. Timing of the construction should be during the active period to allow any snakes that may be in the area to avoid the construction activities.

Valley Long-horned Elderberry Beatle (*Desmocerus californicus dimorphus*)

The Valley elderberry longhorn beetle, Elaphrus viridis, is a member of the family Cerambycidae (subfamily Lepturinae) that is distinguished by a cylindrical body as long as 2 in (5 cm). Males of the species exhibit several patterns of coloration: dark metallic green above with a bright reddish orange border, four oblong metallic green spots on the outer wings (elytra), or gradations.

About 400 species of longhorn beetles are found in California; all are herbivorous and are frequently associated with a particular plant host. The Valley elderberry longhorn beetle is associated with three species of elderberry (Sambucus). It deposits eggs in cracks and crevices of the bark of living elderberry bushes; the eggs hatch soon after. The larvae bore into the pith of larger stems and roots and, when ready to pupate, open holes through the bark. The life cycle probably encompasses two years. Adults emerge about the same time the elderberry blooms—as early as mid-March—and may live until mid-June.

The Valley elderberry longhorn beetle inhabits elderberry thickets in moist oak woodlands along the banks of streams and rivers. The host plant sometimes suffers from fungal attack at the sites of holes bored by the beetle, and results in weakening or killing the plant.

This beetle is endemic to the banks of the Sacramento, American, and San Joaquin Rivers and their tributaries in the Central Valley of California. The beetle's major population center is along the American River. Remnant populations of this longhorn beetle are found in the few stands of natural riverside (riparian) woodlands that remain in the Central Valley. As of 1988, the beetle was known to be present in 10 localities in five counties: Merced, Sacramento, San Joaquin, Stanislaus, and Yolo. Sacramento County supports the largest concentrations of the beetle.

The project is well outside of any known locations for this species and there are no riparian resources including elderberries associated with the proposed APE. The proposed project will not impact any suitable habitat and therefore will not affect this species.

Ferruginous Hawk (*Buteo regalis*) and Swinson's Hawk (*Buteo swainsoni*)

Both these species preferred the arid and semi-arid grassland regions of North America. The countryside is open, level, or rolling prairies; foothills or middle elevation plateaus largely devoid of trees; and cultivated shelterbelts or riparian corridors. Rock outcrops, shallow canyons, and gullies may characterize some habitats. These hawks avoid high elevations, forest interiors, narrow canyons, and cliff areas.

Swainson's Hawk, Red-tailed Hawk (*B. jamaicensis*), and Ferruginous Hawk (*B. regalis*) compete for territory, and defend territories against each other. In many parts of the plains these three species nest in the same general area and exploit much of the same prey base. Although diets overlap greatly, habitats may not overlap as much. In Oregon, the Swainson's Hawk selects nesting trees having a different configuration than those used by Red-tailed or Ferruginous Hawks. In southern Alberta, different nesting habitats help reduce food competition, with the Swainson's Hawk favoring areas with scattered trees or riparian borders, the Red-tailed Hawks preferring to nest in stands of tall trees, and Ferruginous Hawks preferring to nest on the open plains. During the breeding season, the preference is for grasslands, sage, and other arid shrub country. Nesting occurs in the open areas or in trees including cottonwoods, willows, and swamp oaks along waterways. Cultivated fields and modified grasslands are avoided during the breeding period. The density of Ferruginous Hawks in grasslands declines in an inverse relationship to the degree of cultivation of the grasslands. However, high densities have been reported in areas where nearly 80 percent of the grassland was under cultivation.

The winter habitat is similar to that used during the summer. However, cultivated areas are not necessarily avoided, particularly when the crops are not plowed under after harvest. The standing stubble provides habitat for the small-mammal prey base needed by Ferruginous and other hawks. One requisite of the habitat is suitable areas to perch such as poles, lone trees, knolls, rocky outcrops or large boulders. Ferruginous Hawks nest in trees if they are available, including riparian strips, but the presence of water does not appear to be critical to them.

The Riparian habitat associated with Mariposa Creek is suitable for both of the species to utilize present trees for perching as well as nesting.

Fresno Kangaroo Rat (*Dipodomys Nitratoides Exilis*)

This species is a silken-furred kangaroo rat with large head and big eyes like other kangaroo rats. It has a white hip stripe and a dark patch across its nose. Its body is buff-colored with a

white underside. This coloration distinguishes it from other kangaroo rats. Head and body measure about 10 cm. Tail is 12.2-15.2 cm.

Fresno kangaroo rats live in the alkali marsh plant area of Fresno, Fresno County, California. Burrows are located in slightly elevated ground, above the seasonal floodwaters level. Presently this species appears to be limited to the Alkali Sink Ecological Reserve and the Kerman Ecological Reserve, both in Fresno County, California.

Alteration of natural habitat for farmland and pasture; farm crops in replacement of its food plants; and possible predation by domesticated animals (cats) are all reasons for this species' decline.

There is no alkali marsh habitat with the APE for this project and the proposed project site is outside of any known locations for this species. Therefore, the proposed project will not affect this species.

CONCLUSIONS

The results of this survey are that no listed or sensitive species or their associated habitats were observed within the proposed alignment. There were two sensitive biological resource areas identified along the proposed project. These locations are Owens' Creek and Mariposa Creek. Owens' creek is relatively small approximately 14 feet wide, and is dominated by willows. Also, impacts to the creek may be avoided by clear-spanning the channel.

Mariposa Creek is substantially larger, approximately 225 feet wide, and is characterized by multiple micro-habitats. These micro-habitats include open water, emergent vegetation, facultative wetland understory dominated by blackberry, and a large tree overstory dominated by willows and cottonwoods. The area of this creek crossing may support several species of concern including: pond turtle, western spadefoot toad, Swainson's hawk, and ferruginous hawk. Potential impact to these species can be minimized by timing the construction to avoid tree removal during the nesting period, to work during the active period for reptiles and amphibians, and to install exclusionary fencing around the work areas.

There are four crossings that will occur over potentially jurisdictional waters. These crossings will likely require a permit from the U.S. Army Corps of Engineers, California Department of Fish and Game, and the State Regional Water Quality Control Board. The need for permits at these locations will depend upon the methodology of crossings construction. The proposed project will permanently impact a total of approximately 0.144 acres of potential waters/streambeds.

Finally, though none were observed, the above referenced crossings have the potential to support the Federally-listed Giant Garter Snake. There are no records of garter snake east of Highway 99 in the vicinity of the project. Further, impacts to this species may be avoided by timing the construction when the species is active and has the opportunity to avoid the construction disturbance areas, and to construct the structures in a manner that would avoid disturbing their habitat.

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APPENDIX A

SPECIES LIST

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SPECIES LIST

PLANT SPECIES

Angiospermea: Dicotyledonae	**Flowering plants: Dicots**
Amarantheceae	Amaranth Family
Amaranthus sp.	Pigweed
Asteraceae	Sunflower Family
Ambrosia acanthicarpa	Ann. Bur-sage
Centaurea melitensis	Star thistle
Haploppus squarrosus	Common Sunflower
Heterotheca grandiflora	Telegraph weed
Boraginaceae	Borage Family
Amsinckia sp.	Fiddleneck
Brassicaceae	Mustard Family
Brassica sp	
Chenopodiaceae	Goosefoot Family
salsola tragus	Russian thistle (Tumbleweed)
Geraneaceae	Geranium Family
Erodium cicutarium	Filaree

Angiospermae: Monocotyledonae	**Flowering Plants: Monocots**
Poaceae	Grass Family
Avena barbata	Oats
Bromus rubens	Red brome
Bromus tectorum	Cheat grass
Bromus diandris	Ripgut
Vulpia myuros	Fescue

ANIMAL SPECIES

Reptilia	**Reptiles**
Iguanidae	Iguanids
scloperous occidentalis	Western Fence Lizard
Aves	**Birds**
Accipitridae	Hawks, Falcons, Eagles
Buteo jamaicensis	Red-tail Hawk
Carpodacus	Finches
Carpodacus purpureus	Purple finch
Carpodacus mexicanis	House finch
Columbidae	Pigeons and doves
Zenaida macroura	Mourning Dove
Corvidae	Crows and Jays
Corvus brachyrhynchos	American Crow
Alphelocoma californica	Western Scrub Jay
Emberizidae	Sparrow, Warblers, Tanangers
Melospiza melodia	Song sparrow
Mimidae	Mockingbirds and Thrashers
Mimus polyglottos	Northern mockingbird
Mammalia	**Mammals**
Leporidae	Rabbits and hares
Sylvilagus auduboni	
Sciuridae	Squirrels, chipmunks
Spermophilus beecheyi	California Ground Squirrel
Canidae	Foxes, wolves and dogs
Canis lupus familularis	Dog

APPENDIX B

CNDDB

Ambystoma californiense

California tiger salamander — Element Code: AAAAA01180

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G2G3
State: S2S3

Other Lists
CDFG Status: SC

Habitat Associations
General: CENTRAL VALLEY DPS LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS LISTED AS ENDANGERED.
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING

Occurrence No. 22 **Map Index:** 14154 **EO Index:** 28431

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1974-05-09
Site: 1974-05-09
Record Last Updated: 1989-08-10

Quad Summary: Raynor Creek (3712021/400A), Le Grand (3712022/400B)
County Summary: Merced, Mariposa

Lat/Long: 37.22852° / -120.11664°
UTM: Zone-10 N4124119 E755809
Radius: 1 mile
Elevation: 400 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 17E
Section: 21
Meridian: M
Qtr: NE

Location: 8.0 MI E LEGRAND ON RAYNOR RANCH RD, 1.0 MI E BAXTER RD. (N SIDE RD).
General: L. DUNN FIELD NOTES #17.
Owner/Manager: UNKNOWN

Occurrence No. 306 **Map Index:** 33055 **EO Index:** 3715

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1994-03-30
Site: 1994-03-30
Record Last Updated: 2001-08-16

Quad Summary: Le Grand (3712022/400B)
County Summary: Madera

Lat/Long: 37.14115° / -120.20114°
UTM: Zone-10 N4114198 E748597
Radius: 80 meters
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 16E
Section: 23
Meridian: M
Qtr: NW

Location: EAST SIDE OF WHITE ROCK ROAD, 0.95 MILE NORTH OF AVENUE 26, 6 MILES SSE OF LE GRAND.
General: COLLECTION #MW-94-12 (LARVA), DEPOSITED AT CAS (#199410).
Owner/Manager: UNKNOWN

Occurrence No. 307 **Map Index:** 33056 **EO Index:** 3719

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1994-03-30
Site: 1994-03-30
Record Last Updated: 1995-03-16

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17314° / -120.20021°
UTM: Zone-10 N4117751 E748575
Radius: 1/5 mile
Elevation: 275 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 16E
Section: 02
Meridian: M
Qtr: SW

Location: EAST SIDE OF WHITE ROCK ROAD, 0.8 MILE NORTH OF THE CHOWCHILLA RIVER, 4 MILES SSE OF LE GRAND.
General: COLLECTION #MW-94-14, DEPOSITED AT DFG-IFD. CAS# 199411, LARVA.
Owner/Manager: UNKNOWN

Ambystoma californiense

California tiger salamander — Element Code: AAAAA01180

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G2G3
State: S2S3

Other Lists
CDFG Status: SC

Habitat Associations
General: CENTRAL VALLEY DPS LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS LISTED AS ENDANGERED.
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING

Occurrence No. 309 **Map Index:** 33059 **EO Index:** 3723

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1994-03-30
Site: 1994-03-30
Record Last Updated: 1995-03-28

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.20038° / -120.22188°
UTM: Zone-10 N4120717 E746562
Radius: 80 meters
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 16E
Section: 28
Meridian: M
Qtr: SE

Location: NORTH SIDE OF BUCHANAN ROAD, 0.3 MILE WEST OF EARL ROAD, 2 MILES SE OF LE GRAND.
General: COLLECTION #RC-NC-4 WAS RELEASED SUBSEQUENT TO CAPTURE.
Owner/Manager: UNKNOWN

Occurrence No. 313 **Map Index:** 33063 **EO Index:** 3726

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1994-04-05
Site: 1994-04-05
Record Last Updated: 2001-09-10

Quad Summary: Owens Reservoir (3712032/420C), Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34681° / -120.24816°
UTM: Zone-10 N4136898 E743756
Radius: 1/5 mile
Elevation: 325 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 05
Meridian: M
Qtr: SW

Location: NORTH SIDE OF WALTZ ROAD, EAST OF CUNNINGHAM ROAD, 1.5 MILES WEST OF THE MARIPOSA/MERCED COUNTY LINE.
Location Detail: #RS-NC-3 FOUND 30M EAST OF CUNNINGHAM ROAD; #MW-94-24 AND #MW-94-25 FOUND 0.3 MILE EAST OF CUNNINGHAM ROAD.
General: COLLECTION #RS-NC-3, CAPTURED AND RELEASED; #MW-94-24, DEPOSITED AT DFG-IFD, AND #MW-94-25, DEPOSITED AT UCD. CAS# 199416, LARVA.
Owner/Manager: UNKNOWN

Occurrence No. 471 **Map Index:** 42333 **EO Index:** 42333

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-01-25
Site: 2000-01-25
Record Last Updated: 2000-03-13

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36669° / -120.43322°
UTM: Zone-10 N4138643 E727300
Area: 15.8 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 33
Meridian: M
Qtr: SE

Location: JUST SOUTH OF YOSEMITE LAKE, WEST OF LAKE ROAD, NNE OF MERCED
Location Detail: LOCATED JUST SOUTH OF THE SELLS LATERAL (IRRIGATION CANAL).
Ecological: HABITAT CONSISTS OF GRAZED GRASSLAND WITH MEMA-MOUND TOPOGRAPHY AND VERNAL POOLS, PLENTY OF BURROWS.
Threat: THREATENED BY POTENTIAL DEVELOPMENT.
General: 1 SUB-ADULT OBSERVED ON 18 JAN 2000, JUST INSIDE A GROUND SQUIRREL BURROW. AN ADULT WAS OBSERVED FLOATING IN SOME WATER PONDED IN A CULVERT ON 25 JAN 2000.
Owner/Manager: UNKNOWN

Ambystoma californiense

California tiger salamander — Element Code: AAAAA01180

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G2G3	CDFG Status: SC
State: None	State: S2S3	

Habitat Associations

General: CENTRAL VALLEY DPS LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS LISTED AS ENDANGERED.

Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING

Occurrence No. 472 **Map Index:** 42334 **EO Index:** 42334

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-01-18
Site: 2000-01-18
Record Last Updated: 2000-02-03

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35191° / -120.43009°
UTM: Zone-10 N4137010 E727622
Radius: 80 meters
Elevation: 200 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 14E
Section: 03
Meridian: M
Qtr: SW

Location: ADJACENT TO COTTONWOOD CREEK, 1 MILE SOUTH OF YOSEMITE LAKE, NE OF MERCED

Ecological: HABITAT CONSISTS OF GRAZED GRASSLAND, WITH MEMA MOUND TOPOGRAPHY AND VERNAL POOLS, CONTAINING NUMEROUS GROUND SQUIRREL BURROWS.

General: 1 SUB-ADULT OBSERVED ON 18 JAN 2000, JUST INSIDE A GROUND SQUIRREL BURROW.

Owner/Manager: UNKNOWN

Occurrence No. 492 **Map Index:** 43762 **EO Index:** 43762

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-03
Site: 2001-04-03
Record Last Updated: 2007-02-08

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.32277° / -120.25492°
UTM: Zone-10 N4134213 E743234
Radius: 80 meters
Elevation: 290 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 18
Meridian: M
Qtr: SE

Location: 0.4 MILE SSW OF HIGHWAY 140 AND CUNNINGHAM ROAD JUNCTION, ~4 MILES NE OF PLANADA.

Location Detail: SITE CUNSP4. LOCATION MAPPED IN THE NE 1/4 OF THE SE 1/4 SECTION 18.

Ecological: HABITAT CONSISTS OF A MAN-MADE SEASONAL STOCK POND SURROUNDED BY GRAZED ANNUAL GRASSLAND; NO EMERGENT VEGETATION. MUCH OF THE HABITAT IN THE EASTERN MERCED COUNTY REGIONAL STUDY AREA IS RELATIVELY UNDISTURBED AND UNFRAGMENTED.

Threat: THREATENED BY GRAZING.

General: 3 JUVENILES FOUND DURING DIPNETTING ON 5 MAY 1999. UNKNOWN NUMBER OF CTS LARVAE OBSERVED 3 APR 2001. DUE TO THE AMOUNT OF HIGH-QUALITY HABITAT, THE EASTERN MERCED COUNTY REGIONAL STUDY AREA IS IMPORTANT FOR THE CONSERVATION OF THE SPECIES.

Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 493 **Map Index:** 43764 **EO Index:** 43764

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-03
Site: 2001-04-03
Record Last Updated: 2007-07-17

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.31652° / -120.26928°
UTM: Zone-10 N4133483 E741981
Area: 7.0 acres
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 16E
Section: 18
Meridian: M
Qtr: SW

Location: TRIBUTARY TO MILES CREEK, 1.2 MILES SW OF HIGHWAY 140 AND CUNNINGHAM ROAD JUNCTION, 3.2 MILES NE OF PLANADA.

Location Detail: SITE CUNSP3 & CUNH11. LOCATION MAPPED IN THE SW 1/4 OF THE SW 1/4 SECTION 18.

Ecological: HABITAT CONSISTS OF A MAN-MADE SEASONAL STOCK POND; SURROUNDED BY GRAZED ANNUAL GRASSLAND WITH SCATTERED VERNAL POOLS. MUCH OF THE HABITAT IN THE EASTERN MERCED COUNTY REGIONAL STUDY AREA IS RELATIVELY UNDISTURBED AND UNFRAGMENTED.

Threat: THREATENED BY OVER-GRAZING.

General: 7 JUVENILES FOUND DURING DIPNETTING ON 5 MAY 1999. UNKNOWN NUMBER OF CTS LARVAE OBSERVED 3 APR 2001. DUE TO THE AMOUNT OF HIGH-QUALITY HABITAT, THE EASTERN MERCED COUNTY REGIONAL STUDY AREA IS IMPORTANT FOR THE CONSERVATION OF THE SPECIES.

Ambystoma californiense

California tiger salamander — Element Code: AAAAA01180

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G2G3
State: S2S3

Other Lists
CDFG Status: SC

Habitat Associations
General: CENTRAL VALLEY DPS LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS LISTED AS ENDANGERED.
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING

Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 658 **Map Index:** 47608 **EO Index:** 47608
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-05
Site: 2001-04-05
Record Last Updated: 2007-02-08

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35241° / -120.32557°
UTM: Zone-10 N4137323 E736880
Radius: 80 meters
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 04 **Qtr:** SE
Meridian: M

Location: 2.25 MILES SOUTH OF HAYSTACK MOUNTAIN.
Location Detail: SITE ICHSP3. LOCATED IN THE NE 1/4 OF THE SE 1/4 SECTION 4.
Ecological: HABITAT CONSISTS OF A STOCK POND IN ANNUAL GRASSLAND; NO EMERGENT VEGETATION. MUCH OF THE HABITAT IN THE EASTERN MERCED COUNTY REGIONAL STUDY AREA IS RELATIVELY UNDISTURBED AND UNFRAGMENTED.
Threat: THREATENED BY OVER-GRAZING.
General: AN UNKNOWN NUMBER OF CTS LARVAE WERE OBSERVED ON 5 APR 2001. DUE TO THE AMOUNT OF HIGH-QUALITY HABITAT, THE EASTERN MERCED COUNTY REGIONAL STUDY AREA IS IMPORTANT FOR THE CONSERVATION OF THIS SPECIES.
Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 901 **Map Index:** 68123 **EO Index:** 67374
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2006-04-13
Site: 2006-05-04
Record Last Updated: 2008-01-10

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17740° / -120.16700°
UTM: Zone-10 N4118312 E751510
Area:
Elevation: 280 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 16E
Section: 01 **Qtr:** XX
Meridian: M

Location: GREAT VALLEY CONSERVATION BANK & KNAPP RANCH, SANTA FE AVE TO BAXTER RD, N OF THE CHOWCHILLA RIVER, 6 MI NE CHOWCHILLA.
Location Detail: 1073-ACRE GREAT VALLEY CONSERVATION BANK CONTAINS ~115 ACRES OF NATURAL-OCCURRING VERNAL POOLS AND VERNAL SWALES. OBSERVED IN 17 POOLS DURING APRIL 2001. SHAFFER SITE "MARGUERITE" FROM POOL W OF RR TRACKS NEAR END OF MARGUERITE RD.
Ecological: HABITAT IS NATURAL-OCCURRING VERNAL POOLS. KNAPP RANCH IN PROCESS OF CONSERVATION EASEMENT. AREA IS GRAZED. GENETIC ANALYSIS OF 10 LARVA ON 8 MAY 2003 FOUND THE CTS TO BE HYBRIDS WITH A. TIGRINUM.
Threat: THREATS FROM ORCHARDS, ENCROACHING DEVELOPMENT, AND THE PRESENCE OF HYBRID CTS AT THE EDGE OF THIS OCCURRENCE.
General: COLLECTION MW-94-16, DEPOSITED AT DFG-IFD. MW-NC-3 CAPTURED/RELEASED. CAS 199412 (LARVA) CAPTURED 30 MAR 1994. 17 POOLS, APR 2001. SURVEYS CONDUCTED 10 & 13 APR & 4 MAY 2006; 10 ADS/10 JUVS OBS 13 APR 2006, INCIDENTAL TO VP INVERT SURVEYS
Owner/Manager: PVT-WILDLANDS INC, KNAPP RANCH

Ambystoma californiense

California tiger salamander — Element Code: AAAAA01180

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G2G3
State: S2S3

Other Lists
CDFG Status: SC

Habitat Associations
General: CENTRAL VALLEY DPS LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS LISTED AS ENDANGERED.
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING

Occurrence No. 988 **Map Index:** 69644 **EO Index:** 70424

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-XX
Site: 2001-04-XX
Record Last Updated: 2007-07-18

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.30544° / -120.26318°
UTM: Zone-10 N4132270 E742558
Radius: 80 meters
Elevation: 270 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 19
Meridian: M
Qtr: SW

Location: 0.6 MI WEST OF CUNNINGHAM ROAD, 1.7 MILES SSW THE JUNCTION OF HIGHWAY 140 AND CUNNINGHAM ROAD, 3 MILES ENE OF PLANADA.

Location Detail: POOL ID: CUNH03. LOCATION MAPPED CENTRALLY BETWEEN THE NE AND SE 1/4 OF THE SW 1/4 SECTION 19. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL. MUCH OF THE HABITAT IN THE EASTERN MERCED COUNTY REGIONAL STUDY AREA IS RELATIVELY UNDISTURBED AND UNFRAGMENTED.

General: UNKNOWN NUMBER OBSERVED DURING APRIL 2001. DUE TO THE AMOUNT OF HIGH-QUALITY HABITAT, THE EASTERN MERCED COUNTY REGIONAL STUDY AREA IS IMPORTANT FOR THE CONSERVATION OF THIS SPECIES.

Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 989 **Map Index:** 69647 **EO Index:** 70426

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-XX
Site: 2001-04-XX
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16797° / -120.13627°
UTM: Zone-10 N4117347 E754270
Area: 30.0 acres
Elevation: 315 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 08
Meridian: M
Qtr: N

Location: UP TO 0.25 MI S OF MARGUERITE RD AND 0.3-0.7 MI E OF BAXTER RD, JUST N OF THE CHOWCHILLA RIVER, 7.5 MI NE OF CHOWCHILLA.

Location Detail: POOL IDS: KNAH01, KNAH02, KNAH16, KNAH20, KNA06.1. LOCATION MAPPED IN THE NW 1/4 OF THE NE 1/4 AND THE SOUTH PORTION OF THE NE 1/4 OF THE NW 1/4 OF SECTION 8. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS. MUCH OF THE HABITAT IN THE EASTERN MERCED CO REGIONAL STUDY AREA IS RELATIVELY UNDISTURBED/UNFRAGMENTED. CURRENT/SURROUNDING LAND USE: GRAZING, ENCROACHING DEVELOPMENT. DISTURBANCE:AG/DEVELOPMENT, ORCHARDS

General: UNKNOWN NUMBER (LARVAL STAGE) OBS DURING APR 2001. DUE TO THE AMOUNT OF HIGH-QUALITY HABITAT, THE EASTERN MERCED COUNTY REGIONAL STUDY AREA IS IMPORTANT FOR THE CONSERVATION OF THIS SPECIES. KNAPP RANCH IN PROCESS OF CONSERVATION EASEMENT.

Owner/Manager: PVT-KNAPP RANCH

Ambystoma californiense

California tiger salamander — Element Code: AAAAA01180

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G2G3
State: S2S3

Other Lists
CDFG Status: SC

Habitat Associations
General: CENTRAL VALLEY DPS LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS LISTED AS ENDANGERED.
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING

Occurrence No. 990 **Map Index:** 69692 **EO Index:** 70477

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-XX
Site: 2001-04-XX
Record Last Updated: 2007-07-26

Quad Summary: Raynor Creek (3712021/400A), Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16859° / -120.12841°
UTM: Zone-10 N4117437 E754966
Area: 12.0 acres
Elevation: 320 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 09
Meridian: M
Qtr: NW

Location: 0.1 TO 0.2 MI S OF MARGUERITE RD AND 1-1.2 MI E OF BAXTER RD, JUST N THE CHOWCHILLA RIVER, 7.5 MI NE OF CHOWCHILLA.

Location Detail: POOL IDS: KNAH18, KNAH19. LOCATION MAPPED IN THE NE 1/4 OF THE NE 1/4 (SLIGHTLY INTO SECTION 8) OF SECTION 9. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS. MUCH OF THE HABITAT IN THE EASTERN MERCED CO REGIONAL STUDY AREA IS RELATIVELY UNDISTURBED/UNFRAGMENTED. CURRENT/SURROUNDING LAND USE: GRAZING, ENCROACHING DEVELOPMENT. DISTURBANCE:AG/DEVELOPMENT, ORCHARDS

General: UNKNOWN NUMBER (LARVAL STAGE) OBS DURING APR 2001. DUE TO THE AMOUNT OF HIGH-QUALITY HABITAT, THE EASTERN MERCED COUNTY REGIONAL STUDY AREA IS IMPORTANT FOR THE CONSERVATION OF THIS SPECIES. KNAPP RANCH IN PROCESS OF CONSERVATION EASEMENT.

Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 991 **Map Index:** 68310 **EO Index:** 70480

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-07-26

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.18490° / -120.15142°
UTM: Zone-10 N4119186 E752868
Area: 7.0 acres
Elevation: 310 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 06
Meridian: M
Qtr: NE

Location: 0.2 MILES WEST OF BAXTER RD AND 1 MILE NORTH OF MARGUERITE RD, N OF THE CHOWCHILLA RIVER, SE MERCED COUNTY.

Location Detail: LOCATION MAPPED IN THE NE 1/4 OF THE NE 1/4 SECTION 6. LOCATION MAPPED USING UTM COORDINATES FROM GPS.

Ecological: HABITAT CONSISTS OF NATURAL VERNAL POOLS IN ALLUVIAL TERRACE AND GRASSLANDS. RIVERBANK FORMATION WITH BANDS OF TURLOCK LAKE FORMATION. CURRENT/SURROUNDING LAND USE: GRAZING, ENCROACHING DEVELOPMENT. DISTURBANCE: AG/DEVELOPMENT/ORCHARDS.

General: UNKNOWN NUMBER OF LARVAE OBSERVED DURING 2001.

Owner/Manager: PVT-WILDLANDS INC

Athene cunicularia

burrowing owl — Element Code: ABNSB10010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S2

Other Lists
CDFG Status: SC

Habitat Associations
General: OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 347 **Map Index:** 42335 **EO Index:** 42335
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-02-01
Site: 2000-02-01
Record Last Updated: 2000-03-13

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36445° / -120.43284°
UTM: Zone-10 N4138395 E727341
Area:
Elevation: 225 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 33 **Qtr:** SE
Meridian: M

Location: SOUTH OF YOSEMITE LAKE & NORTH OF BELLEVUE ROAD, NNE OF MERCED.

Ecological: HABITAT CONSISTS OF GRAZED GRASSLAND/VERNAL POOLS. CTS ALSO FOUND IN THIS AREA.

General: 8 SEPARATE BURROWS IDENTIFIED AS BEING USED BY BURROWING OWLS (PRESENCE OF PELLETS, WHITEWASH, AND FEATHERS) WERE OBSERVED ON 18-25 JAN 2000; 3 OWLS OBSERVED ON 1 FEB 2000.

Owner/Manager: UNKNOWN

Occurrence No. 365 **Map Index:** 43761 **EO Index:** 43761
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-05-18
Site: 2000-05-18
Record Last Updated: 2000-09-14

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.31557° / -120.27207°
UTM: Zone-10 N4133370 E741738
Radius: 80 meters
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 24 **Qtr:** NE
Meridian: M

Location: 0.15 MILE SOUTH OF HIGHWAY 140 AND 3 MILES NE OF PLANADA, 1.4 MILES SW OF HIGHWAY 140 AND CUNNINGHAM ROAD JUNCTION.

Ecological: ANNUAL GRASSLAND

General: 2000: ACTIVE BURROW OBSERVED IN FIELD, WITH RECENT TRACKS AND DROPPINGS. 1 ADULT OBSERVED IN THE VICINITY IN MAY 1999.

Owner/Manager: UNKNOWN

Occurrence No. 434 **Map Index:** 47124 **EO Index:** 47124
Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-03-11
Site: 2001-03-11
Record Last Updated: 2002-01-30

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17536° / -120.14158°
UTM: Zone-10 N4118153 E753774
Area: 17.6 acres
Elevation: 320 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 05 **Qtr:** XX
Meridian: M

Location: NE OF THE INTERSECTION OF BAXTER ROAD AND MARGUERITE ROAD, EAST OF LE GRAND

Ecological: HABITAT CONSISTS OF REMNANT CENTRAL VALLEY GRASSLAND, WITH ABUNDANT VERNAL POOLS PRESENT; SURROUNDED ON ALL SIDES BY ROW CROPS OR OCHARDS. NUMEROUS GROUND SQUIRRELS AND MASSIVE BURROW COMPLEXES PRESENT. VERNAL POOL ASSOCIATES ALSO PRESENT.

General: THIS SITE IS DESTINED TO BECOME PART OF A MITIGATION BANK. 4 ADULT OWLS OBSERVED ON 11 MAR 2001.

Owner/Manager: PVT

Atriplex minuscula

lesser saltscale

Element Code: PDCHE042M0

Status	NDDB Element Ranks	Other Lists
Federal: None	**Global:** G1	**CNPS List:** 1B.1
State: None	**State:** S1.1	

Habitat Associations

General: CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro: IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 20-100M.

Occurrence No. 27 **Map Index:** 24475 **EO Index:** 56450

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1921-10-11
Site: 1921-10-11
Record Last Updated: 2004-08-19

Quad Summary: Chowchilla (3712013/401D), Plainsburg (3712023/401A)
County Summary: Madera

Lat/Long: 37.11977° / -120.26323°
UTM: Zone-10 N4111665 E743149
Radius: 3/5 mile
Elevation: 235 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 10S
Range: 16E
Section: 30 **Qtr:** XX
Meridian: M

Location: CHOWCHILLA.

General: ONLY SOURCE OF INFORMATION IS 1921 COLLECTION BY HALL (#11759 UC). NEEDS FIELDWORK. ORIGINALLY COLLECTED AS A. DEPRESSA, IDENTIFIED AS A. MINUSCULA BY PRESTON. FORMER A. DEPRESSA OCCURRENCE #24.

Owner/Manager: UNKNOWN

Branchinecta conservatio

Conservancy fairy shrimp — **Element Code:** ICBRA03010

Status	NDDB Element Ranks	Other Lists
Federal: Endangered	**Global:** G1	**CDFG Status:**
State: None	**State:** S1	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE NORTHERN TWO-THIRDS OF THE CENTRAL VALLEY; FOUND IN LARGE, TURBID POOLS.

Micro: INHABIT ASTATIC POOLS LOCATED IN SWALES FORMED BY OLD, BRAIDED ALLUVIUM; FILLED BY WINTER/SPRING RAINS, LAST UNTIL JUNE.

Occurrence No. 15 **Map Index:** 42513 **EO Index:** 42515

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-03-07
Site: 2001-03-07
Record Last Updated: 2008-01-10

Quad Summary: Planada (3712033/421D), Haystack Mtn. (3712043/421A)
County Summary: Merced

Lat/Long: 37.38077° / -120.32304°
UTM: Zone-10 N4140476 E737015
Radius: 3/5 mile
Elevation: 320 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 06S
Range: 15E
Section: 27 **Qtr:** XX
Meridian: M

Location: FLYING M RANCH, 2.5 MILES WEST OF BURNS RESERVOIR DAM, 0.5 MILE SE OF HAYSTACK MTN, SEVERAL MILES NE OF MERCED.

Location Detail: VERNAL POOLS ON THE FLYING M RANCH. B. HOLLAND LIKELY HAS POOL MAPS FOR THE RANCH. INCLUDES POOL ID FMC13 - LOCATED IN THE NW 1/4 OF THE SE 1/4 SECTION 28.

Ecological: VERNAL POOLS. AREAS INHABITED BY THIS SPECIES SHOULD BE CONSIDERED HIGH PRIORITY FOR CONSERVATION.

General: BRANCHINECTA CONSERVATIO OBSERVED ON RANCH PROPERTY, 1980'S OR 1990'S. SPECIES OBSERVED IN 1 POOL ON 7 MARCH 2001. ALSO OBSERVED LEPIDURUS PACKARDI.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 30 **Map Index:** 67722 **EO Index:** 67849

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-03-21
Site: 2001-03-21
Record Last Updated: 2008-01-10

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34937° / -120.36225°
UTM: Zone-10 N4136895 E733639
Area: 10.0 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 06 **Qtr:** SE
Meridian: M

Location: EAST OF THE LE GRAND CANAL, AND 1.7 MILES WSW OF VABM HURRICANE, 6 MILES ENE OF MERCED.

Location Detail: POOL ID: ICHC01, ICHC02. POOLS MAPPED IN THE SE 1/4 OF SECTION 6. LOCATIONS MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF 2 VERNAL POOLS. WATER QUALITY: TURBID. MAXIMUM DEPTH: 4 INCHES (ICHC01) & 6 INCHES (ICHC02). AREAS INHABITED BY THIS SPECIES SHOULD BE CONSIDERED HIGH PRIORITY FOR CONSERVATION.

General: SPECIES OBSERVED IN 2 POOLS ON 21 MARCH 2001.

Owner/Manager: PVT-ICHORD RANCH

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 151 **Map Index:** 33669 **EO Index:** 30640

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-03-24
Site: 1993-03-24
Record Last Updated: 1997-03-17

Quad Summary: Merced (3712034/421C), Yosemite Lake (3712044/421B)
County Summary: Merced

Lat/Long: 37.36839° / -120.46807°
UTM: Zone-10 N4138748 E724209
Area:
Elevation: 200 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 32 **Qtr:** XX
Meridian: M

Location: NORTH OF BELLEVUE ROAD & WEST OF GOLF ROAD. SOUTHWEST OF YOSEMITE LAKE. ABOUT 4 MILES NORTH OF MERCED.

Location Detail: VERNAL POOLS AND SEASONAL WETLANDS SOMEWHERE IN SECTION 31, VERNAL POOLS SOMEWHERE IN SECTION 32.

Ecological: NATURAL SEASONAL WETLANDS AND NATURAL VERNAL POOLS.

General: B. LYNCHI OBSERVED IN 4 OF 10 SEASONAL WETLANDS INSPECTED ON 2/24/93; IN 1 OF 4 VERNAL POOLS INSPECTED ON 3/11/93; & IN 2 OF 24 VERNAL POOLS INSPECTED ON 3/24/93. NO LEPIDURUS PACKARDI OBSERVED. SUGNET RECORD NUMBERS 48, 51 & 52.

Owner/Manager: UNKNOWN

Occurrence No. 152 **Map Index:** 67794 **EO Index:** 30641

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-23

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36625° / -120.29632°
UTM: Zone-10 N4138933 E739427
Area: 6.0 acres
Elevation: 285 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 35 **Qtr:** XX
Meridian: M

Location: WEST OF BURNS CREEK, 1.4 MILES SOUTHWEST OF THE BURNS CREEK DAM, NORTHEAST OF MERCED.

Location Detail: 1982: VERNAL POOL LOCATED SOMEWHERE IN SECTION 35 - SUGNET RECORD #53. 2001: POOL ID FM64.4 LOCATED NEAR THE CENTER OF SECTION 35. INCLUDES DIGITAL DATA.

Ecological: NATURAL VERNAL POOLS.

General: 1 FEATURE INSPECTED IN 1982 - B. LYNCHI OBSERVED, BUT NO LEPIDURUS PACKARDI OBSERVED. SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 153 **Map Index:** 33671 **EO Index:** 30660

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-02-25
Site: 1993-02-25
Record Last Updated: 1997-03-18

Quad Summary: Le Grand (3712022/400B), Plainsburg (3712023/401A)
County Summary: Merced

Lat/Long: 37.23540° / -120.24275°
UTM: Zone-10 N4124549 E744596
Radius: 3/5 mile
Elevation: 225 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 16E
Section: 17 **Qtr:** XX
Meridian: M

Location: JUST NORTHEAST OF LE GRAND.

Location Detail: WETLANDS LOCATED SOMEWHERE IN SECTION 17.

Ecological: NATURAL SEASONAL WETLANDS.

General: B. LYNCHI OBSERVED IN 3 OF 8 FEATURES INSPECTED. SUGNET RECORD #78.

Owner/Manager: UNKNOWN

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 201 **Map Index:** 69174 **EO Index:** 40883

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-25

Quad Summary: Planada (3712033/421D), Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35105° / -120.38171°
UTM: Zone-10 N4137033 E731910
Area: 513.0 acres
Elevation:
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 01 **Qtr:** XX
Meridian: M

Location: SOUTH OF LE GRAND CANAL, 2.9 MILES EAST OF LAKE RD AND 0.5 -2 MILES NORTH OF YOSEMITE AVE, ~6 MILES NE OF MERCED.

Location Detail: BLACK RASCAL CREEK VERNAL POOL COMPLEX, 1 POOL IN UPPER TERRACE COMPLEX. UNIVERSITY PARKWAY PROJECT. AREA MAPPED WITHIN THE E PORTION OF SECTION 1, THE WEST MOST PORTION OF SECTION 6, NE 1/4 SECTION 12 & BARELY INTO NW 1/4 OF SECTION 7.

Ecological: VERNAL POOLS. MIMA MOUND TOPOGRAPHY WITH MANY SWALES LOCATED WEST OF CREEK. CURRENT USE IS DRYLAND GRAZING. SIMILAR HABITATS TO WEST, NORTH, AND EAST OF COMPLEX; ORCHARDS LOCATED TO THE SOUTH.

Threat: ROAD MAINTENANCE/IMPROVEMENT, DEVELOPMENT, AGRICULTURE.

General: 98 POOLS OF THE 314 POOLS SAMPLED OCCUPIED BY LESS THAN 10 TO MORE THAN 1,000 INDIVIDUALS, 1999; UNIDENTIFIED FAIRY SHRIMP PRESENT IN 29 POOLS. SPECIES OBSERVED IN VERNAL POOLS ICH03.1, 03.4, 25.1 & 25.2, DURING 2001 CRUSTACEAN SURVEYS.

Owner/Manager: PVT-ICHORD RANCH, UNKNOWN

Occurrence No. 222 **Map Index:** 40884 **EO Index:** 40884

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-03-16
Site: 2000-03-16
Record Last Updated: 2000-11-15

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36358° / -120.43554°
UTM: Zone-10 N4138292 E727104
Area: 117.5 acres
Elevation: 220 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 33 **Qtr:** SE
Meridian: M

Location: 0.2 MILE NW OF JCT OF LAKE AND BELLEVUE ROADS, 0.3 MILE SOUTH OF YOSEMITE LAKE, ~5 MILES NNE OF MERCED.

Location Detail: BELLEVUE VERNAL POOL COMPLEX, ALONG AND IN THE PROPOSED PARKWAY. LINDERIELLA OCCIDENTALIS, B. MESOVALLENSIS ALSO PRESENT.

Ecological: HABITAT CONSISTS OF VERNAL POOLS, ANNUAL GRASSLANDS IN MIMA MOUND TOPOGRAPHY.

Threat: POOLS IN THE MAJOR PART OF THE PROPOSED PARKWAY PROJECT

General: 5 OF THE 11 POOLS SAMPLED WERE OCCUPIED BY FROM 10 TO MORE THAN 1,000 INDIVIDUALS, 1999. SHRIMP OBSERVED IN 105 POOL SITES.

Owner/Manager: PVT

Occurrence No. 223 **Map Index:** 69390 **EO Index:** 40888

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-03-16
Site: 2000-03-16
Record Last Updated: 2008-01-09

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35278° / -120.42866°
UTM: Zone-10 N4137111 E727746
Area: 51.0 acres
Elevation: 200 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 03 **Qtr:** W
Meridian: M

Location: COTTONWOOD CREEK, 0.3 MI SE TO 0.8 MI SSE JCT OF LAKE & BELLEVUE ROADS, 1 MILE S OF YOSEMITE LAKE, 4.5 MI NE OF MERCED.

Location Detail: COTTONWOOD CREEK VERNAL POOL COMPLEX. LOCATED CENTRALLY IN THE NW 1/4 AND ALSO IN THE NORTH 1/2 OF THE SW 1/4 OF SECTION 3. LINDERIELLA OCCIDENTALIS, B. MESOVALLENSIS ALSO PRESENT.

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Ecological: HABITAT CONSISTS OF VERNAL POOLS, ANNUAL GRASSLANDS IN MIMA MOUND TOPOGRAPHY. AREA ALSO INCLUDES IRRIGATED PASTURE AND IRRIGATED GOLF COURSE.

Threat: COMPLEX ALONG & IN THE PROPOSED PARKWAY. EPHEMERAL HYDROLOGY ALTERED BY GOLF COURSE & AGRICULTURE IRRIGATION.

General: 1999: 28 OF THE 60 POOLS SAMPLED WERE OCCUPIED BY 10 TO MORE THAN 1,000 INDIVIDUALS, 1 POOL HAD AN UNKNOWN FAIRY SHRIMP. 2000: SHRIMP OBSERVED IN 42 POOL SITES. NUMBER OF SHRIMP FROM 1999 ARE FOR THIS OCCURRENCE AND OCC #542 COMBINED.

Owner/Manager: PVT

Occurrence No. 249 Map Index: 43453 EO Index: 43453

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 1999-XX-XX; Site: 1999-XX-XX; Record Last Updated: 2000-08-15

Quad Summary: Planada (3712033/421D), Haystack Mtn. (3712043/421A)
County Summary: Merced

Lat/Long: 37.37282° / -120.37172°
UTM: Zone-10 N4139473 E732729
Area: 53.1 acres
Elevation:
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 31 Qtr: XX
Meridian: M

Location: UC MERCED CAMPUS PLANNING AREA, 0.5 MILE N OF BLACK RASCAL CREEK & LE GRAND CANAL CONFULENCE, ~5 MILES NNW OF PLANADA.

Threat: PROPOSED CONSTUCTION OF UC MERCED & ASSOCIATED DEVELOPMENT.

General: 20 OF 25 VERNAL POOLS SAMPLED WITH B. LYNCHI IN THE 1998-99 WET SEASON. ALSO FOUND L. PACKARDI AND B. MESOVALLIENSIS.

Owner/Manager: PVT

Occurrence No. 250 Map Index: 43457 EO Index: 43457

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 1999-XX-XX; Site: 1999-XX-XX; Record Last Updated: 2000-08-16

Quad Summary: Yosemite Lake (3712044/421B), Planada (3712033/421D), Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.37017° / -120.38032°
UTM: Zone-10 N4139158 E731975
Area: 50.5 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 36 Qtr: NE
Meridian: M

Location: UC MERCED PLANNING AREA, 2.8 MILES NNE OF BLACK RASCAL CREEK & FAIRFIELD CANAL CONFULENCE, ~7 MILES NE OF MERCED.

Threat: PROPOSED CONSTUCTION OF UC MERCED & ASSOCIATED DEVELOPMENT.

General: 19 OUT OF 25 VERNAL POOLS SAMPLED IN THIS AREA DURING THE 1998-99 WET SEASON HAD B. LYNCHI.

Owner/Manager: PVT

Occurrence No. 251 Map Index: 43459 EO Index: 43459

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 1999-XX-XX; Site: 1999-XX-XX; Record Last Updated: 2000-08-16

Quad Summary: Merced (3712034/421C), Yosemite Lake (3712044/421B)
County Summary: Merced

Lat/Long: 37.37067° / -120.39314°
UTM: Zone-10 N4139182 E730838
Area: 88.1 acres
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 36 Qtr: XX
Meridian: M

Location: UC MERCED PLANNING AREA, 2.5 MILES N OF BLACK RASCAL CREEK & FAIRFIELD CANAL CONFULENCE, ~7 MILES NE OF MERCED.

Threat: PROPOSED CONSTUCTION OF UC MERCED & ASSOCIATED DEVELOPMENT.

General: 20 OUT OF THE 30 VERNAL POOLS SAMPLED IN THIS AREA DURING THE 1998-99 WET SEASON HAD B. LYNCHI. B. MESOVALLIENSIS WAS ALSO OBSERVED.

Owner/Manager: PVT

Branchinecta lynchi

vernal pool fairy shrimp — **Element Code:** ICBRA03030

Status — **NDDB Element Ranks** — **Other Lists**

Federal: Threatened — **Global:** G3 — **CDFG Status:**

State: None — **State:** S2S3

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 252 **Map Index:** 43463 **EO Index:** 43463

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2007-07-24

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36612° / -120.40159°
UTM: Zone-10 N4138657 E730103
Area: 155.0 acres
Elevation: 280 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 35
Meridian: M
Qtr: XX

Location: UC MERCED PLANNING AREA, 1.5 MILES ESE OF LE GRAND CANAL CONFLUENCE WITH YOSEMITE LAKE, ~6.5 MILES NE OF MERCED.

Ecological: HABITAT CONSISTS OF VERNAL POOLS FORMED BY RIDGES AND SWALES. TOPOGRAPHY IS MIMA MOUND.

Threat: PROPOSED CONSTUCTION OF UC MERCED AND ASSOCIATED DEVELOPMENT.

General: 46 OUT OF THE 64 VERNAL POOLS SAMPLED IN THIS AREA DURING THE 1998-99 WET SEASON HAD B. LYNCHI. 4 POOLS AT SOUTH END OF FEATURE CONTAINED B. LYNCHI DURING MARCH 1999. B. MESOVALLIENSIS WAS ALSO OBSERVED.

Owner/Manager: PVT

Occurrence No. 253 **Map Index:** 43471 **EO Index:** 43471

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2000-08-16

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36899° / -120.41355°
UTM: Zone-10 N4138946 E729035
Area: 45.1 acres
Elevation: 230 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 35
Meridian: M
Qtr: XX

Location: UC MERCED PLANNING AREA, 0.8 MILE ESE OF LE GRAND CANAL CONFULENCE WITH YOSEMITE LAKE, ~6 MILES NE OF MERCED.

Threat: PROPOSED CONSTUCTION OF UC MERCED AND ASSOCIATED DEVELOPMENT.

General: 17 OUT OF THE 26 VERNAL POOLS SAMPLED IN THIS AREA DURING THE 1998-99 WET SEASON HAD B. LYNCHI.

Owner/Manager: PVT

Occurrence No. 254 **Map Index:** 43472 **EO Index:** 43472

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2000-08-16

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.37025° / -120.42145°
UTM: Zone-10 N4139066 E728332
Radius: 80 meters
Elevation: 270 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 06S
Range: 14E
Section: 34
Meridian: M
Qtr: NE

Location: UC MERCED PLANNING AREA, 0.4 MILE ESE OF LE GRAND CANAL CONFULENCE WITH YOSEMITE LAKE, ~6 MILES NE OF MERCED.

Threat: PROPOSED CONSTUCTION OF UC MERCED AND ASSOCIATED DEVELOPMENT.

General: 2 OUT OF THE 2 VERNAL POOLS SAMPLED AT THIS LOCATION DURING THE 1998-99 WET SEASON HAD B. LYNCHI.

Owner/Manager: PVT

Branchinecta lynchi

vernal pool fairy shrimp — **Element Code:** ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	**Global:** G3	**CDFG Status:**
State: None	**State:** S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 255 **Map Index:** 43473 **EO Index:** 43473

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2000-08-16

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36913° / -120.42603°
UTM: Zone-10 N4138931 E727930
Radius: 80 meters
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 06S
Range: 14E
Section: 34 **Qtr:** NW
Meridian: M

Location: UC MERCED PLANNING AREA, 0.3 MILE S OF LE GRAND CANAL & YOSEMITE LAKE CONFLUENCE, ~6 MILES NE OF MERCED.

Location Detail: JUST WEST OF THE LE GRAND CANAL.

Threat: PROPOSED CONSTUCTION OF UC MERCED & ASSOCIATED DEVELOPMENT.

General: 1 OUT OF THE 3 VERNAL POOLS SAMPLED AT THIS LOCATION DURING THE 1998-99 WET SEASON HAD B. LYNCHI.

Owner/Manager: PVT

Occurrence No. 276 **Map Index:** 43539 **EO Index:** 43539

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2000-08-21

Quad Summary: Yosemite Lake (3712044/421B), Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.37555° / -120.41627°
UTM: Zone-10 N4139667 E728775
Area: 38.7 acres
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 34 **Qtr:** XX
Meridian: M

Location: UC MERCED PLANNING AREA, 2.5 MILES S OF FAHRENS CREEK CROSSING OF HORNITOS RD, 0.4 MILE EAST OF YOSEMITE LAKE.

Location Detail: 1.9 MILES E TO ESE OF MERCED GOLF CLUB.

Threat: PROPOSED CONSTUCTION OF UC MERCED AND ASSOCIATED DEVELOPMENT.

General: 9 OUT OF 18 VERNAL POOLS SAMPLED AT THIS LOCATION DURING THE 1998-99 WET SEASON HAD B. LYNCHI. ALSO FOUND B. MESOVALLIENSIS AT THIS LOCATION

Owner/Manager: PVT

Occurrence No. 286 **Map Index:** 43756 **EO Index:** 43756

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-07

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.31413° / -120.27741°
UTM: Zone-10 N4133197 E741269
Area:
Elevation: 270 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 24 **Qtr:** XX
Meridian: M

Location: BOTH SIDES OF HIGHWAY 140, 2 - 3 MILES NE OF PLANADA, 1.9 MILES NORTH OF THE CHILDS AVENUE CROSSING OF LE GRAND CANAL.

Location Detail: POOL ID: CUN03.4. LOCATION MAPPED IN THE NORTH 1/2 OF SECTION 24 AND PRIMARILY IN THE SE 1/4 OF THE SE 1/4 SECTION 13.

Ecological: ANNUAL GRASSLAND WITH NUMEROUS VERNAL POOLS. AT LEAST PORTION OF LAND IS UNDER PERMANENT CONSERVATION EASEMENT.

General: 1999: FOUND IN SCATTERED POOLS THROUGHOUT THE AREA MAPPED BY LARRY SERPA OF TNC. SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES.

Owner/Manager: UNKNOWN, PVT-CUNNINGHAM RANCH

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 507 **Map Index:** 69033 **EO Index:** 69801
Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.37202° / -120.34892°
UTM: Zone-10 N4139441 E734750
Area: 8.0 acres
Elevation: 310 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 32
Meridian: M
Qtr: NE

Location: EAST OF BLACK RASCAL CREEK, 1.5 MILES SOUTHWEST OF HAYSTACK MOUNTAIN, NORTHEAST OF MERCED.
Location Detail: POOL IDS: FM77.1, FM77.2, FM77.3, FM77.4. MAPPED IN THE NW 1/4 OF THE NE 1/4 SECTION 32. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.
Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 508 **Map Index:** 69043 **EO Index:** 69811
Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.37327° / -120.35423°
UTM: Zone-10 N4139567 E734276
Area: 6.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 32
Meridian: M
Qtr: NW

Location: EAST OF BLACK RASCAL CREEK, 1.7 MILES SOUTHWEST OF HAYSTACK MOUNTAIN, NORTHEAST OF MERCED.
Location Detail: POOL IDS: FM49.1, FM49.2, FM49.3 & FM49.4. MAPPED IN THE NE 1/4 OF THE NW 1/4 SECTION 32. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.
Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 509 **Map Index:** 69044 **EO Index:** 69812
Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36439° / -120.35840°
UTM: Zone-10 N4138570 E733934
Area: 16.0 acres
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 32
Meridian: M
Qtr: SW

Location: 0.8 MI EAST OF THE INTERSECION OF BLACK RASCAL CK & LE GRAND CANAL, 1.5 MI NORTHWEST OF VABM HURRICANE, NE OF MERCED.
Location Detail: POOL IDS: FM50.1, FM50. & FM51.4. MAPPED IN THE NW AND SW 1/4 OF THE SW 1/4 OF SECTION 32. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.
Owner/Manager: PVT-FLYING M RANCH

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 510 **Map Index:** 69045 **EO Index:** 69813

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 2001-XX-XX; Site: 2001-XX-XX; Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36231° / -120.34970°
UTM: Zone-10 N4138361 E734711
Area: 6.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 32
Meridian: M
Qtr: SE

Location: 1.2 MI DIRECTLY EAST OF THE INTERSECTION OF BLACK RASCAL CK AND LE GRAND CANAL, 1 MI NW OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL IDS: FM52.1 & FM52.4. MAPPED IN THE SW 1/4 OF THE SE 1/4 OF SECTION 32. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 511 **Map Index:** 69046 **EO Index:** 69814

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 2001-XX-XX; Site: 2001-XX-XX; Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.37177° / -120.33355°
UTM: Zone-10 N4139452 E736112
Area: 14.0 acres
Elevation: 340 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 33
Meridian: M
Qtr: N

Location: 1 MILE SSW OF HAYSTACK MOUNTAIN AND 1.2 MILES NORTH OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM57.1, FM57.2, FM57.3 & FM57.4. MAPPED IN THE NE 1/4 OF THE NW 1/4 AND NW 1/4 OF THE NE 1/4 OF SECTION 33. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 512 **Map Index:** 69051 **EO Index:** 69818

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 2001-XX-XX; Site: 2001-XX-XX; Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36637° / -120.34084°
UTM: Zone-10 N4138834 E735483
Radius: 80 meters
Elevation: 305 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 06S
Range: 15E
Section: 33
Meridian: M
Qtr: SW

Location: 1.5 MILE SSW OF HAYSTACK MOUNTAIN AND 0.9 MILES NORTHWEST OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL ID: FM54.4. MAPPED IN THE NW 1/4 OF THE SW 1/4 OF SECTION 33. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 513 **Map Index:** 69053 **EO Index:** 69821

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36167° / -120.34091°
UTM: Zone-10 N4138312 E735491
Area: 7.0 acres
Elevation: 280 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 33 **Qtr:** SW
Meridian: M

Location: 1.75 MILES SSW OF HAYSTACK MOUNTAIN AND 0.6 MILES NORTHWEST OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM53.1, FM53.2 & FM53.3. MAPPED IN THE SW 1/4 OF THE SW 1/4 OF SECTION 33. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 514 **Map Index:** 69058 **EO Index:** 69829

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36545° / -120.33361°
UTM: Zone-10 N4138750 E736126
Area: 15.0 acres
Elevation: 345 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 33 **Qtr:** S
Meridian: M

Location: 1.4 MILES SOUTH OF HAYSTACK MOUNTAIN AND 0.7 MILE DIRECTLY NORTH OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM55.1, FM55.3 & FM55.4. MAPPED IN THE NE 1/4 OF THE SW 1/4 AND THE NW 1/4 OF THE SE 1/4 OF SECTION 33. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 515 **Map Index:** 69059 **EO Index:** 69830

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36779° / -120.32002°
UTM: Zone-10 N4139044 E737323
Area: 6.0 acres
Elevation: 325 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 34 **Qtr:** W
Meridian: M

Location: 1.3 MILES SSE OF HAYSTACK MOUNTAIN AND 1.1 MILES NORTHEAST OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM59.2 & FM59.3. MAPPED CENTRALLY IN THE SOUTH HALF OF THE NW 1/4 AND NORTH HALF OF THE SW 1/4 OF SECTION 34. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 516 **Map Index:** 69063 **EO Index:** 69835

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36378° / -120.32334°
UTM: Zone-10 N4138590 E737041
Area: 5.0 acres
Elevation: 295 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 34
Meridian: M
Qtr: SW

Location: 1.5 MILES SSE OF HAYSTACK MOUNTAIN AND 0.8 MILE NORTHEAST OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM58.3 & FM58.4. MAPPED CENTRALLY IN THE WEST HALF OF THE SW 1/4 SECTION 34. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 517 **Map Index:** 69064 **EO Index:** 69836

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36036° / -120.31578°
UTM: Zone-10 N4138230 E737722
Area: 6.0 acres
Elevation: 280 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 34
Meridian: M
Qtr: S

Location: 1.8 MILES SSE OF HAYSTACK MOUNTAIN AND 1 MILE ENE OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM73.1, FM73.2 & FM73.4. MAPPED IN THE SE 1/4 OF THE SW 1/4 AND SW 1/4 OF THE SE 1/4 OF SECTION 34. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 518 **Map Index:** 69090 **EO Index:** 69864

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35952° / -120.32069°
UTM: Zone-10 N4138125 E737289
Area: 7.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 03
Meridian: M
Qtr: NW

Location: 1.8 MILES SSE OF HAYSTACK MOUNTAIN AND 0.75 MILE ENE OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM74.2, FM74.3 & FM74.4. MAPPED IN THE NW 1/4 OF THE NW 1/4 OF SECTION 3. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Branchinecta lynchi

vernal pool fairy shrimp — **Element Code:** ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	**Global:** G3	**CDFG Status:**
State: None	**State:** S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 519 **Map Index:** 69091 **EO Index:** 69865

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35474° / -120.31927°
UTM: Zone-10 N4137598 E737430
Area: 6.0 acres
Elevation: 295 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 03
Meridian: M
Qtr: NW

Location: 0.8 MILE DIRECTLY EAST OF VABM HURRICANE AND 1 MILE WEST OF BURNS CREEK, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM60.1, FM60.2, FM60.3 & FM60.4. MAPPED IN THE SE 1/4 OF THE NW 1/4 OF SECTION 3. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 520 **Map Index:** 69092 **EO Index:** 69866

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34849° / -120.31638°
UTM: Zone-10 N4136911 E737706
Area: 6.0 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 03
Meridian: M
Qtr: SW

Location: 1 MILE ESE OF VABM HURRICANE AND 0.5 MILE WEST OF BURNS CREEK, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM72.1 & FM72.3. ALONG TRIBUTARY TO BURNS CREEK. MAPPED IN THE SW 1/4 OF THE SE 1/4 OF SECTION 3. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 521 **Map Index:** 67766 **EO Index:** 69867

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35399° / -120.30652°
UTM: Zone-10 N4137547 E738562
Area: 7.0 acres
Elevation: 273 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 03
Meridian: M
Qtr: NE

Location: 0.2 MILE WEST OF BURNS CREEK AND 1.5 MILES DIRECTLY EAST OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM71.1, FM71.2 & FM71.4. ALONG TRIBUTARY TO BURNS CREEK. MAPPED IN THE SE 1/4 OF THE NE 1/4 OF SECTION 3. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status — **NDDB Element Ranks** — **Other Lists**

Federal: Threatened — **Global:** G3 — **CDFG Status:**

State: None — **State:** S2S3

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 522 **Map Index:** 69093 **EO Index:** 69868

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36474° / -120.30919°
UTM: Zone-10 N4138732 E738292
Area: 8.0 acres
Elevation: 270 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 34 **Qtr:** SE
Meridian: M

Location: APPROXIMATELY 0.75 MILE WEST (AT CLOSEST POINT) OF BURNS CREEK AND 1.5 MILES ENE OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM61.1, FM61.3 & FM61.4. MAPPED IN THE NE 1/4 OF THE SE 1/4 SECTION 34. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 523 **Map Index:** 69094 **EO Index:** 69870

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36223° / -120.30203°
UTM: Zone-10 N4138473 E738933
Area: 8.0 acres
Elevation: 280 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 35 **Qtr:** SW
Meridian: M

Location: 1.8 MILES ENE OF VABM HURRICANE AND 1.8 MILES SOUTHWEST OF THE BURNS CK DAM, 0.25 MILE WEST OF BURNS CK, NE OF MERCED.

Location Detail: 1982: VERNAL POOL LOCATED SOMEWHERE IN SECTION 35 - SUGNET RECORD #53. 2001 POOL IDS: FM63.1, FM63.2, FM63.3 & FM63.4. MAPPED CENTRALLY IN THE SOUTH HALF OF THE SW 1/4 OF SECTION 35. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: 1 POOL WITH B.LYNCHI OBSERVED IN 1982. SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 524 **Map Index:** 69123 **EO Index:** 69900

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35273° / -120.29970°
UTM: Zone-10 N4137424 E739170
Area: 7.0 acres
Elevation: 260 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 02 **Qtr:** W
Meridian: M

Location: 0.15 MILE EAST OF BURNS CREEK AND 2.1 MILES DOWNSTREAM FROM THE BURNS CREEK DAM, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM69.1, FM69.3 &, FM69.4. MAPPED IN THE SE 1/4 OF THE NW 1/4 AND NE 1/4 OF THE SW 1/4 OFSECTION 2. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	**Global:** G3	**CDFG Status:**
State: None	**State:** S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 525 **Map Index:** 69125 **EO Index:** 69903

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35185° / -120.28400°
UTM: Zone-10 N4137366 E740564
Area: 8.0 acres
Elevation: 280 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 01 **Qtr:** SW
Meridian: M

Location: EAST AND WEST OF TRIBUTARY TO BEAR CREEK (NORTH OF BEAR CK), 1.8 MILES SOUTH OF THE BURNS CREEK DAM, NORTHEAST OF MERCED

Location Detail: POOL IDS: FM68.1, FM68.2 & FM68.4. MAPPED IN THE NW 1/4 OF THE SW 1/4 OF SECTION 1. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 526 **Map Index:** 69136 **EO Index:** 69911

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-01

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35456° / -120.27896°
UTM: Zone-10 N4137680 E741002
Radius: 80 meters
Elevation: 298 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 01 **Qtr:** N
Meridian: M

Location: EAST OF TRIBUTARY TO BEAR CREEK (NORTH OF BEAR CK), 1.5 MILES NEAR DIRECT SOUTH OF THE BURNS CREEK DAM, NE OF MERCED

Location Detail: POOL ID: FM75.4. MAPPED IN THE SE 1/4 OF THE NW 1/4 AND THE SW 1/4 OF THE NE 1/4 SECTION 1. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 527 **Map Index:** 69137 **EO Index:** 69913

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-01

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36215° / -120.28251°
UTM: Zone-10 N4138513 E740663
Radius: 80 meters
Elevation: 280 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 06S
Range: 15E
Section: 36 **Qtr:** SW
Meridian: M

Location: EAST OF BURNS CREEK, 1.1 MILES SOUTH OF THE BURNS CREEK DAM, NE OF MERCED

Location Detail: POOL ID: FM67.1. MAPPED IN THE SE 1/4 OF THE SW 1/4 SECTION 36. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Branchinecta lynchi

vernal pool fairy shrimp — **Element Code:** ICBRA03030

Status — **NDDB Element Ranks** — **Other Lists**

Federal: Threatened — **Global:** G3 — **CDFG Status:**

State: None — **State:** S2S3

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 528 **Map Index:** 69138 **EO Index:** 69914

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-01

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36704° / -120.27442°
UTM: Zone-10 N4139076 E741364
Area: 17.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 36 **Qtr:** E
Meridian: M

Location: EAST OF BURNS CREEK, 0.6-0.9 MILE DIRECTLY SOUTH OF THE BURNS CREEK DAM, NE OF MERCED

Location Detail: POOL IDS: FM65.1, FM65.2, FM65.3, FM65.4, FM66.3, & FM66.4. MAPPED IN THE SOUTH PORTION OF THE NE 1/4 AND THE NW 1/4 OF THE SE 1/4 SECTION 36. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 529 **Map Index:** 69173 **EO Index:** 69952

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-03-11
Site: 1999-03-11
Record Last Updated: 2007-05-04

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34953° / -120.41402°
UTM: Zone-10 N4136785 E729053
Radius: 80 meters
Elevation: 207 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 14E
Section: 02 **Qtr:** SW
Meridian: M

Location: 1 MILE EAST (AND JUST NORTH) THE JUNCTION OF CARDELLA ROAD AND LAKE ROAD, SOUTHWEST OF THE FAIRFIELD CANAL, NE OF MERCED

Location Detail: OUTLIER POOL COMPLEX - 40 ACRE WATERSHED SEPARATED FROM COTTONWOOD COMPLEX BY AGRICULTURE AND IRRIGATED PASTURE. LOCATION MAPPED IN THE SW 1/4 OF THE SW 1/4 SECTION 2.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: OBSERVED IN 1 VERNAL POOL ON 11 MARCH 1999. OUTLIER POOL COMPLEX - POOL LOCATED WITHIN 40 ACRE WATERSHED SEPARATED FROM COTTONWOOD COMPLEX BY AGRICULTURE AND IRRIGATED PASTURE.

Owner/Manager: UNKNOWN

Occurrence No. 531 **Map Index:** 69228 **EO Index:** 69994

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-16

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35132° / -120.39334°
UTM: Zone-10 N4137034 E730879
Area: 390.0 acres
Elevation:
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 01 **Qtr:** XX
Meridian: M

Location: NORTH AND SOUTH OF LE GRAND CANAL, 2.1 MI EAST OF LAKE ROAD & 0.9 -1.8 MI NORTH OF YOSEMITE AVE, ~6 MILES NE OF MERCED.

Location Detail: UPPER TERRACE VERNAL POOL COMPLEX, UNIVERSITY PARKWAY PROJECT. AREA MAPPED WITHIN THE NE 1/4 OF SECTION 2, THE WEST HALF OF SECTION 1, NE AND SE 1/4 OF NE 1/4 SECTION 11, AND NW 1/4 SECTION 12. OTHER POOLS IN COMPLEX LOCATED TO WEST.

Ecological: VERNAL POOLS ASSOCIATED WITH RIDGES AND SWALES IN MIMA MOUND TOPOGRAPHY. POOLS MAINLY FOUND ON RIDGE-TOP TERRACES. CURRENT USE IS DRYLAND GRAZING. ORCHARDS TO S, CULTIVATED GRAIN TO SW, ANNUAL GRASSLAND/VERNAL POOL TO N AND E.

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Threat: ROAD MAINTENANCE/IMPROVEMENT, DEVELOPMENT, AGRICULTURE.

General: 1999: 28 OF THE 127 POOLS SAMPLED OCCUPIED BY LESS THAN 10 TO MORE THAN 1,000 INDIVIDUALS; SOME FAIRY SHRIMP UNIDENTIFIED DUE TO DISTURBED FLAGGING/DRY POOLS. SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS.

Owner/Manager: PVT-ICHORD RANCH, UNKNOWN

Occurrence No. 533 **Map Index:** 69289 **EO Index:** 70073

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-16

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35339° / -120.36470°
UTM: Zone-10 N4137335 E733410
Area: 18.0 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 06 **Qtr:** NE
Meridian: M

Location: 0.5 - 0.9 MI SE OF JUNCTION OF BLACK RASCAL CK/LE GRAND CANAL, 1.5 - 1.9 MI DIRECTLY W OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL IDS: ICH10.1, ICH10.2, ICH11.3, ICH12.1, ICH12.3. MAPPED IN THE SOUTH HALF OF THE NE 1/4 SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 534 **Map Index:** 69290 **EO Index:** 70075

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-16

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34249° / -120.36967°
UTM: Zone-10 N4136113 E733003
Area: 14.0 acres
Elevation: 230 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 07 **Qtr:** N
Meridian: M

Location: 1.2 - 1.5 MILES SOUTH OF JUNCTION OF BLACK RASCAL CK AND LE GRAND CANAL, 2.2 MILES WSW OF VABM HURRICANE, NE OF MERCED

Location Detail: POOL IDS: ICH07.2, ICH08.3, ICH09.3. MAPPED CENTRALLY IN THE NORTH HALF SECTION 7. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-ICHORD RANCH

Branchinecta lynchi

vernal pool fairy shrimp — **Element Code:** ICBRA03030

Status — **NDDB Element Ranks** — **Other Lists**

Federal: Threatened — **Global:** G3 — **CDFG Status:**

State: None — **State:** S2S3

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 535 **Map Index:** 69292 **EO Index:** 70076

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-16

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34939° / -120.36110°
UTM: Zone-10 N4136900 E733741
Area: 11.0 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 06 **Qtr:** XX
Meridian: M

Location: 1.1 MILES SE OF THE INTERSECTION OF BLACK RASCAL CK AND LE GRAND CANAL, 1.6 MILES WSW OF VABM HURRICANE, NE OF MERCED

Location Detail: POOL IDS: ICH13.1, ICH13.4. MAPPED IN THE SE 1/4 OF THE SE 1/4 SECTION 6 AND THE SW 1/4 OF THE SW 1/4 SECTION 5. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 536 **Map Index:** 69293 **EO Index:** 70077

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35420° / -120.34981°
UTM: Zone-10 N4137461 E734726
Area: 21.0 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 05 **Qtr:** N
Meridian: M

Location: 1.3 MILES ESE OF THE INTERSECTION OF BLACK RASCAL CK & LE GRAND CANAL, 0.9 MILES WEST VABM HURRICANE, NE OF MERCED.

Location Detail: POOL IDS: ICH14.1, ICH14.2, ICH15.1, ICH15.2, ICH15.3, ICH16.2. MAPPED CENTRALLY IN THE E 1/2 OF THE NW 1/4 AND IN THE NE 1/4 OF SECTION 5. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 537 **Map Index:** 69295 **EO Index:** 70078

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-16

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35383° / -120.33874°
UTM: Zone-10 N4137448 E735708
Area: 24.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 04 **Qtr:** W
Meridian: M

Location: 0.4 MILE WNW AND 0.2-0.3 MILE SW OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL IDS: ICH17.1, ICH17.2, ICH17.3, ICH17.4, ICH18.2, ICH20.2, ICH21.4. ONE POOL MAPPED CENTRALLY IN THE WEST 1/2 OF THE NW 1/4 - REMAINING POOLS MAPPED CENTRALLY IN THE WEST 1/2 OF SECTION 4. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-ICHORD RANCH

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 538 **Map Index:** 69301 **EO Index:** 70083
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-17

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36060° / -120.33333°
UTM: Zone-10 N4138213 E736166
Area: 15.0 acres
Elevation: 325 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 33 **Qtr:** XX
Meridian: M

Location: 0.2-0.5 MILE NORTH OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL IDS: ICH19.2, ICH19.3, FM56.2, FM56.3. MAPPED CENTRALLY IN THE SOUTHERNMOST PART OF SECTION 33 AND IN THE NE 1/4 OF THE NW 1/4 SECTION 4. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-ICHORD, FLYING M RANCH

Occurrence No. 542 **Map Index:** 69387 **EO Index:** 70147
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-03-XX
Site: 1999-03-XX
Record Last Updated: 2007-05-24

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36050° / -120.42226°
UTM: Zone-10 N4137982 E728289
Area: 19.0 acres
Elevation: 210 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 03 **Qtr:** NE
Meridian: M

Location: ABOUT 0.5 MILE EAST OF THE JUNCTION OF LAKE ROAD AND BELLEVUE ROAD, WEST OF THE FAIRFIELD CANAL, NORTHEAST OF MERCED.

Location Detail: COTTONWOOD CREEK VERNAL POOL COMPLEX. LOCATED PRIMARILY IN THE NW 1/4 OF THE NE 1/4 SECTION 3. LINDERIELLA OCCIDENTALIS ALSO PRESENT.

Ecological: HABITAT CONSISTS OF VERNAL POOLS, ANNUAL GRASSLANDS IN MIMA MOUND TOPOGRAPHY. AREA ALSO INCLUDES IRRIGATED PASTURE AND IRRIGATED GOLF COURSE GREENS.

Threat: COMPLEX ALONG & IN THE PROPOSED PARKWAY. EPHEMERAL HYDROLOGY ALTERED BY GOLF COURSE & AGRICULTURE IRRIGATION.

General: 1999: 28 POOLS OF THE 60 POOLS SAMPLED WERE OCCUPIED BY 10 TO MORE THAN 1,000 INDIVIDUALS, 1 POOL HAD AN UNK FAIRY SHRIMP. NUMBERS OF SHRIMP ARE FOR THIS OCCURRENCE AND OCCURRENCE #223 COMBINED.

Owner/Manager: PVT

Occurrence No. 553 **Map Index:** 67834 **EO Index:** 70213
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-30

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.31872° / -120.26146°
UTM: Zone-10 N4133747 E742668
Radius: 80 meters
Elevation: 290 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 18 **Qtr:** S
Meridian: M

Location: JUST NORTH OF MILES CREEK, 0.8 MILE SOUTHWEST OF THE JUNCTION OF HIGHWAY 140 AND CUNNINGHAM ROAD, 3.6 MI NE OF PLANADA

Location Detail: POOL ID: CUN05.3. MAPPED CENTRALLY IN THE SOUTH 1/2 OF SECTION 18. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF AVERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Branchinecta lynchi

vernal pool fairy shrimp

Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 554 **Map Index:** 69438 **EO Index:** 70216
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-30

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.31451° / -120.26665°
UTM: Zone-10 N4133267 E742221
Area: 23.0 acres
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 16E
Section: 19 **Qtr:** NW
Meridian: M

Location: ALONG MILES CREEK, ABOUT 1.2 MI SOUTHWEST OF THE JUNCTION OF HIGHWAY 140 AND CUNNINGHAM RD, 3.3 MI NE OF PLANADA

Location Detail: POOL IDS: CUN04.1, CUN04.3, CUN04.4, CUN10.1, & CUN10.4. MAPPED IN THE NW 1/4 OF SECTION 19. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 555 **Map Index:** 69443 **EO Index:** 70221
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-31

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.30855° / -120.26219°
UTM: Zone-10 N4132616 E742635
Radius: 80 meters
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 19 **Qtr:** SW
Meridian: M

Location: SOUTH OF MILES CREEK, 1.4 MILES SOUTHWEST THE JUNCTION OF HIGHWAY 140 AND CUNNINGHAM ROAD, 3.3 MILES ENE OF PLANADA.

Location Detail: POOL ID: CUN12.3. MAPPED IN THE NE 1/4 OF THE SW 1/4 OF SECTION 19. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 556 **Map Index:** 69451 **EO Index:** 70230
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-31

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.30328° / -120.26004°
UTM: Zone-10 N4132037 E742843
Radius: 80 meters
Elevation: 305 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 19 **Qtr:** SE
Meridian: M

Location: SOUTH OF MILES CREEK, 1.7 MILES SSW OF THE JUNCTION OF HIGHWAY 140 AND CUNNINGHAM ROAD, 3.3 MILES ENE OF PLANADA.

Location Detail: POOL ID: CUN13.2. MAPPED IN THE SW 1/4 OF THE SE 1/4 OF SECTION 19. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 557 **Map Index:** 69452 **EO Index:** 70232

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-31

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.29530° / -120.26849°
UTM: Zone-10 N4131131 E742119
Radius: 80 meters
Elevation: 260 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 30 **Qtr:** NW
Meridian: M

Location: SOUTH OF MILES CREEK, 1.1 MILES NORTHWEST OF THE JUNCTION OF CUNNINGHAM ROAD & CHILDS AVENUE, 2.5 MILES ENE OF PLANADA.

Location Detail: POOL ID: CUN07.2. MAPPED IN THE SW 1/4 OF THE NW 1/4 OF SECTION 30. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 559 **Map Index:** 69456 **EO Index:** 70235

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-05-31

Quad Summary: Owens Reservoir (3712032/420C), Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.31912° / -120.24362°
UTM: Zone-10 N4133838 E744247
Area: 35.0 acres
Elevation: 295 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 16E
Section: 17 **Qtr:** S
Meridian: M

Location: 0.7 MILE SOUTH TO 0.8 MILE SOUTHEAST OF THE JUNCTION OF HIGHWAY 140 AND CUNNINGHAM ROAD, 4.5 MILES NORTHEAST OF PLANADA.

Location Detail: POOL ID: CUN01.1, CUN01.4, CROA08.1, CROA09.2, CROA09.3, CROA09.4, & CROA10.3. MAPPED IN THE SOUTH 1/2 OF SECTION 17. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-CROOKHAM &CUNNINGHAM RANCH

Occurrence No. 574 **Map Index:** 69493 **EO Index:** 70273

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.18307° / -120.15481°
UTM: Zone-10 N4118973 E752573
Area: 13.0 acres
Elevation: 310 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 06 **Qtr:** NE
Meridian: M

Location: 0.4 MILE WEST OF BAXTER ROAD AND 0.7 - 0.9 MILE NORTH OF MARGUERITE ROAD, 7 MILES NORTHEAST OF CHOWCHILLA.

Location Detail: POOL IDS: FLY02.1, FLY02.2, FLY02.3. MAPPED PRIMARILY IN THE NW 1/4 OF THE NE 1/4 OF SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF NATURAL VERNAL POOLS WITHIN GRASSLANDS ON ALLUVIAL TERRACE. RIVERBANK FORMATION WITH BANDS OF TURLOCK FORMATION. AREA IS GRAZED LAND SURROUNDED BY AGRICULTURE, ORCHARDS, AND ENCROACHING DEVELOPMENT.

Branchinecta lynchi

vernal pool fairy shrimp — **Element Code:** ICBRA03030

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	**Global:** G3	**CDFG Status:**
State: None	**State:** S2S3	

Habitat Associations

General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.

Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-WILDLANDS INC

Occurrence No. 575 **Map Index:** 69495 **EO Index:** 70274

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17721° / -120.15476°
UTM: Zone-10 N4118323 E752597
Area: 38.0 acres
Elevation: 310 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 06 **Qtr:** XX
Meridian: M

Location: GENERAL AREA OF 0.6 MILE NORTHWEST OF THE JUNCTION OF BAXTER ROAD & MARGUERITE ROAD, 7 MILES NORTHEAST OF CHOWCHILLA.

Location Detail: POOL IDS: FLY08.1, FLY08.2, FLY08.3, FLY08.4, FLY09.1, FLY09.2, FLY09.3, FLY09.4, FLY10.1, FLY10.3. MAPPED PRIMARILY IN THE SE 1/4 OF THE NE 1/4, THE NW 1/4 OF THE SE 1/4 & E PART OF SW 1/4 OF SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF NATURAL VERNAL POOLS WITHIN GRASSLANDS ON ALLUVIAL TERRACE. RIVERBANK FORMATION WITH BANDS OF TURLOCK FORMATION. AREA IS GRAZED LAND SURROUNDED BY AGRICULTURE, ORCHARDS, AND ENCROACHING DEVELOPMENT.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-WILDLANDS INC

Occurrence No. 576 **Map Index:** 69497 **EO Index:** 70276

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17689° / -120.16824°
UTM: Zone-10 N4118251 E751401
Area: 28.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 16E
Section: 01 **Qtr:** XX
Meridian: M

Location: 0.3 - 0.5 MILE NORTH OF MARGUERITE RD AND 1 - 1.4 MILES WEST OF BAXTER ROAD, 6.2 MILES NORTHEAST OF CHOWCHILLA.

Location Detail: POOL IDS: FLY04.1, FLY04.3, FLY04.4, FLY05.1, FLY05.2, FLY05.3, FLY05.4, FLY07.1, FLY07.2. MAPPED IN THE NW AND NE 1/4 OF THE SE 1/4 OF SECTION 1 AND THE NW 1/4 OF THE SW 1/4 OF SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF NATURAL VERNAL POOLS WITHIN GRASSLANDS ON ALLUVIAL TERRACE. RIVERBANK FORMATION WITH BANDS OF TURLOCK FORMATION. AREA IS GRAZED LAND SURROUNDED BY AGRICULTURE, ORCHARDS, AND ENCROACHING DEVELOPMENT.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-WILDLANDS INC

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Occurrence No. 577 Map Index: 69498 EO Index: 70277
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16935° / -120.16565°
UTM: Zone-10 N4117421 E751656
Area: 38.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 07 Qtr: XX
Meridian: M

Location: NORTH AND SOUTH OF MARGUERITE RD, 0.9 - 1.4 MILES WEST OF BAXTER ROAD, 6 MILES NORTHEAST OF CHOWCHILLA.

Location Detail: POOL ID: FLY06.2, FLY06.4, KNA01.3, KNA01.4, KNA02.1, KNA02.2, KNA02.3, KNA02.4. MAPPED IN THE SE 1/4 OF SE 1/4 OF SECTION 1, NW 1/4 OF THE NE 1/4 & NE 1/4 OF NE 1/4 OF SECTION 12, & NW 1/4 OF NW 1/4 OF SEC 7. MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF NATURAL VERNAL POOLS WITHIN GRASSLANDS ON ALLUVIAL TERRACE. RIVERBANK FORMATION WITH BANDS OF TURLOCK FORMATION. AREA IS GRAZED LAND SURROUNDED BY AGRICULTURE, ORCHARDS, AND ENCROACHING DEVELOPMENT.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-WILDLANDS INC, KNAPP RANCH

Occurrence No. 578 Map Index: 69499 EO Index: 70278
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17004° / -120.15518°
UTM: Zone-10 N4117527 E752584
Area: 10.0 acres
Elevation: 311 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 07 Qtr: NE
Meridian: M

Location: JUST SOUTH OF MARGUERITE RD, 0.4 MILE WEST OF THE JUNCTION OF MARGUERITE RD AND BAXTER RD, 6.5 MILES NE OF CHOWCHILLA.

Location Detail: POOL IDS: KNA03.2, KNA03.4, & KNA04.2. MAPPED IN THE NW 1/4 OF NE 1/4 OF SECTION 7. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF NATURAL VERNAL POOLS WITHIN GRASSLANDS ON ALLUVIAL TERRACE. RIVERBANK FORMATION WITH BANDS OF TURLOCK FORMATION. AREA IS GRAZED LAND SURROUNDED BY AGRICULTURE, ORCHARDS, AND ENCROACHING DEVELOPMENT.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 579 Map Index: 69502 EO Index: 70280
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16862° / -120.14662°
UTM: Zone-10 N4117391 E753348
Radius: 80 meters
Elevation: 312 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 17E
Section: 08 Qtr: NW
Meridian: M

Location: 0.15 MILE SSE OF THE JUNCTION OF MARGUERITE RD AND BAXTER RD, 6.8 MILES NE OF CHOWCHILLA.

Location Detail: POOL ID: KNA05.2. MAPPED IN THE NW 1/4 OF NW 1/OF SECTION 8. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A NATURAL VERNAL POOL WITHIN GRASSLANDS ON ALLUVIAL TERRACE. RIVERBANK FORMATION WITH BANDS OF TURLOCK FORMATION. AREA IS GRAZED LAND SURROUNDED BY AGRICULTURE, ORCHARDS, AND ENCROACHING DEVELOPMENT.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Branchinecta lynchi

vernal pool fairy shrimp — Element Code: ICBRA03030

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.
Micro: INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 580 Map Index: 69503 EO Index: 70282
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16861° / -120.13944°
UTM: Zone-10 N4117409 E753986
Area: 10.0 acres
Elevation: 315 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 08
Meridian: M
Qtr: NW

Location: 0.1 - 0.2 MI SOUTH OF MARGUERITE RD, 0.4 MI EAST OF THE JUNCTION OF MARGUERITE RD & BAXTER RD, 7 MILES NE OF CHOWCHILLA

Location Detail: POOL IDS: KNA06.1 & KNA06.3. MAPPED IN THE NE 1/4 OF NW 1/4 OF SECTION 8 - JUST EAST OF BRETZER ROAD. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF NATURAL VERNAL POOLS WITHIN GRASSLANDS ON ALLUVIAL TERRACE. RIVERBANK FORMATION WITH BANDS OF TURLOCK FORMATION. AREA IS GRAZED LAND SURROUNDED BY AGRICULTURE, ORCHARDS, AND ENCROACHING DEVELOPMENT.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 581 Map Index: 69505 EO Index: 70284
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16756° / -120.12784°
UTM: Zone-10 N4117325 E755020
Area: 8.0 acres
Elevation: 324 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 09
Meridian: M
Qtr: NW

Location: 0.2 MI S OF MARGUERITE RD, 1 MI E JCT OF MARGUERITE RD/BAXTER RD, JUST N OF THE CHOWCHILLA RIVER,7.8 MI NE OF CHOWCHILLA

Location Detail: POOL IDS: KNA07.1 & KNA07.3. MAPPED IN THE NW 1/4 OF NW 1/4 OF SECTION 9. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF NATURAL VERNAL POOLS WITHIN GRASSLANDS ON ALLUVIAL TERRACE. RIVERBANK FORMATION WITH BANDS OF TURLOCK FORMATION. AREA IS GRAZED LAND SURROUNDED BY AGRICULTURE, ORCHARDS, AND ENCROACHING DEVELOPMENT.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY STUDY AREA PROVIDES EXCELLENT HABITAT FOR THE SPECIES. HABITAT DIVERSE DUE TO THE VARIED FORMATIONS AND LANDFORMS. FEW AREAS LIKE THIS LEFT IN CALIFORNIA.

Owner/Manager: PVT-KNAPP RANCH

Branchinecta mesovallensis

midvalley fairy shrimp — Element Code: ICBRA03150

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2

Other Lists
CDFG Status:

Habitat Associations
General: VERNAL POOLS IN THE CENTRAL VALLEY.
Micro:

Occurrence No. 2 **Map Index:** 43454 **EO Index:** 43454

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2000-08-15

Quad Summary: Planada (3712033/421D), Haystack Mtn. (3712043/421A)
County Summary: Merced

Lat/Long: 37.37428° / -120.37239°
UTM: Zone-10 N4139633 E732665
Area: 26.4 acres
Elevation: 125 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 31 **Qtr:** XX
Meridian: M

Location: UC MERCED CAMPUS PLANNING AREA, 0.5 MILE N OF BLACK RASCAL CREEK & LE GRAND CANAL CONFULENCE, ~5 MILES NNW OF PLANADA.

Threat: PROPOSED CONSTUCTION OF UC MERCED & ASSOCIATED DEVELOPMENT.

General: 6 VERNAL POOLS SAMPLED WITH B. MESOVALLIENSIS IN THE 1998-99 WET SEASON. L. PACKARDI AND B. LYNCHI ALSO FOUND.

Owner/Manager: PVT

Occurrence No. 3 **Map Index:** 43460 **EO Index:** 43460

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2000-08-16

Quad Summary: Merced (3712034/421C), Yosemite Lake (3712044/421B)
County Summary: Merced

Lat/Long: 37.37004° / -120.39288°
UTM: Zone-10 N4139112 E730863
Area: 56.4 acres
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 36 **Qtr:** XX
Meridian: M

Location: UC MERCED PLANNING AREA, 2.5 MILES N OF BLACK RASCAL CREEK & FAIRFIELD CANAL CONFULENCE, ~7 MILES NE OF MERCED.

Threat: PROPOSED CONSTUCTION OF UC MERCED & ASSOCIATED DEVELOPMENT.

General: 8 OUT OF THE 30 VERNAL POOLS SAMPLED IN THE 1998-99 WET SEASON HAD B. MESOVALIENSIS. B. LYNCHI WAS ALSO OBSERVED.

Owner/Manager: PVT

Occurrence No. 4 **Map Index:** 43466 **EO Index:** 43466

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2000-08-16

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36822° / -120.40232°
UTM: Zone-10 N4138887 E730032
Area: 75.2 acres
Elevation: 280 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 35 **Qtr:** XX
Meridian: M

Location: UC MERCED PLANNING AREA, 1.5 MILES ESE OF LE GRAND CANAL CONFLUENCE WITH YOSEMITE LAKE, ~6.5 MILES NE OF MERCED.

Threat: PROPOSED CONSTUCTION OF UC MERCED AND ASSOCIATED DEVELOPMENT.

General: 17 OUT OF THE 64 VERNAL POOLS SAMPLED IN THIS AREA DURING THE 1998-99 WET SEASON HAD B. MESOVALLIENSIS. B. LYNCHI WAS ALSO OBSERVED.

Owner/Manager: PVT

Branchinecta mesovallensis

midvalley fairy shrimp — Element Code: ICBRA03150

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G2	CDFG Status:
State: None	State: S2	

Habitat Associations
General: VERNAL POOLS IN THE CENTRAL VALLEY.
Micro:

Occurrence No. 15 **Map Index:** 44330 **EO Index:** 44330

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-03-15
Site: 2000-03-15
Record Last Updated: 2000-11-15

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36335° / -120.43585°
UTM: Zone-10 N4138266 E727077
Area: 12.0 acres
Elevation: 220 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 33 **Qtr:** XX
Meridian: M

Location: 0.8 MILE EAST OF GOLF AND BELLEVUE ROADS, 0.35 MILES SOUTH OF YOSEMITE LAKE, ~4.5 MILES NE OF MERCED.
Location Detail: 7 POOL SITES, B. LYNCHI AND LINDERIELLA OCCIDENTALIS ALSO PRESENT .
Ecological: NON-NATIVE GRASSLAND WITH MIMA-MOUND TOPOGRAPHY INTERSPERSED WITH SEASONAL DRAINAGES AND VERNAL POOL COMPLEXES.
Threat: DEVELOPMENT AND ROADS IN PROPOSED MERCED CAMPUS PARKWAY PROJECT SITE.
General: SHRIMP OBSERVED AT 7 POOL SITES IN THE COMPLEX. THIS IS POSSIBLY THE UNIDENTIFIED SHRIMP FOUND IN 1999 SURVEYS.
Owner/Manager: PVT

Occurrence No. 16 **Map Index:** 44331 **EO Index:** 44331

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-03-02
Site: 2000-03-02
Record Last Updated: 2000-11-15

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35158° / -120.42839°
UTM: Zone-10 N4136978 E727774
Area: 19.3 acres
Elevation: 190 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 03 **Qtr:** XX
Meridian: M

Location: COTTONWOOD CREEK DRAINAGE, 1.4 MILES SOUTHEAST OF GOLF AND BELLEVUE ROADS, 1.1 MILES SOUTH OF YOSEMITE LAKE.
Location Detail: 4 POOL SITES, B. LYNCHI, AND LINDERIELLA OCCIDENTALIS ALSO PRESENT IN NEARBY POOLS.
Ecological: NON-NATIVE GRASSLAND WITH MIMA-MOUND TOPOGRAPHY INTERSPERSED WITH SEASONAL DRAINAGES AND VERNAL POOL COMPLEXES.
Threat: DEVELOPMENT AND ROADS IN MERCED CAMPUS PARKWAY PROJECT SITE.
General: SHRIMP OBSERVED AT 4 POOL SITES IN THE COMPLEX, THIS IS POSSIBLY THE UNIDENTIFIED SHRIMP FOUND IN THE 1999 SURVEYS.
Owner/Manager: PVT

Occurrence No. 21 **Map Index:** 46628 **EO Index:** 46628

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1992-01-04
Site: 1992-01-04
Record Last Updated: 2002-07-25

Quad Summary: Haystack Mtn. (3712043/421A), Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.37626° / -120.36785°
UTM: Zone-10 N4139864 E733060
Area: 18.0 acres
Elevation: 295 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 30 **Qtr:** XX
Meridian: M

Location: 2.2 MILES WSW OF HAYSTACK MTN; BETWEEN A PROPOSED FLOOD CONTROL DAM/SPILLWAY AND BLACK RASCAL CREEK
Location Detail: TYPE LOCALITY FOR THIS SPECIES. WEST SIDE OF BLACK RASCAL CREEK.
Ecological: HABITAT CONSISTS OF SMALL, CIRCULAR VERNAL POOL, ABOUT 1.2 METERS IN DIAMETER & 10 CM MAX DEPTH. DOMINANT PLANTS INCLUDE LOLIUM MULTIFLORUM, HORDEUM MARINUMGUSSONEANUM, & DESCHAMPSIA DANTHANOIDES. POOL IN PENTZ GRAVELLY LOAM INTERMOUND SOIL
General: TYPE SPECIMENS COLLECTED ON 4 JAN 1992. UNKNOWN NUMBER OF INDIVIDUALS OBSERVED/COLLECTED AT SITES #033 & 034 (D. ROGERS) ON AN UNKNOWN DATE; ROGERS' LOCATION INFORMATION OBTAINED FROM VARIOUS SOURCES.
Owner/Manager: PVT-VIRGINIA SMITH TRUST

Branchinecta mesovallensis

midvalley fairy shrimp — Element Code: ICBRA03150

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2

Other Lists
CDFG Status:

Habitat Associations
General: VERNAL POOLS IN THE CENTRAL VALLEY.
Micro:

Occurrence No. 70 | Map Index: 67727 | EO Index: 67880

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35756° / -120.39519°
UTM: Zone-10 N4137722 E730696
Radius: 80 meters
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 14E
Section: 01
Meridian: M
Qtr: NW

Location: NORTH OF LE GRAND CANAL, 2.2 MILES SOUTHEAST OF THE SOUTH END OF YOSEMITE LAKE, NORTHEAST OF MERCED

Location Detail: POOL ID: ICH23.4. POOL MAPPED IN THE WEST HALF OF THE NW 1/4 OF SECTION 1. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN 1 VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 71 | Map Index: 67730 | EO Index: 67883

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34825° / -120.39319°
UTM: Zone-10 N4136694 E730902
Area: 6.0 acres
Elevation: 235 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 01
Meridian: M
Qtr: SW

Location: SOUTH OF LE GRAND CANAL, 2.6 MILES SOUTHEAST OF THE SOUTH END OF YOSEMITE LAKE, NORTHEAST OF MERCED.

Location Detail: POOL ID'S: ICH02.1, ICH02.4. POOLS MAPPED IN THE SOUTH PORTION OF THE SW 1/4 SECTION 1. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN 2 VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 72 | Map Index: 67745 | EO Index: 67897

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Planada (3712033/421D), Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35488° / -120.37555°
UTM: Zone-10 N4137473 E732444
Area: 7.0 acres
Elevation: 225 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 06
Meridian: M
Qtr: NW

Location: WEST OF LE GRAND CANAL, 3.3 MILES ESE OF THE SOUTH END OF YOSEMITE LAKE, NORTHEAST OF MERCED.

Location Detail: POOL ID'S: ICH25.1 & ICH25.4. POOLS LOCATED BETWEEN BLACK RASCAL CREEK AND THE LE GRAND CANAL - MAPPED IN THE SW 1/4 OF NW 1/4 SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN 2 VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-ICHORD RANCH

Branchinecta mesovallensis

midvalley fairy shrimp — Element Code: ICBRA03150

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2

Other Lists
CDFG Status:

Habitat Associations
General: VERNAL POOLS IN THE CENTRAL VALLEY.
Micro:

Occurrence No. 73 **Map Index:** 67747 **EO Index:** 67899

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Planada (3712033/421D), Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34652° / -120.37527°
UTM: Zone-10 N4136546 E732494
Area: 13.0 acres
Elevation: 220 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 06 **Qtr:** XX
Meridian: M

Location: WEST OF LE GRAND CANAL, 3.5 MILES SOUTHEAST OF THE SOUTH END OF YOSEMITE LAKE, NORTHEAST OF MERCED.

Location Detail: POOL ID'S: ICH05.1 & ICH05.2. POOLS LOCATED BETWEEN BLACK RASCAL CREEK AND THE LE GRAND CANAL - MAPPED IN THE SOUTH END OF THE SW 1/4 OF SECTION 6 AND THE NORTH END OF THE NW 1/4 OF SECTION 7. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN 2 VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 74 **Map Index:** 67748 **EO Index:** 67900

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34435° / -120.37040°
UTM: Zone-10 N4136317 E732933
Area: 13.0 acres
Elevation: 225 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 07 **Qtr:** NW
Meridian: M

Location: WEST OF LE GRAND CANAL, 3.9 MILES SOUTHEAST OF THE SOUTH END OF YOSEMITE LAKE, NORTHEAST OF MERCED.

Location Detail: POOL ID'S: ICH07.1, ICH07.3, ICH07.4, ICH08.1, ICH08.2 & ICH08.3. POOLS LOCATED BETWEEN BLACK RASCAL CREEK AND THE LE GRAND CANAL - MAPPED IN THE EAST PORTION OF THE NW 1/4 OF SECTION 7. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN 6 VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 75 **Map Index:** 67752 **EO Index:** 67904

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35650° / -120.36689°
UTM: Zone-10 N4137674 E733206
Area: 5.0 acres
Elevation: 260 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 06 **Qtr:** NE
Meridian: M

Location: EAST OF LE GRAND CANAL, 3.7 MILES ESE OF THE SOUTH END OF YOSEMITE LAKE, NORTHEAST OF MERCED.

Location Detail: POOL ID: ICH10.4. POOL LOCATED SOUTH OF BLACK RASCAL CREEK - MAPPED IN THE WEST PORTION OF THE NW 1/4 OF SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN 1 VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-ICHORD RANCH

Branchinecta mesovallensis

midvalley fairy shrimp — Element Code: ICBRA03150

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2

Other Lists
CDFG Status:

Habitat Associations
General: VERNAL POOLS IN THE CENTRAL VALLEY.
Micro:

Occurrence No. 76 **Map Index:** 67753 **EO Index:** 67905

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-15

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35375° / -120.34959°
UTM: Zone-10 N4137412 E734747
Area: 14.0 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 05 **Qtr:** N
Meridian: M

Location: EAST OF LE GRAND CANAL, 4.5 MILES ESE OF THE SOUTH END OF YOSEMITE LAKE & 1 MILE WEST OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL ID'S: ICH14.3 & ICH15.1. LOCATION MAPPED BETWEEN THE NE AND SE 1/4 OF THE NW 1/4 AND THE SW 1/4 OF THE NE 1/4 SECTION 5. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN 2 VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 77 **Map Index:** 67755 **EO Index:** 67907

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35658° / -120.34072°
UTM: Zone-10 N4137748 E735524
Area: 5.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 04 **Qtr:** NW
Meridian: M

Location: EAST OF LE GRAND CANAL AND 0.4 MILE WNW OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL ID'S: ICH18.1. LOCATION MAPPED IN THE WEST PORTION OF THE NW 1/4 OF SECTION 4. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN 1 VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 78 **Map Index:** 67756 **EO Index:** 67908

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35273° / -120.33835°
UTM: Zone-10 N4137327 E735746
Area: 11.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 04 **Qtr:** SW
Meridian: M

Location: EAST OF LE GRAND CANAL AND 0.3 MILE WSW OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL ID'S: ICH17.4, ICH21.1 & ICH21.2. LOCATION MAPPED IN THE NORTH PORTION OF THE SW 1/4 OF SECTION 4. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN 3 VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-ICHORD RANCH

Branchinecta mesovallensis

midvalley fairy shrimp — Element Code: ICBRA03150

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2

Other Lists
CDFG Status:

Habitat Associations
General: VERNAL POOLS IN THE CENTRAL VALLEY.
Micro:

Occurrence No. 79 Map Index: 67762 EO Index: 67915
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36213° / -120.35692°
UTM: Zone-10 N4138323 E734072
Area: 9.0 acres
Elevation: 282 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 32 Qtr: SW
Meridian: M

Location: EAST OF LE GRAND CANAL AND 1.4 MILES WNW OF VABM HURRICANE, NE OF MERCED.
Location Detail: POOL ID'S: FM51.1, FM51.3 & FM51.4. LOCATION MAPPED IN THE SW 1/4 OF SW 1/4 SECTION 32. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN 3 VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.
Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 82 Map Index: 67766 EO Index: 67918
Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35399° / -120.30652°
UTM: Zone-10 N4137547 E738562
Area: 7.0 acres
Elevation: 273 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 03 Qtr: NE
Meridian: M

Location: 0.2 MILE WEST OF BURNS CREEK AND 1.5 MILES DIRECTLY EAST OF VABM HURRICANE, NORTHEAST OF MERCED.
Location Detail: POOL ID: FM71.3. LOCATION MAPPED ON THE BORDER OF THE SE 1/4 OF THE NE 1/4 OF SECTION 3 AND THE SW 1/4 OF THE NW 1/4 OF SECTION 2. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF A VERNAL POOL.
General: SPECIES OBSERVED IN 1 VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.
Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 83 Map Index: 67791 EO Index: 67943
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36804° / -120.30562°
UTM: Zone-10 N4139107 E738597
Radius: 80 meters
Elevation: 283 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 06S
Range: 15E
Section: 35 Qtr: NW
Meridian: M

Location: 1.7 MILES SOUTHEAST OF HAYSTACK MOUNTAIN AND 1.8 MI SOUTHWEST OF THE BURNS CREEK DAM, NE OF MERCED.
Location Detail: POOL ID: FM62.1. LOCATION MAPPED IN THE SW 1/4 OF THE NW1/4 OF SECTION 35 - JUST EAST OF DRAINAGE 0.75 MILES WEST OF BURNS CREEK. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF A VERNAL POOL.
General: SPECIES OBSERVED IN 1 VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.
Owner/Manager: PVT-FLYING M RANCH

Branchinecta mesovallensis

midvalley fairy shrimp — Element Code: ICBRA03150

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2

Other Lists
CDFG Status:

Habitat Associations
General: VERNAL POOLS IN THE CENTRAL VALLEY.
Micro:

Occurrence No. 84 **Map Index:** 67794 **EO Index:** 67944
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36625° / -120.29632°
UTM: Zone-10 N4138933 E739427
Area: 6.0 acres
Elevation: 285 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 35 **Qtr:** XX
Meridian: M

Location: 2.2 MILES SOUTHEAST OF HAYSTACK MOUNTAIN AND 1.4 MILES SOUTHWEST OF THE BURNS CREEK DAM, NE OF MERCED.

Location Detail: POOL ID'S: FM64.3 & FM64.4. LOCATION MAPPED IN THE SOUTH-CENTRAL PORTION OF SECTION 35 - JUST WEST OF DRAINAGE 0.25 MILES WEST OF BURNS CREEK. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN 2 VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 89 **Map Index:** 67824 **EO Index:** 67974
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35446° / -120.27748°
UTM: Zone-10 N4137672 E741134
Radius: 80 meters
Elevation: 305 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 01 **Qtr:** NE
Meridian: M

Location: EAST OF BURNS CREEK AND 1.5 MILES SOUTH OF THE BURNS CREEK DAM, NE OF MERCED.

Location Detail: POOL ID: FM75.2. LOCATION MAPPED IN THE SW1/4 OF THE NE 1/4 SECTION 1. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN 1 VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 90 **Map Index:** 67827 **EO Index:** 67976
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34952° / -120.30200°
UTM: Zone-10 N4137062 E738977
Area: 5.0 acres
Elevation: 255 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 02 **Qtr:** SW
Meridian: M

Location: JUST EAST OF BURNS CREEK, 2.4 MILES DOWNSTREAM FROM THE BURNS CREEK DAM, NE OF MERCED.

Location Detail: POOL ID'S: FM70.2 & FM70.3. LOCATION MAPPED IN THE CENTRAL PART OF THE SW 1/4 OF SECTION 2. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN 2 VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-FLYING M RANCH

Branchinecta mesovallensis

midvalley fairy shrimp — Element Code: ICBRA03150

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2

Other Lists
CDFG Status:

Habitat Associations
General: VERNAL POOLS IN THE CENTRAL VALLEY.
Micro:

Occurrence No. 91 **Map Index:** 67834 **EO Index:** 67982

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.31872° / -120.26146°
UTM: Zone-10 N4133747 E742668
Radius: 80 meters
Elevation: 290 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 18 **Qtr:** S
Meridian: M

Location: JUST N OF MILES CREEK, 0.8 MILES SW OF THE INTERSECTION OF NORTH CUNNINGHAM ROAD & HIGHWAY 140, 3.6 MILES NE OF PLANADA.

Location Detail: POOL ID: CUN05.3. LOCATION MAPPED IN THE CENTRAL PART OF THE SOUTH PORTION OF SECTION 18. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN 1 VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 97 **Map Index:** 67851 **EO Index:** 68000

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17631° / -120.16809°
UTM: Zone-10 N4118188 E751416
Radius: 80 meters
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 16E
Section: 01 **Qtr:** SE
Meridian: M

Location: 1.2 MILES WNW OF THE INTERSECTION OF MARGUERITE RD & BAXTER RD, NORTH OF CHOWCHILLA RIVER, SOUTHEASTERN MERCED COUNTY.

Location Detail: POOL ID: FLY05.4. LOCATION MAPPED IN THE NE 1/4 OF THE SE 1/4 SECTION 1. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN 1 VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-FLYNN RANCH

Occurrence No. 98 **Map Index:** 67852 **EO Index:** 68002

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17372° / -120.15860°
UTM: Zone-10 N4117926 E752268
Radius: 80 meters
Elevation: 310 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 17E
Section: 06 **Qtr:** SW
Meridian: M

Location: 0.6 MILES WNW OF THE INTERSECTION OF MARGUERITE RD & BAXTER RD, NORTH OF CHOWCHILLA RIVER, SOUTHEASTERN MERCED COUNTY.

Location Detail: POOL ID: FLY08.3. LOCATION MAPPED IN THE SE 1/4 OF THE SW 1/4 SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN 1 VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-FLYNN RANCH

Branchinecta mesovallensis

midvalley fairy shrimp — Element Code: ICBRA03150

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G2	CDFG Status:
State: None	State: S2	

Habitat Associations

General: VERNAL POOLS IN THE CENTRAL VALLEY.

Micro:

Occurrence No. 99 **Map Index:** 67853 **EO Index:** 68003

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16938° / -120.15796°
UTM: Zone-10 N4117445 E752339
Radius: 80 meters
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 17E
Section: 07 **Qtr:** NW
Meridian: M

Location: 0.6 MILES WEST OF THE INTERSECTION OF MARGUERITE RD & BAXTER RD, NORTH OF CHOWCHILLA RIVER, SOUTHEASTERN MERCED COUNTY.

Location Detail: POOL ID: KNA03.1. LOCATION MAPPED IN THE NE 1/4 OF THE NW 1/4 SECTION 7 - JUST SOUTH OF MARGUEITE ROAD.. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN 1 VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 100 **Map Index:** 67854 **EO Index:** 68004

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-20

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17620° / -120.15413°
UTM: Zone-10 N4118213 E752656
Radius: 80 meters
Elevation: 315 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 17E
Section: 06 **Qtr:** SE
Meridian: M

Location: 0.5 MILES NW OF THE INTERSECTION OF MARGUERITE RD & BAXTER RD, NORTH OF CHOWCHILLA RIVER, SOUTHEASTERN MERCED COUNTY.

Location Detail: POOL ID: FLY09.2. LOCATION MAPPED IN THE NW 1/4 OF THE SE 1/4 SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN 1 VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. THE MERCED COUNTY STUDY AREA IS ONE OF TWO AREAS WITH A HIGH CONCENTRATION OF THIS SPECIES (SOME OF THE DENSEST RECORDS) AND SO HAS HIGH CONSERVATION VALUE.

Owner/Manager: PVT-FLYNN RANCH

Buteo regalis

ferruginous hawk

Element Code: ABNKC19120

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S3S4

Other Lists
CDFG Status:

Habitat Associations
General: OPEN GRASSLANDS, SAGEBRUSH FLATS, DESERT SCRUB, LOW FOOTHILLS & FRINGES OF PINYON-JUNIPER HABITATS.
Micro: EATS MOSTLY LAGOMORPHS, GROUND SQUIRRELS, AND MICE. POPULATION TRENDS MAY FOLLOW LAGOMORPH POPULATION CYCLES.

Occurrence No. 61 **Map Index:** 67996 **EO Index:** 68143

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-03-03
Site: 2001-03-03
Record Last Updated: 2007-01-31

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36594° / -120.30161°
UTM: Zone-10 N4138885 E738959
Radius: 80 meters
Elevation: 290 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 06S
Range: 15E
Section: 35 **Qtr:** SW
Meridian: M

Location: WEST OF BURNS CREEK AND 1.6 MILES SOUTHWEST OF THE BURNS CREEK DAM.
Location Detail: SITE ID: FMB07.FE. LOCATION MAPPED IN THE NE 1/4 OF THE SW 1/4 OF SECTION 35. LOCATION MAPPED USING DIGITAL DATA.
General: 1 WINTERING BIRD OBSERVED FLYING ON 3 MAR 2001.
Owner/Manager: PVT-FLYING M RANCH

Buteo swainsoni

Swainson's hawk

Element Code: ABNKC19070

Status
Federal: None
State: Threatened

NDDB Element Ranks
Global: G5
State: S2

Other Lists
CDFG Status:

Habitat Associations
General: BREEDS IN GRASSLANDS WITH WITH SCATTERED TREES. JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, & AGRICULTURAL OR RANCH
Micro: REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Occurrence No. 476 **Map Index:** 22888 **EO Index:** 7844

Occ Rank: Poor
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1991-06-19
Site: 1991-06-19
Record Last Updated: 1993-03-29

Quad Summary: Plainsburg (3712023/401A)
County Summary: Merced

Lat/Long: 37.20644° / -120.35597°
UTM: Zone-10 N4121049 E734640
Radius: 1/5 mile
Elevation: 200 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 15E
Section: 29 **Qtr:** SW
Meridian: M

Location: ALONG CENTER DIVIDER OF HWY 99, 0.25 MILE NW OF HWY 99/ATHLONE ROAD JUNCTION, APPROXIMATELY 7 MILES NW OF CHOWCHILLA.

Ecological: NEST TREE IS A EUCALYPTUS LOCATED WITHIN A HIGHLY-DISTURBED LOCALIZED AREA (N-S FREEWAY DIVIDER); SURROUNDING AREA IS AGRICULTURAL LAND.

Threat: POSSIBLE THREAT DUE TO LOCATION, WITH THE NEST NOT ONLY PRONE TO DISTURBANCE, BUT ALSO VISIBLE TO MOTORISTS.

General: DFG SWHA #ME. ACTIVE AND SUCCESSFUL NEST IN 1991, PRODUCING TWO FLEDGLINGS.

Owner/Manager: UNKNOWN

Occurrence No. 749 **Map Index:** 41705 **EO Index:** 41705

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-05-19
Site: 1999-05-19
Record Last Updated: 1999-09-29

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.27125° / -120.34783°
UTM: Zone-10 N4128261 E735161
Radius: 80 meters
Elevation: 210 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 15E
Section: 05 **Qtr:** NE
Meridian: M

Location: SOUTH SIDE OF OWENS CREEK, 0.35 MILE WEST OF WHELAN ROAD, 2 MILES SW OF PLANADA.

Ecological: NEST IS IN THE TOP 1/4 OF A TALL COTTONWOOD, WITHIN A RIPARIAN AREA MADE UP OF MANY TALL COTTONWOODS, OAKS, AND EUCALYPTUS. NEST TREE IS SURROUNDED BY A LARGE AGRICULTURAL FIELD (OAT HAY) TO THE SOUTH AND A PISTACHIO ORCHARD TO THE NORTH.

General: 1 ADULT OBSERVED NESTING ON 19 MAY 1999.

Owner/Manager: UNKNOWN

Occurrence No. 820 **Map Index:** 43128 **EO Index:** 43128

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-04-13
Site: 2000-04-13
Record Last Updated: 2000-06-22

Quad Summary: Plainsburg (3712023/401A)
County Summary: Merced

Lat/Long: 37.21228° / -120.36316°
UTM: Zone-10 N4121679 E733984
Radius: 80 meters
Elevation: 200 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 15E
Section: 30 **Qtr:** NE
Meridian: M

Location: ALONG HIGHWAY 99, 0.8 MILE NW OF ATHLONE ROAD, 7 MILES NW OF CHOWCHILLA.

Ecological: NEST TREE IS A HEAVILY-PRUNED EUCALYPTUS, LOCATED IN THE MEDIAN OF HIGHWAY 99. SITE IS SURROUNDED BY AGRICULTURAL FIELDS.

General: 1 ADULT OBSERVED NESTING, 13 APR 2000.

Owner/Manager: CALTRANS

Buteo swainsoni

Swainson's hawk

Element Code: ABNKC19070

Status	NDDB Element Ranks	Other Lists
Federal: None	**Global:** G5	**CDFG Status:**
State: Threatened	**State:** S2	

Habitat Associations

General: BREEDS IN GRASSLANDS WITH WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, & AGRICULTURAL OR RANCH

Micro: REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Occurrence No. 821 **Map Index:** 43129 **EO Index:** 43129

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-04-13
Site: 2000-04-13
Record Last Updated: 2000-06-22

Quad Summary: Plainsburg (3712023/401A)
County Summary: Merced

Lat/Long: 37.20137° / -120.35015°
UTM: Zone-10 N4120500 E735172
Radius: 80 meters
Elevation: 200 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 15E
Section: 29 **Qtr:** SE
Meridian: M

Location: ALONG HIGHWAY 99, 0.1 MILE NW OF BUCHANAN HOLLOW ROAD, 6 MILES NW OF CHOWCHILLA

Ecological: NEST TREE IS A EUCALYPTUS, WITHIN A SMALL GROVE, LOCATED IN THE MEDIAN OF HIGHWAY 99. SITE IS SURROUNDED BY AGRICULTURAL FIELDS.

General: 1 ADULT OBSERVED NESTING, 13 APR 2000.

Owner/Manager: CALTRANS

Occurrence No. 1000 **Map Index:** 50633 **EO Index:** 50633

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2002-04-04
Site: 2002-04-04
Record Last Updated: 2003-03-17

Quad Summary: Plainsburg (3712023/401A)
County Summary: Merced

Lat/Long: 37.20580° / -120.35101°
UTM: Zone-10 N4120990 E735082
Radius: 80 meters
Elevation: 200 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 15E
Section: 29 **Qtr:** SE
Meridian: M

Location: 0.2 MILE EAST OF HIGHWAY 99, ALONG DEADMAN CREEK, 7.5 MILES NW OF CHOWCHILLA

Ecological: HABITAT CONSISTS OF A WETLAND AREA, BORDERED BY COTTONWOODS, WILLOWS, AND EUCALYPTUS; ADJACENT TO ALFALFA AND FRESHLY-PLOWED FIELDS.

General: ADULT OBSERVED ON NEST ON 4 APR 2002.

Owner/Manager: PVT

Occurrence No. 1692 **Map Index:** 69734 **EO Index:** 70537

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2007-07-25
Site: 2007-07-25
Record Last Updated: 2007-08-14

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.25718° / -120.41865°
UTM: Zone-10 N4126527 E728922
Radius: 80 meters
Elevation: 182 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 14E
Section: 10 **Qtr:** NE
Meridian: M

Location: BETWEEN HIGHWAY 99 AND THE NEW COFFEE ROAD EXTENSION, ~4 MILES SE OF MERCED.

Location Detail: NEST TREE IS LOCATED WITHIN A GRASSY STRIP ADJACENT TO HIGHWAY 99, BETWEEN THE HIGHWAY AND THE NEW COFFEE ROAD EXTENSION.

Ecological: NEST TREE IS A LONE EUCALYPTUS, THE ONLY TREE LEFT AFTER ALL TREES EXCEPT THIS ONE WERE REMOVED FOR A HIGHWAY PROJECT AND EXTENSION OF COFFEE ROAD.

Threat: THREATENED BY DEVELOPMENT (UC MERCED AND RELATED PROJECTS) AND INCREASED TRAFFIC FROM EXTENSION OF COFFEE ROAD.

General: ON 25 JUL 2007, 1 JUVENILE/FLEDGLING WAS OBSERVED SITTING IN THE NEST AND TAKING SHORT EXPLORATION FLIGHTS TO AND FROM THE NEST.

Owner/Manager: PVT

Castilleja campestris ssp. succulenta

succulent owl's-clover

Element Code: PDSCR0D3Z1

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G4?T2
State: S2.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.
Micro: MOIST PLACES, OFTEN IN ACIDIC SOILS. 25-750M.

Occurrence No. 27 Map Index: 13720 EO Index: 17647

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1982-XX-XX
Site: 1982-XX-XX
Record Last Updated: 1989-08-11

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36605° / -120.30657°
UTM: Zone-10 N4138884 E738520
Radius: 1/5 mile
Elevation: 275 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 06S
Range: 15E
Section: 34 Qtr: SE
Meridian: M

Location: FLYING M RANCH, 1.7 AIRMI ENE OF VABM HURRICANE, ABOUT 1.8 AIRMI SE OF HAYSTACK MTN SUMMIT.
Ecological: BEDS OF VERNAL POOLS ON ACID SOILS.
Owner/Manager: PVT

Occurrence No. 46 Map Index: 43484 EO Index: 43478

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-04-XX
Site: 1999-04-XX
Record Last Updated: 2000-08-17

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36969° / -120.37979°
UTM: Zone-10 N4139106 E732023
Area: 4.2 acres
Elevation: 250 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 06S
Range: 14E
Section: 36 Qtr: NE
Meridian: M

Location: EAST OF YOSEMITE LAKE, ABOUT 2.9 MILES EAST OF LAKE ROAD AND 2.6 MILES NORTH OF YOSEMITE ROAD, NORTHEAST OF MERCED.
Location Detail: MAPPED AS 2 POLYGONS AT CNDDB WITHIN SE 1/4 NE 1/4 SECTION 36.
Ecological: GROWING IN CALIFORNIA ANNUAL GRASSLAND/NORTHERN HARDPAN VERNAL POOLS.
Threat: PROPOSED UC MERCED CAMPUS, GRAZING.
General: UNKNOWN NUMBER OF PLANTS FOUND WITHIN 6 POOLS IN 1999.
Owner/Manager: PVT

Occurrence No. 47 Map Index: 43482 EO Index: 43482

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-04-XX
Site: 1999-04-XX
Record Last Updated: 2000-08-17

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36638° / -120.39818°
UTM: Zone-10 N4138693 E730405
Area: 62.4 acres
Elevation: 280 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 06S
Range: 14E
Section: 35 Qtr: XX
Meridian: M

Location: EAST OF YOSEMITE LAKE, ABOUT 1-2.5 MILES EAST OF LAKE ROAD AND 2.5 MILES NORTH OF YOSEMITE ROAD, NORTHEAST OF MERCED.
Location Detail: MAPPED IN SEVERAL POLYGONS AT CNDDB, MOSTLY WITHIN SECTION 35 AND THE SW 1/4 SECTION 36.
Ecological: GROWING IN CALIFORNIA ANNUAL GRASSLAND/NORTHERN HARDPAN VERNAL POOLS.
Threat: PROPOSED UC MERCED CAMPUS, GRAZING.
General: UNKNOWN NUMBER OF PLANTS FOUND WITHIN ABOUT 75 POOLS IN 1999.
Owner/Manager: PVT

Castilleja campestris ssp. succulenta

succulent owl's-clover

Element Code: PDSCR0D3Z1

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G4?T2
State: S2.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.
Micro: MOIST PLACES, OFTEN IN ACIDIC SOILS. 25-750M.

Occurrence No. 48 **Map Index:** 43483 **EO Index:** 43483
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-04-XX
Site: 1999-04-XX
Record Last Updated: 2000-08-17

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36662° / -120.42987°
UTM: Zone-10 N4138643 E727597
Area: 4.5 acres
Elevation: 240 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 34 **Qtr:** SW
Meridian: M

Location: EAST OF YOSEMITE LAKE, JUST EAST OF LAKE ROAD & SOUTH OF FAIRFIELD CANAL, NORTHEAST OF MERCED.
Location Detail: MAPPED AS A SINGLE POLYGON AT CNDDB, WITHIN THE NW 1/4 SW 1/4 SECTION 34.
Ecological: GROWING IN CALIFORNIA ANNUAL GRASSLAND/NORTHERN HARDPAN VERNAL POOLS.
Threat: PROPOSED UC MERCED CAMPUS, GRAZING.
General: UNKNOWN NUMBER OF PLANTS FOUND WITHIN 6 POOLS IN 1999.
Owner/Manager: PVT

Occurrence No. 60 **Map Index:** 44057 **EO Index:** 44057
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-05-04
Site: 1999-05-04
Record Last Updated: 2000-10-18

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.31729° / -120.27477°
UTM: Zone-10 N4133554 E741493
Area: 2.2 acres
Elevation: 270 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 13 **Qtr:** SE
Meridian: M

Location: ALONG NORTH SIDE OF HIGHWAY 140, ABOUT 3 MILES ENE OF PLANADA.
Location Detail: MAPPED NEAR THE CENTER OF THE S 1/2 SE 1/4 SECTION 13.
Ecological: VERNAL POOL NEXT TO HIGHWAY ROAD BERM, WITHIN ANNUAL GRASSLAND WITH MODERATE TO DENSE VERNAL POOLS.
Threat: SOME GRAZING BUT APPARENTLY NOT A THREAT.
General: 20 PLANTS OBSERVED IN 1999. LAND APPEARS WELL MANAGED AND IS IN PERPETUAL CONSERVATION EASEMENT.
Owner/Manager: UNKNOWN

Occurrence No. 64 **Map Index:** 51892 **EO Index:** 51892
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-27
Site: 2001-06-27
Record Last Updated: 2003-08-01

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17041° / -120.17500°
UTM: Zone-10 N4117515 E750822
Area: 16.7 acres
Elevation: 290 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 16E
Section: 12 **Qtr:** NW
Meridian: M

Location: SOUTHEAST OF THE INTERSECTION OF MARGUERITE ROAD AND THE ATCHISON TOPEKA RR TRACKS, NORTH OF THE CHOWCHILLA RIVER.
Location Detail: MAPPED WITHIN THE NE 1/4 OF THE NW 1/4 OF SECTION 12.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-KNAPP RANCH

Castilleja campestris ssp. succulenta

succulent owl's-clover — Element Code: PDSCR0D3Z1

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G4?T2	CNPS List: 1B.2
State: Endangered	State: S2.2	

Habitat Associations

General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.

Micro: MOIST PLACES, OFTEN IN ACIDIC SOILS. 25-750M.

Occurrence No. 65 **Map Index:** 51893 **EO Index:** 51893

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-27
Site: 2001-06-27
Record Last Updated: 2003-08-01

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16914° / -120.16176°
UTM: Zone-10 N4117409 E752002
Area: 6.1 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 07 **Qtr:** NW
Meridian: M

Location: SOUTH OF MARGUERITE ROAD 0.8 MILE WEST OF BAXTER ROAD, NORTH OF THE CHOWCHILLA RIVER.

Location Detail: MAPPED WITHIN THE NW 1/4 OF THE NW 1/4 OF SECTION 7.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.

Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 66 **Map Index:** 51895 **EO Index:** 51895

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-27
Site: 2001-06-27
Record Last Updated: 2003-08-01

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16998° / -120.14479°
UTM: Zone-10 N4117547 E753506
Area: 5.4 acres
Elevation: 310 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 08 **Qtr:** NW
Meridian: M

Location: SOUTH OF MARGUERITE ROAD 0.15 MILE EAST OF BAXTER ROAD, NORTH OF THE CHOWCHILLA RIVER.

Location Detail: MAPPED WITHIN THE NW 1/4 OF THE NW 1/4 OF SECTION 8.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.

Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 75 **Map Index:** 51904 **EO Index:** 51904

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-17
Site: 2001-04-17
Record Last Updated: 2003-08-01

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.24886° / -120.23309°
UTM: Zone-10 N4126068 E745409
Radius: 80 meters
Elevation: 265 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 16E
Section: 09 **Qtr:** SW
Meridian: M

Location: NORTHWEST OF LE GRAND, 0.85 MILE NORTH OF LE GRAND CANAL AT MARIPOSA CREEK.

Location Detail: MAPPED WITHIN THE NW 1/4 OF THE SW 1/4 OF SECTION 9.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.

Owner/Manager: PVT-NELSON RANCH

Castilleja campestris ssp. succulenta

succulent owl's-clover

Element Code: PDSCR0D3Z1

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G4?T2
State: S2.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.
Micro: MOIST PLACES, OFTEN IN ACIDIC SOILS. 25-750M.

Occurrence No. 76 Map Index: 51905 EO Index: 51905

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-25
Site: 2001-04-25
Record Last Updated: 2003-08-01

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35624° / -120.36223°
UTM: Zone-10 N4137656 E733620
Radius: 80 meters
Elevation: 250 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 07S
Range: 15E
Section: 06 Qtr: NE
Meridian: M

Location: EAST OF LE GRAND CANAL, 0.7 MILE SOUTHEAST OF BLACK RASCAL CREEK, ABOUT 1.5 MILES WEST OF HURRICANE VABM.
Location Detail: MAPPED WITHIN THE NE 1/4 OF THE NE 1/4 OF SECTION 6.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 77 Map Index: 51906 EO Index: 51906

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-25
Site: 2001-04-25
Record Last Updated: 2003-08-01

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34116° / -120.36780°
UTM: Zone-10 N4135970 E733173
Area: 7.4 acres
Elevation: 200 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 07S
Range: 15E
Section: 07 Qtr: NE
Meridian: M

Location: JUST WEST OF LE GRAND CANAL, 2.66 MILES WSW OF INTERSECTION WITH BEAR CREEK, EASTERN MERCED COUNTY.
Location Detail: MAPPED WITHIN THE SW 1/4 OF THE NE 1/4 OF SECTION 7.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 78 Map Index: 51907 EO Index: 51907

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-23
Site: 2001-04-23
Record Last Updated: 2003-08-01

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.32394° / -120.25645°
UTM: Zone-10 N4134340 E743095
Area: 16.0 acres
Elevation: 300 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 07S
Range: 16E
Section: 18 Qtr: NE
Meridian: M

Location: JUST SOUTH OF HIGHWAY 140, 0.35 MILE WEST OF CUNNINGHAM ROAD & 2.2 MILES EAST OF LE GRAND CANAL.
Location Detail: MAPPED WITHIN THE SOUTH 1/2 OF THE NE 1/4 OF SECTION 18.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Castilleja campestris ssp. succulenta

succulent owl's-clover — Element Code: PDSCR0D3Z1

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G4?T2	CNPS List: 1B.2
State: Endangered	State: S2.2	

Habitat Associations

General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.

Micro: MOIST PLACES, OFTEN IN ACIDIC SOILS. 25-750M.

Occurrence No. 79 **Map Index:** 51908 **EO Index:** 51908

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 2001-04-25; Site: 2001-04-25; Record Last Updated: 2003-08-01

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35824° / -120.39262°
UTM: Zone-10 N4137804 E730921
Radius: 80 meters
Elevation: 230 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 14E
Section: 01
Meridian: M
Qtr: NW

Location: NORTH OF LE GRAND CANAL, 2.4 MILES ESE OF SOUTH END OF YOSEMITE LAKE DAM, NORTHEAST OF MERCED.

Location Detail: MAPPED WITHIN THE NW 1/4 OF THE NW 1/4 OF SECTION 1.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 80 **Map Index:** 51909 **EO Index:** 51909

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 2001-06-29; Site: 2001-06-29; Record Last Updated: 2003-08-01

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35595° / -120.38196°
UTM: Zone-10 N4137575 E731873
Area: 36.0 acres
Elevation: 230 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 01
Meridian: M
Qtr: E

Location: NORTH OF LE GRAND CANAL, 3 MILES ESE OF SOUTH END OF YOSEMITE LAKE DAM, NORTHEAST OF MERCED.

Location Detail: MAPPED WITHIN THE SW 1/4 OF THE NE 1/4 AND THE NW 1/4 OF THE SE 1/4 OF SECTION 1.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 81 **Map Index:** 51910 **EO Index:** 51910

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen — Element: 2001-06-29; Site: 2001-06-29; Record Last Updated: 2003-08-01

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34752° / -120.39225°
UTM: Zone-10 N4136615 E730988
Area: 18.8 acres
Elevation: 240 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 01
Meridian: M
Qtr: SW

Location: SOUTH OF LE GRAND CANAL, 2.6 MILES SOUTHEAST OF SOUTH END OF YOSEMITE LAKE DAM, EAST OF MERCED.

Location Detail: MAPPED WITHIN THE W 1/2 OF THE SW 1/4 OF SECTION 1.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.

Owner/Manager: PVT-ICHORD RANCH

Castilleja campestris ssp. succulenta

succulent owl's-clover — Element Code: PDSCR0D3Z1

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G4?T2
State: S2.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.
Micro: MOIST PLACES, OFTEN IN ACIDIC SOILS. 25-750M.

Occurrence No. 82 **Map Index:** 51911 **EO Index:** 51911

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2008-06-30

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34480° / -120.38261°
UTM: Zone-10 N4136337 E731849
Area: 21.0 acres
Elevation: 220 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 12
Meridian: M
Qtr: NE

Location: BETWEEN LE GRAND & FAIRFIELD CANALS, 0.5 MI NORTH TO NNE OF APPLEGATE LATERAL CANAL AT BLACK RASCAL CREEK, E OF MERCED.

Location Detail: MAPPED ACCORDING TO 2001 DIGITAL DATA AND GPS INFORMATION.

Ecological: ASSOCIATES INCLUDE PLAGIOBOTHRYS LEPTOCLADUS, PSILOCARPHUS BREVISSIMUS, DOWNINGIA BICORNUTA, ALOPECURUS SACCATUS, ELEOCHARIS ACICULARIS, ISOETES NUTTALLII, CALLITRICHE MARGINATA, ELATINE SP., EPILOBIUM CLEISTOGAMUM, HORDEUM MARINUM, ETC.

General: UNKNOWN NUMBER OF PLANTS SEEN IN 2001.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 90 **Map Index:** 51920 **EO Index:** 51920

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-05-08
Site: 2001-05-08
Record Last Updated: 2003-08-01

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35899° / -120.42570°
UTM: Zone-10 N4137807 E727990
Area:
Elevation: 210 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 03
Meridian: M
Qtr: NW

Location: ALONG BELLEVUE ROAD EAST OF LAKE ROAD, SOUTH OF YOSEMITE LAKE.

Location Detail: MAPPED ACCORDING TO T-R-S PROVIDED BY EIP: T7S R14E NE 1/4 OF THE NW 1/4 OF SECTION 3.

Ecological: CALIFORNIA ANNUAL GRASSLAND/NORTHERN HARDPAN VERNAL POOL.

Threat: CATTLE GRAZING.

General: 80 PLANTS SEEN IN 2001.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 96 **Map Index:** 71606 **EO Index:** 72511

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2004-04-04
Site: 2004-04-04
Record Last Updated: 2008-06-30

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34867° / -120.49200°
UTM: Zone-10 N4136504 E722147
Radius: 1/5 mile
Elevation: 185 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 13E
Section: 01
Meridian: M
Qtr: S

Location: EAST OF THE INTERSECTION OF HIGHWAY 59 AND CARDELLA RD, NORTH OF MERCED.

Location Detail: FOLLOW CARDELLA ROAD, EAST TO GATE, THEN TAKE THE DIRT ROAD NORTH AND EAST TO SCRAPED VERNAL POOLS NORTH OF THE ROAD.

Ecological: IN OLD GRAVEL MINED AREA, PROBABLY WERE VERNAL POOLS BEFORE MINING. ASSOCIATES: PLAGIOBOTHRYS STIPITATUS V. MICRANTHUS, DOWNINGIA BICOLOR, DESCHAMPSIA DANTHONIOIDES, ALOPECURUS HOWELLII, PSILOCARPHUS BREVISSIMUS, MIMULUS GUTTATUS.

General: IN 2004, 227 PLANTS WERE FOUND; 40 PLANTS FOUND IN LESS DISTURBED VERNAL POOLS TO SOUTH. PLANTS ARE LARGE AND VIGOROUS.

Owner/Manager: PVT

Charadrius montanus

mountain plover

Element Code: ABNNB03100

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2?

Other Lists
CDFG Status: SC

Habitat Associations
General: SHORT GRASSLANDS, FRESHLY PLOWED FIELDS, NEWLY SPROUTING GRAIN FIELDS, & SOMETIMES SOD FARMS
Micro: SHORT VEGETATION, BARE GROUND & FLAT TOPOGRAPHY. PREFERS GRAZED AREAS & AREAS WITH BURROWING RODENTS.

Occurrence No. 8 **Map Index:** 41845 **EO Index:** 41845

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-03-08
Site: 1999-03-08
Record Last Updated: 1999-11-08

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.38447° / -120.39855°
UTM: Zone-10 N4138481 E730378
Radius: 1/5 mile
Elevation: 275 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 06S
Range: 14E
Section: 35 **Qtr:** SE
Meridian: M

Location: 1.5 MILES SE OF YOSEMITE LAKE, NE OF MERCED.
Ecological: HABITAT CONSISTS OF GRAZED NON-NATIVE GRASSLAND DOMINATED BY HORDEUM JUBATUM (~80%).
General: 5 INDIVIDUALS (IN BREEDING PLUMAGE) OBSERVED ON 8 MAR 1999.
Owner/Manager: PVT-FLYING M RANCH

Desmocerus californicus dimorphus

valley elderberry longhorn beetle — **Element Code:** IICOL48011

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	**Global:** G3T2	**CDFG Status:**
State: None	**State:** S2	

Habitat Associations

General: OCCURS ONLY IN THE CENTRAL VALLEY OF CALIFORNIA, IN ASSOCIATION WITH BLUE ELDERBERRY (SAMBUCUS MEXICANA).

Micro: PREFERS TO LAY EGGS IN ELDERBERRRIES 2-8 INCHES IN DIAMETER; SOME PREFERENCE SHOWN FOR "STRESSED" ELDERBERRIES.

Occurrence No. 121 **Map Index:** 33049 **EO Index:** 3716

Occ Rank: Poor
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-09-18
Site: 1993-09-18
Record Last Updated: 1995-03-15

Quad Summary: Le Grand (3712022/400B)
County Summary: Madera

Lat/Long: 37.16161° / -120.20227°
UTM: Zone-10 N4116466 E748430
Radius: 80 meters
Elevation: 270 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 09S
Range: 16E
Section: 10 **Qtr:** SE
Meridian: M

Location: CHOWCHILLA RIVER (SOUTH BANK), JUST WEST OF ROAD 19, 5 MILES SE OF LE GRAND.

Ecological: HABITAT CONSISTS OF REMNANT, DISTURBED GREAT VALLEY MIXED RIPARIAN FOREST; 20-30 ELDERBERRY BUSHES LOCATED ALONG THE RIVER BANK.

Threat: THREATENED BY A PLANNED BRIDGE REPLACEMENT PROJECT.

General: EMERGENCE HOLES OBSERVED IN AN ISOLATED STAND OF ELDERBERRY.

Owner/Manager: UNKNOWN

Dipodomys heermanni dixoni

Merced kangaroo rat

Element Code: AMAFD03062

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3G4T2T3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: GRASSLAND AND SAVANNA COMMUNITIES IN EASTERN MERCED & STANISLAUS COUNTIES.
Micro: NEEDS FINE, DEEP, WELL-DRAINED SOIL FOR BURROWING. GRANIVOROUS, BUT ALSO EATS FORBS & GREEN GRASSES.

Occurrence No. 14 **Map Index:** 47711 **EO Index:** 47711
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-12
Site: 2001-06-12
Record Last Updated: 2007-02-06

Quad Summary: Le Grand (3712022/400B)
County Summary: Madera, Merced

Lat/Long: 37.16610° / -120.15309°
UTM: Zone-10 N4117094 E752783
Radius: 80 meters
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 17E
Section: 07
Qtr: NE
Meridian: M

Location: ALONG CHOWCHILLA RIVER, 0.45 MILE SW OF THE INTERSECTION OF MARGUERITE ROAD AND BAXTER ROAD.
Location Detail: SITE KNT03. LOCATION MAPPED IN THE NE 1/4 OF THE NE 1/4 SECTION 7.
Ecological: HABITAT CONSISTS OF NON-NATIVE GRASSLAND. SOIL TYPE: RIVERBANK.
General: 5 ADULT FEMALES AND ONE JUVENILE MERCED K-RATS CAPTURED ALONG A DIRT ROAD ON 12 JUN 2001.
Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 15 **Map Index:** 47712 **EO Index:** 47712
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-15
Site: 2001-06-15
Record Last Updated: 2007-02-06

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16910° / -120.14194°
UTM: Zone-10 N4117457 E753763
Radius: 80 meters
Elevation: 320 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 17E
Section: 08
Qtr: NW
Meridian: M

Location: NORTH OF CHOWCHILLA RIVER, 0.3 MILE ESE OF THE INTERSECTION OF MARGUERITE ROAD AND BAXTER ROAD
Location Detail: SITE KNT01. LOCATION MAPPED IN THE NE 1/4 OF THE NW 1/4 SECTION 8.
Ecological: HABITAT CONSISTS OF NON-NATIVE GRASSLAND. SOIL TYPE: RIVERBANK.
General: 1 ADULT MALE MERCED K-RAT CAPTURED IN A CALIFORNIA GROUND SQUIRREL COLONY ON 15 JUN 2001. THE EASTERN MERCED COUNTY REGIONAL STUDY AREA IS CRITICAL TO THE CONSERVATION OF THIS SPECIES.
Owner/Manager: PVT-KNAPP RANCH

Downingia pusilla

dwarf downingia

Element Code: PDCAM060C0

Status	NDDB Element Ranks	Other Lists
Federal: None	**Global:** G3	**CNPS List:** 2.2
State: None	**State:** S3.1	

Habitat Associations

General: VALLEY AND FOOTHILL GRASSLAND (MESIC SITES), VERNAL POOLS.

Micro: VERNAL LAKE AND POOL MARGINS WITH A VARIETY OF ASSOCIATES. IN SEVERAL TYPES OF VERNAL POOLS. 1-485M.

Occurrence No. 93 **Map Index:** 43376 **EO Index:** 43376

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-04-XX
Site: 1999-04-XX
Record Last Updated: 2000-08-09

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.37271° / -120.41766°
UTM: Zone-10 N4139348 E728660
Area: 2.1 acres
Elevation: 275 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 06S
Range: 14E
Section: 34 **Qtr:** NE
Meridian: M

Location: EAST OF YOSEMITE LAKE, ABOUT 0.5 MILE EAST OF LAKE ROAD AT LE GRAND CANAL CROSSING, NORTHEAST OF MERCED.

Location Detail: MAPPED ALONG DIRT ROAD WITHIN THE NE 1/4 NE 1/4 SECTION 34.

Ecological: CALIFORNIA ANNUAL GRASSLAND / NORTHERN HARDPAN VERNAL POOL.

Threat: CATTLE GRAZING. PROPOSED UC MERCED CAMPUS.

General: SINGLE COLONY REPORTED IN 1999.

Owner/Manager: PVT

Eryngium spinosepalum

spiny-sepaled button-celery — Element Code: PDAPI0Z0Y0

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.
Micro: SOME SITES ON CLAY SOIL OF GRANITIC ORIGIN; VERNAL POOLS, WITHIN GRASSLAND. 100-420M.

Occurrence No. 27 **Map Index:** 50750 **EO Index:** 50750

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-07-18
Site: 2001-07-18
Record Last Updated: 2003-09-11

Quad Summary: Owens Reservoir (3712032/420C), Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.33523° / -120.23485°
UTM: Zone-10 N4135648 E744972
Area: 122.6 acres
Elevation: 325 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 16E
Section: 08 Qtr: XX
Meridian: M

Location: ALONG AND NORTH OF HIGHWAY 140, BETWEEN 0.5 AND 1.5 MILES WEST OF COUNTY LINE, ABOUT 6 MILES NORTHEAST OF PLANADA.
Location Detail: MAPPED WITHIN MOST OF SECTION 8 AND A LITTLE BIT OF SEC 9.
Ecological: IN VERNAL POOLS IN MIMA MOUND TOPOGRAPHY WITH DESCHAMPSIA DANTHONIOIDES, HORDEUM MARINUM SSP. GUSSONIANUM, AND PLAGIOBOTHRYS.
Threat: SOME PLANTS ARE IN CALTRANS MAINTAINED R-O-W.
General: THOUSANDS OF PLANTS OBSERVED IN 2001. POPULATION OBSERVED IN POOLS ALONG ROAD R-O-W, MANY POOLS AWAY FROM THE ROAD PROBABLY ALSO SUPPORT ERYNGIUM SPINOSEPALUM. DIGITAL DATA WITH LITTLE INFO MAIN SOURCE. NEED MORE DETAILS.
Owner/Manager: UNKNOWN, CALTRANS

Occurrence No. 28 **Map Index:** 50751 **EO Index:** 50751

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-07-18
Site: 2001-07-18
Record Last Updated: 2003-03-26

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.31334° / -120.28227°
UTM: Zone-10 N4133097 E740841
Area: 56.0 acres
Elevation: 270 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 24 Qtr: N
Meridian: M

Location: ALONG HIGHWAY 140, ABOUT 2 TO 2.5 MILES NORTHEAST OF PLANADA.
Location Detail: MAPPED ALONG HIGHWAY 140 WITHIN THE NW 1/4 AND THE NW 1/4 OF THE NE 1/4 OF SECTION 24.
Ecological: VERNAL POOLS, WITH LOLIUM MULTIFLORUM, PHALARIS PARADOXA, PLAGIOBOTHRYS, AND PSILOCARPHUS BREVISSIMUS. DESCRIBED AS OPEN RANGELAND.
Threat: SOME PLANTS ARE IN CALTRANS MAINTAINED R-O-W.
General: 1000'S OF PLANTS REPORTED IN 2001.
Owner/Manager: CALTRANS, MER CO FARM TRUST

Occurrence No. 32 **Map Index:** 52353 **EO Index:** 52353

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2003-09-08

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.18458° / -120.18915°
UTM: Zone-10 N4119049 E749518
Radius: 80 meters
Elevation: 315 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 16E
Section: 02 Qtr: NE
Meridian: M

Location: JUST EAST OF SANTA FE AVENUE, 1.5 MILES NORTH OF THE CHOWCHILLA RIVER, SOUTHEAST OF LE GRAND.
Location Detail: MAPPED WITHIN THE NW 1/4 OF THE NE 1/4 OF SECTION 2.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001. NEED MORE DETAIL ABOUT SITE.
Owner/Manager: PVT-FLYNN RANCH

Eryngium spinosepalum

spiny-sepaled button-celery

Element Code: PDAPI0Z0Y0

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.
Micro: SOME SITES ON CLAY SOIL OF GRANITIC ORIGIN; VERNAL POOLS, WITHIN GRASSLAND. 100-420M.

Occurrence No. 33 Map Index: 52354 EO Index: 52354

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2003-09-08

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.18424° / -120.17089°
UTM: Zone-10 N4119060 E751141
Radius: 80 meters
Elevation: 290 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 16E
Section: 01
Meridian: M
Qtr: NE

Location: ABOUT 1.1 MILES EAST OF SANTA FE AVENUE AND ABOUT 0.9 MILE NORTH OF MARGUERITE ROAD, EASTERN MERCED COUNTY.
Location Detail: MAPPED WITHIN THE NW 1/4 OF THE NE 1/4 OF SECTION 1.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-FLYNN RANCH

Occurrence No. 34 Map Index: 52355 EO Index: 52355

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2003-09-08

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17946° / -120.18123°
UTM: Zone-10 N4118503 E750239
Radius: 80 meters
Elevation: 290 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 16E
Section: 01
Meridian: M
Qtr: NW

Location: JUST EAST OF SANTA FE AVENUE, 1 MILE NORTH OF THE CHOWCHILLA RIVER, SOUTHEAST OF LE GRAND.
Location Detail: MAPPED WITHIN THE SW 1/4 OF THE NW 1/4 OF SECTION 1.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-FLYNN RANCH

Occurrence No. 35 Map Index: 52356 EO Index: 52356

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2003-09-08

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.18204° / -120.15598°
UTM: Zone-10 N4118855 E752473
Area: 10.9 acres
Elevation: 315 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 06
Meridian: M
Qtr: XX

Location: ABOUT 0.5 MILE WEST OF BAXTER ROAD AND 0.5 TO 0.8 MILE NORTH OF MARGUERITE ROAD, EASTERN MERCED COUNTY.
Location Detail: TWO COLONIES MAPPED AT THE CENTER OF THE N 1/2 AND THE NE 1/4 OF THE SW 1/4 OF SECTION 2.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-FLYNN RANCH

Eryngium spinosepalum

spiny-sepaled button-celery

Element Code: PDAPI0Z0Y0

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.
Micro: SOME SITES ON CLAY SOIL OF GRANITIC ORIGIN; VERNAL POOLS, WITHIN GRASSLAND. 100-420M.

Occurrence No. 37 Map Index: 52358 EO Index: 52358
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2003-09-08

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17039° / -120.17483°
UTM: Zone-10 N4117512 E750837
Area: 18.7 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 16E
Section: 12
Meridian: M
Qtr: NW

Location: WESTERN END OF MARGUERITE ROAD, NEAR ATCHISON TOPEKA RR TRACKS, NORTH OF THE CHOWCHILLA RIVER.
Location Detail: NORTH AND SOUTH OF END OF MARGUERITE ROAD. MAPPED WITHIN THE SE 1/4 OF THE SW 1/4 OF SECTION 1 AND THE NE 1/4 OF THE NW 1/4 OF SECTION 12.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-FLYNN RANCH

Occurrence No. 38 Map Index: 52359 EO Index: 52359
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-27
Site: 2001-06-27
Record Last Updated: 2003-09-08

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16823° / -120.15773°
UTM: Zone-10 N4117319 E752363
Radius: 80 meters
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 17E
Section: 07
Meridian: M
Qtr: NW

Location: CHOWCHILLA RIVER, SOUTH OF MARGUERITE ROAD 0.6 MILE WEST OF BAXTER ROAD, EASTERN MERCED COUNTY.
Location Detail: MAPPED WITHIN THE NE 1/4 OF THE NW 1/4 OF SECTION 7.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 39 Map Index: 52360 EO Index: 52360
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-27
Site: 2001-06-27
Record Last Updated: 2003-09-08

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16867° / -120.14286°
UTM: Zone-10 N4117407 E753682
Area: 21.1 acres
Elevation: 310 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 08
Meridian: M
Qtr: NW

Location: NORTH OF THE CHOWCHILLA RIVER, SOUTH OF MARGUERITE RD FROM 0.1 MI WEST TO 0.5 MI EAST OF BAXTER RD, EASTERN MERCED CTY.
Location Detail: 3 COLONIES MAPPED WITHIN THE NE 1/4 OF THE NE 1/4 OF SECTION 7 AND IN THE N 1/2 OF THE NW 1/4 OF SECTION 8.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-KNAPP RANCH

Eryngium spinosepalum

spiny-sepaled button-celery — Element Code: PDAPI0Z0Y0

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.
Micro: SOME SITES ON CLAY SOIL OF GRANITIC ORIGIN; VERNAL POOLS, WITHIN GRASSLAND. 100-420M.

Occurrence No. 40 Map Index: 52362 EO Index: 52362
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-27
Site: 2001-06-27
Record Last Updated: 2003-09-08

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16794° / -120.12791°
UTM: Zone-10 N4117366 E755013
Area: 11.5 acres
Elevation: 320 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 09
Meridian: M
Qtr: NW

Location: NORTH OF THE CHOWCHILLA RIVER, SOUTH OF MARGUERITE ROAD ABOUT 1 MILE EAST OF BAXTER RD, EASTERN MERCED COUNTY.
Location Detail: MAPPED WITHIN THE NW 1/4 OF THE NW 1/4 OF SECTION 9.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 50 Map Index: 52383 EO Index: 52383
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2003-09-09

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35405° / -120.36463°
UTM: Zone-10 N4137408 E733414
Radius: 80 meters
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 06
Meridian: M
Qtr: NE

Location: UPPER BLACK RASCAL CREEK, JUST EAST OF THE LE GRAND CANAL, NNE OF PLANADA.
Location Detail: MAPPED WITHIN THE S 1/2 OF THE NE 1/4 OF SECTION 6.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 51 Map Index: 52384 EO Index: 52384
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2003-09-09

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.29429° / -120.26608°
UTM: Zone-10 N4131025 E742336
Area: 29.4 acres
Elevation: 260 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 16E
Section: 30
Meridian: M
Qtr: W

Location: 0.85 AIRMILE NORTHWEST OF INTERSECTION OF CHILDS AVENUE AND CUNNINGHAM ROAD, CUNNINGHAM RANCH, EASTERN MERCED COUNTY.
Location Detail: MAPPED NEAR THE CENTER OF THE WEST 1/2 OF SECTION 30.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-CUNNINGHAM RANCH

Eryngium spinosepalum

spiny-sepaled button-celery — Element Code: PDAPI0Z0Y0

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.
Micro: SOME SITES ON CLAY SOIL OF GRANITIC ORIGIN; VERNAL POOLS, WITHIN GRASSLAND. 100-420M.

Occurrence No. 52 Map Index: 52385 EO Index: 52385

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2003-09-09

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35586° / -120.38224°
UTM: Zone-10 N4137565 E731849
Area: 6.6 acres
Elevation: 230 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 01
Meridian: M
Qtr: NE

Location: NORTH OF LE GRAND CANAL, 3 MILES ESE OF SOUTH END OF YOSEMITE LAKE DAM, NORTHEAST OF MERCED.
Location Detail: MAPPED NEAR THE CENTER OF THE NE 1/4 OF SECTION 1.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 53 Map Index: 52386 EO Index: 52386

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2003-09-09

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35096° / -120.39180°
UTM: Zone-10 N4136998 E731017
Area: 10.7 acres
Elevation: 245 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 01
Meridian: M
Qtr: SW

Location: SOUTH OF LE GRAND CANAL, 2.6 MILES SOUTHEAST OF SOUTH END OF YOSEMITE LAKE DAM, EAST OF MERCED.
Location Detail: 2 COLONIES MAPPED WITHIN THE SW 1/4 OF SECTION 1.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 54 Map Index: 52391 EO Index: 52391

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2003-09-09

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34478° / -120.38261°
UTM: Zone-10 N4136335 E731849
Radius: 80 meters
Elevation: 220 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 14E
Section: 12
Meridian: M
Qtr: NE

Location: BLACK RASCAL CREEK, 1 MILE NORTHEAST OF LE GRAND CANAL CROSSING, EAST OF MERCED.
Location Detail: MAPPED WITHIN THE NE 1/4 OF THE NE 1/4 OF SECTION 12.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Eryngium spinosepalum

spiny-sepaled button-celery

Element Code: PDAPI0Z0Y0

Status	NDDB Element Ranks	Other Lists
Federal: None	**Global:** G2	**CNPS List:** 1B.2
State: None	**State:** S2.2	

Habitat Associations

General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.

Micro: SOME SITES ON CLAY SOIL OF GRANITIC ORIGIN; VERNAL POOLS, WITHIN GRASSLAND. 100-420M.

Occurrence No. 55 **Map Index:** 52392 **EO Index:** 52392

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2003-09-09

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34048° / -120.39266°
UTM: Zone-10 N4135833 E730973
Radius: 80 meters
Elevation: 200 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 07S
Range: 14E
Section: 12 **Qtr:** NW
Meridian: M

Location: SOUTHEAST OF YOSEMITE LAKE, NORTH SIDE OF FAIRFIELD CANAL ABOUT 0.5 MI NNE OF BLACK RASCAL CREEK CROSSING, NE OF MERCED.

Location Detail: MAPPED WITHIN THE S 1/2 OF THE NW 1/4 OF SECTION 12.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.

Owner/Manager: PVT-FLYNN RANCH

Eumops perotis californicus

western mastiff bat

Element Code: AMACD02011

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5T4
State: S3?

Other Lists
CDFG Status: SC

Habitat Associations
General: MANY OPEN, SEMI-ARID TO ARID HABITATS, INCLUDING CONIFER & DECIDUOUS WOODLANDS, COASTAL SCRUB, GRASSLANDS, CHAPARRAL ETC
Micro: ROOSTS IN CREVICES IN CLIFF FACES, HIGH BUILDINGS, TREES & TUNNELS.

Occurrence No. 71 Map Index: 32440 EO Index: 66400
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1991-12-12
Site: 1991-12-12
Record Last Updated: 2006-11-02

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.31134° / -120.48191°
UTM: Zone-10 N4132384 E723152
Radius: 1 mile
Elevation: 170 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 14E
Section: 19
Meridian: M
Qtr: XX

Location: MERCED.
Location Detail: EXACT LOCATION UNKNOWN. MAPPED ACCORDING TO LAT/LONG COORDINATES GIVEN IN MANIS, WITH UNCERTAINTY OF 3218.688M.
General: 1 FEMALE SPECIMEN COLLECTED BY WILLIAM E. RAINEY ON 12 DEC 1991, MVZ #182351.
Owner/Manager: UNKNOWN

Haliaeetus leucocephalus

bald eagle

Element Code: ABNKC10010

Status
Federal: Delisted
State: Endangered

NDDB Element Ranks
Global: G5
State: S2

Other Lists
CDFG Status:

Habitat Associations
General: OCEAN SHORE, LAKE MARGINS, & RIVERS FOR BOTH NESTING & WINTERING. MOST NESTS WITHIN 1 MI OF WATER.
Micro: NESTS IN LARGE, OLD-GROWTH, OR DOMINANT LIVE TREE W/OPEN BRANCHES, ESPECIALLY PONDEROSA PINE. ROOSTS COMMUNALLY IN WINTE

Occurrence No. 263 **Map Index:** 68020 **EO Index:** 68174

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-01

Quad Summary: Le Grand (3712022/400B)
County Summary: Madera

Lat/Long: 37.16348° / -120.14723°
UTM: Zone-10 N4116819 E753311
Radius: 1/5 mile
Elevation: 300 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 09S
Range: 17E
Section: 08 **Qtr:** NE
Meridian: M

Location: JUST SOUTH OF CHOWCHILLA RIVER, DIRECTLY SOUTH OF THE INTERSECTION OF MARGUERITE RD & BAXTER RD, EASTERN MERCED COUNTY.

Location Detail: LOCATION MAPPED IN THE SE 1/4 OF THE NE 1/4 OF SECTION 7. LOCATION STATED AS "THE SOUTH BANK OF THE CHOWCHILLA RIVER, ABOUT 2.4 KILOMTERS (1.5 MILES) EAST OF SANTA FE ROAD." NEST IS IN THE TOP OF A VALLEY OAK.

General: NEST OBSERVED DURING 2001. AT LEAST ONE YOUNG FLEDGED. IT WAS OBSERVED PERCHING AND FLYING IN THE AREA AROUND THE NEST TREE. BALD EAGLES OBSERVED MANY TIMES DURING SPRING/SUMMER. IT IS UNKNOWN IF THEY HAVE NESTED HERE IN PREVIOUS YEARS.

Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 265 **Map Index:** 68024 **EO Index:** 68176

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: XXXX-XX-XX
Site: XXXX-XX-XX
Record Last Updated: 2007-02-02

Quad Summary: Yosemite Lake (3712044/421B), Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.37809° / -120.42957°
UTM: Zone-10 N4139917 E727589
Radius: 4/5 mile
Elevation: 270 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 06S
Range: 14E
Section: 27 **Qtr:** XX
Meridian: M

Location: YOSEMITE LAKE, EASTERN MERCED COUNTY.

Location Detail: WINTER DAY ROOST SITE.

General: WINTER DAY ROOST SITES REPORTED ON LAKE YOSEMITE DURING UNKNOWN YEARS.

Owner/Manager: UNKNOWN

Lasiurus cinereus

hoary bat

Element Code: AMACC05030

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5
State: S4?

Other Lists
CDFG Status:

Habitat Associations
General: PREFERS OPEN HABITATS OR HABITAT MOSAICS, WITH ACCESS TO TREES FOR COVER & OPEN AREAS OR HABITAT EDGES FOR FEEDING.
Micro: ROOSTS IN DENSE FOLIAGE OF MEDIUM TO LARGE TREES. FEEDS PRIMARILY ON MOTHS. REQUIRES WATER.

Occurrence No. 63 **Map Index:** 24475 **EO Index:** 68822
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1921-04-26
Site: 1921-04-26
Record Last Updated: 2007-03-16

Quad Summary: Chowchilla (3712013/401D), Plainsburg (3712023/401A)
County Summary: Madera

Lat/Long: 37.11977° / -120.26323°
UTM: Zone-10 N4111665 E743149
Radius: 3/5 mile
Elevation: 235 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 10S
Range: 16E
Section: 30 **Qtr:** XX
Meridian: M

Location: CHOWCHILLA.
Location Detail: MAPPED TO INCLUDE LAT/LONG COORDINATES PROVIDED BY MANIS, WITH UNCERTAINTY OF 804.672M.
General: 1 MALE SPECIMEN (MVZ #32185) COLLECTED BY W.N. WEAR AND JOSEPH S. DIXON ON 26 APR 1921.
Owner/Manager: UNKNOWN

Occurrence No. 71 **Map Index:** 68517 **EO Index:** 68831
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1918-04-20
Site: 1918-04-20
Record Last Updated: 2007-03-16

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.29201° / -120.31858°
UTM: Zone-10 N4130639 E737689
Radius: 4/5 mile
Elevation:
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 27 **Qtr:** XX
Meridian: M

Location: PLANADA.
Location Detail: EXACT LOCATION UNKNOWN. MAPPED AS BEST ESTIMATE CENTERED ON PLANADA.
General: 1 FEMALE SPECIMEN (CAS #2710) COLLECTED BY B.W. EVERMANN ON 20 APR 1918.
Owner/Manager: UNKNOWN

Lepidurus packardi

vernal pool tadpole shrimp — Element Code: ICBRA10010

Status
Federal: Endangered
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.
Micro: POOLS COMMONLY FOUND IN GRASS BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED & HIGHLY TURBID.

Occurrence No. 2 **Map Index:** 33056 **EO Index:** 3720
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1994-03-30
Site: 1994-03-30
Record Last Updated: 2007-07-23

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17314° / -120.20021°
UTM: Zone-10 N4117751 E748575
Radius: 1/5 mile
Elevation: 275 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 16E
Section: 02 **Qtr:** SW
Meridian: M

Location: EAST SIDE OF WHITE ROCK ROAD, 0.8 MILE NORTH OF CHOWCHILLA RIVER, 4 MILES SSE OF LE GRAND.
General: COLLECTION #MW-94-13, DEPOSITED AT DFG-IFD.
Owner/Manager: UNKNOWN

Occurrence No. 3 **Map Index:** 33057 **EO Index:** 3721
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1994-03-30
Site: 1994-03-30
Record Last Updated: 1995-03-16

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17855° / -120.20014°
UTM: Zone-10 N4118351 E748563
Radius: 1/5 mile
Elevation: 275 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 16E
Section: 02 **Qtr:** NW
Meridian: M

Location: EAST SIDE OF WHITE ROCK ROAD, 1.1 MILES NORTH OF THE MADERA/MERCED COUNTY LINE, SSE OF LE GRAND.
General: COLLECTION #MW-94-15, DEPOSITED AT DFG-IFD.
Owner/Manager: UNKNOWN

Occurrence No. 81 **Map Index:** 33671 **EO Index:** 30659
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-02-25
Site: 1993-02-25
Record Last Updated: 1997-03-18

Quad Summary: Le Grand (3712022/400B), Plainsburg (3712023/401A)
County Summary: Merced

Lat/Long: 37.23540° / -120.24275°
UTM: Zone-10 N4124549 E744596
Radius: 3/5 mile
Elevation: 225 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 16E
Section: 17 **Qtr:** XX
Meridian: M

Location: JUST NORTHEAST OF LE GRAND.
Location Detail: WETLANDS LOCATED SOMEWHERE IN SECTION 17.
Ecological: NATURAL SEASONAL WETLANDS.
General: LEPIDURUS PACKARDI OBSERVED IN 2 OF 8 FEATURES INSPECTED. SUGNET RECORD #174.
Owner/Manager: UNKNOWN

Lepidurus packardi

vernal pool tadpole shrimp

Element Code: ICBRA10010

Status
Federal: Endangered
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.
Micro: POOLS COMMONLY FOUND IN GRASS BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED & HIGHLY TURBID.

Occurrence No. 144 **Map Index:** 69743 **EO Index:** 41950
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-16

Quad Summary: Planada (3712033/421D), Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34832° / -120.38468°
UTM: Zone-10 N4136723 E731656
Area: 655.0 acres
Elevation:
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 01 **Qtr:** XX
Meridian: M

Location: UPPER BLACK RASCAL CREEK DRAINAGE, LE GRAND CANAL AREA, 1 MILE NORTH OF YOSEMITE AVE, ~6 MILES NE OF MERCED.
Location Detail: UPPER TERRACE AND BLACK RASCAL CREEK VERNAL POOL COMPLEXES, UNIVERSITY PARKWAY PROJECT. BRANCHINECTA LYNCHI & LINDERIELLA OCCIDENTALIS ALSO PRESENT.
Ecological: HABITAT CONSISTS OF VERNAL POOLS, GRAZED ANNUAL GRASSLANDS IN MIMA MOUND TOPOGRAPHY, UNVEGETATED DEPRESSIONS THAT COLLECT AND HOLD WATER AFTER WINTER RAINS. ORCHARDS TO S, CULTIVATED GRAIN TO SW, ANNUAL GRASSLAND/VERNAL POOL TO N AND E.
Threat: ROAD MAINTENANCE/IMPROVEMENT, DEVELOPMENT, AGRICULTURE.
General: 179 POOLS OF THE 441 POOLS SAMPLED WERE OCCUPIED BY 10 TO MORE THAN 1,000 INDIVIDUALS, 1999; 29 POOLS HAD AN UNIDENTIFIED FAIRY SHRIMP PRESENT (UPPER TERRACE). SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS.
Owner/Manager: PVT-ICHORD RANCH, UNKNOWN

Occurrence No. 148 **Map Index:** 42513 **EO Index:** 42513
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-03-XX
Site: 1993-03-XX
Record Last Updated: 2005-01-07

Quad Summary: Planada (3712033/421D), Haystack Mtn. (3712043/421A)
County Summary: Merced

Lat/Long: 37.38077° / -120.32304°
UTM: Zone-10 N4140476 E737015
Radius: 3/5 mile
Elevation: 320 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 06S
Range: 15E
Section: 27 **Qtr:** XX
Meridian: M

Location: FLYING M RANCH, 2.5 MILES WEST OF BURNS RESERVOIR DAM, 0.5 MILE SE OF HAYSTACK MTN, SEVERAL MILES NE OF MERCED.
Location Detail: VERNAL POOLS ON THE FLYING M RANCH. B. HOLLAND LIKELY HAS POOL MAPS FOR THE RANCH.
Ecological: VERNAL POOLS
General: L. PACKARDI OBSERVED ON RANCH PROPERTY, 1980'S OR 1990'S. ALSO OBSERVED BRANCHINECTA CONSERVATIO.
Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 160 **Map Index:** 43452 **EO Index:** 43452
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2000-08-15

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.37048° / -120.37075°
UTM: Zone-10 N4139215 E732822
Area: 15.2 acres
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 31 **Qtr:** NW
Meridian: M

Location: UC MERCED CAMPUS PLANNING AREA. 0.5 MILE N OF BLACK RASCAL CREEK & LE GRAND CANAL CONFULENCE, ~5 MILES NNW OF PLANADA.
Threat: PROPOSED CONSTUCTION OF UC MERCED & ASSOCIATED DEVELOPMENT.
General: 3 VERNAL POOLS SAMPLED WITH L. PACKARDI IN THE 1998-99 WET SEASON. B. LYNCHI, B. MESOVALLIENSIS ALSO OBSERVED.
Owner/Manager: PVT

Lepidurus packardi

vernal pool tadpole shrimp — Element Code: ICBRA10010

Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro: POOLS COMMONLY FOUND IN GRASS BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED & HIGHLY TURBID.

Occurrence No. 187 **Map Index:** 49016 **EO Index:** 58146

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-03-XX
Site: 2001-03-XX
Record Last Updated: 2004-11-17

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.19213° / -120.13301°
UTM: Zone-10 N4120037 E754479
Radius: 80 meters
Elevation: 325 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 17E
Section: 32 **Qtr:** SE
Meridian: M

Location: 0.75 MILE SE OF THE INTERSECTION OF BUCHANAN HOLLOW ROAD AND BAXTER ROAD, 8 MILES NE OF CHOWCHILLA

Ecological: REMNANT CENTRAL VALLEY GRASSLAND - ABUNDANT VERNAL POOLS PRESENT. AREAS SURROUNDED BY ROW CROPS AND ORCHARDS.

Threat: NONE; DESTINED TO BECOME A MITIGATION BANK.

General: 1000'S OF INDIVIDUALS OBSERVED.

Owner/Manager: PVT

Occurrence No. 195 **Map Index:** 49017 **EO Index:** 58144

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-03-XX
Site: 2001-03-XX
Record Last Updated: 2004-11-17

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17584° / -120.14649°
UTM: Zone-10 N4118192 E753336
Area: 12.4 acres
Elevation: 320 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 05 **Qtr:** XX
Meridian: M

Location: 0.35 MILE NORTH OF THE INTERSECTION OF BAXTER ROAD AND MARGUERITE ROAD, 7 MILES NE OF CHOWCHILLA

Location Detail: PARCEL B ON WEST SIDE OF BAXTER ROAD AND PARCEL C ON EAST SIDE OF BAXTER ROAD.

Ecological: REMNANT CENTRAL VALLEY GRASSLAND, ABUNDANT VERNAL POOLS PRESENT. AREA SURROUNDED BY ROW CROPS AND ORCHARDS; CATTLE GRAZING IN AREA.

Threat: NONE, DESTINED TO BECOME A MITIGATION BANK.

General: 1000'S OF INDIVIDUALS OBSERVED.

Owner/Manager: PVT

Occurrence No. 199 **Map Index:** 58136 **EO Index:** 58172

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-16
Site: 2001-04-16
Record Last Updated: 2007-07-05

Quad Summary: Planada (3712033/421D), Haystack Mtn. (3712043/421A)
County Summary: Merced

Lat/Long: 37.37587° / -120.30114°
UTM: Zone-10 N4139988 E738969
Area: 102.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 26 **Qtr:** XX
Meridian: M

Location: PRIMARILY ALONG DIRT ROAD FROM ABOUT 0.75 MILES TO 2.2 MILES WEST OF BURNS CREEK DAM

Location Detail: ALL POINTS (EXCEPT 1) ALONG ROAD. 1 POINT IS LOCATED 290 METERS NORTH OF ROAD CENTRAL TO MAPPED PORTION OF ROAD.

Ecological: VERNAL POOLS. POOL IDS: FM33.1, FM33.4.

Threat: IMPACTS DUE TO CATTLE GRAZING

General: OBSERVED IN 18 DIFFERENT POOLS DURING 2001. NUMBERS RANGED FROM 19 TO 1,667 AND AN ESTIMATE OF 11 PER CUBIC METER. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS, UNFRAGMENTED HABITAT.

Owner/Manager: PVT-FLYING M RANCH

Lepidurus packardi

vernal pool tadpole shrimp — Element Code: ICBRA10010

Status
Federal: Endangered
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.
Micro: POOLS COMMONLY FOUND IN GRASS BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED & HIGHLY TURBID.

Occurrence No. 200 **Map Index:** 58137 **EO Index:** 58173

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-02
Site: 2001-04-02
Record Last Updated: 2004-11-18

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.37357° / -120.33653°
UTM: Zone-10 N4139644 E735842
Radius: 80 meters
Elevation: 340 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 06S
Range: 15E
Section: 33 **Qtr:** XX
Meridian: M

Location: 0.9 MILES SOUTHWEST OF HAYSTACK MOUNTAIN.
Location Detail: UTM COORDINATES ARE ALONG A DIRT ROAD.
Ecological: VERNAL POOL
Threat: IMPACTS DUE TO GRAZING.
General: NUMBER OFSPECIMENS NOT GIVEN.
Owner/Manager: UNKNOWN

Occurrence No. 244 **Map Index:** 67216 **EO Index:** 67373

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2006-04-13
Site: 2006-05-04
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17692° / -120.16574°
UTM: Zone-10 N4118261 E751623
Area:
Elevation: 280 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 16E
Section: 01 **Qtr:** XX
Meridian: M

Location: GREAT VALLEY CONSERVATION BANK, BETWEEN SANTA FE AVENUE & BAXTER ROAD, NORTH OF MARGUERITE RD, 6 MILES NE OF CHOWCHILLA.
Location Detail: 1073-ACRE GREAT VALLEY CONSERVATION BANK CONTAINS ~115 ACRES OF NATURAL-OCCURRING VERNAL POOLS AND VERNAL SWALES. 2001 SURVEYS: SPECIES PRIMARILY IN SOUTH PORTION OF BANK AND JUST OUTSIDE SOUTH AND EAST SIDES OF BANK.
Ecological: HABITAT CONSISTS OF NATURAL VERNAL POOLS WITHIN GRASSLANDS ON ALLUVIAL TERRACE. RIVERBANK FORMATION WITH BANDS OF TURLOCK FORMATION. AREA IS GRAZED LAND SURROUNDED BY AGRICULTURE, ORCHARDS, AND ENCROACHING DEVELOPMENT.
General: LOCATED IN 25 POOLS, 2001. MW-94-17 COLLECTED ON 30 MAR 1994 AND DEPOSITED AT DFG-IFD. SURVEYS CONDUCTED 10 & 13 APR AND 4 MAY 2006; >25 POOLS SAMPLED, LISTED SPECIES FOUND IN 11 POOLS. 20+ ADULTS AND 20+ JUVENILES OBSERVED ON 13 APR 2006.
Owner/Manager: PVT-WILDLANDS INC, KNAPP RANCH

Occurrence No. 248 **Map Index:** 69534 **EO Index:** 70311

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-13

Quad Summary: Haystack Mtn. (3712043/421A), Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.37525° / -120.35419°
UTM: Zone-10 N4139787 E734273
Area: 15.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 32 **Qtr:** XX
Meridian: M

Location: 0.4 MILE EAST OF BLACK RASCAL CREEK, 1.6 MILES WSW OF HAYSTACK MOUNTAIN, NORTHEAST OF MERCED.
Location Detail: POOL IDS: FLMSP5, FLMSP6, FM49.4. MAPPED IN THE SE 1/4 OF THE SW 1/4 OF SECTION 29 AND THE NE 1/4 OF THE NW 1/4OF SECTION 32. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF 2 STOCK PONDS AND A VERNAL POOL. BULLFROG PRESENT IN FLMSP5.
General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.
Owner/Manager: PVT-FLYING M RANCH

Lepidurus packardi

vernal pool tadpole shrimp — Element Code: ICBRA10010

Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro: POOLS COMMONLY FOUND IN GRASS BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED & HIGHLY TURBID.

Occurrence No. 249 **Map Index:** 69033 **EO Index:** 70313

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.37202° / -120.34892°
UTM: Zone-10 N4139441 E734750
Area: 8.0 acres
Elevation: 310 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 32 **Qtr:** NE
Meridian: M

Location: 0.6 MILE EAST OF BLACK RASCAL CREEK, 1.5 MILES SOUTHWEST OF HAYSTACK MOUNTAIN, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM77.2, FM77.3, FM77.4. MAPPED IN THE NW 1/4 OF THE NE 1/4 SECTION 32. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 250 **Map Index:** 69536 **EO Index:** 70314

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-13

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36856° / -120.32394°
UTM: Zone-10 N4139119 E736973
Radius: 80 meters
Elevation: 320 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 06S
Range: 15E
Section: 34 **Qtr:** NW
Meridian: M

Location: 1.2 MILES SSE OF HAYSTACK MOUNTAIN AND 1.1 MILES NNE OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL ID: FLMSP3. MAPPED IN THE SW 1/4 OF THE NW 1/4 OF SECTION 34. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A STOCK POND.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 251 **Map Index:** 69553 **EO Index:** 70330

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-19

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36196° / -120.30191°
UTM: Zone-10 N4138442 E738945
Radius: 80 meters
Elevation: 280 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 06S
Range: 15E
Section: 35 **Qtr:** SW
Meridian: M

Location: 0.25 MILE WEST OF BURNS CREEK AND 1.8 MILES SOUTHWEST OF THE BURNS CREEK DAM, NORTHEAST OF MERCED.

Location Detail: POOL ID: FM63.4. MAPPED CENTRALLY IN THE SOUTH HALF OF THE SW 1/4 OF SECTION 35. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.

Owner/Manager: PVT-FLYING M RANCH

Lepidurus packardi

vernal pool tadpole shrimp — Element Code: ICBRA10010

Status
Federal: Endangered
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.
Micro: POOLS COMMONLY FOUND IN GRASS BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED & HIGHLY TURBID.

Occurrence No. 252 **Map Index:** 69554 **EO Index:** 70331
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-19

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36499° / -120.30900°
UTM: Zone-10 N4138761 E738308
Area: 8.0 acres
Elevation: 272 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 34 **Qtr:** SE
Meridian: M

Location: 1.5 MILES ENE OF VABM HURRICANE AND 2 MILES WSW OF THE BURNS CREEK DAM, NORTHEAST OF MERCED.
Location Detail: POOL IDS: FM61.2 & FM61.4. MAPPED IN THE NE 1/4 OF THE SE 1/4 SECTION 34. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF A VERNAL POOL.
General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.
Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 253 **Map Index:** 69064 **EO Index:** 70334
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-19

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36036° / -120.31578°
UTM: Zone-10 N4138230 E737722
Area: 6.0 acres
Elevation: 280 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 34 **Qtr:** S
Meridian: M

Location: 1.0 MILE ENE OF VABM HURRICANE AND 2.5 MILES WSW OF THE BURNS CREEK DAM, NORTHEAST OF MERCED.
Location Detail: POOL IDS: FM73.1, FM73.2, FM73.3, FM73.4. MAPPED IN THE SE 1/4 OF THE SW 1/4 OF SECTION 34. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.
Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 254 **Map Index:** 69092 **EO Index:** 70340
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34849° / -120.31638°
UTM: Zone-10 N4136911 E737706
Area: 6.0 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 03 **Qtr:** SW
Meridian: M

Location: 1 MILE ESE OF VABM HURRICANE AND 0.5 MILE WEST OF BURNS CREEK, NORTHEAST OF MERCED.
Location Detail: POOL ID: FM72.2. MAPPED IN THE SE 1/4 OF THE SW 1/4 OF SECTION 3. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF A VERNAL POOL.
General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.
Owner/Manager: PVT-FLYING M RANCH

Lepidurus packardi

vernal pool tadpole shrimp — Element Code: ICBRA10010

Status — **NDDB Element Ranks** — **Other Lists**

Federal: Endangered — **Global:** G3 — **CDFG Status:**
State: None — **State:** S2S3

Habitat Associations

General: INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro: POOLS COMMONLY FOUND IN GRASS BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED & HIGHLY TURBID.

Occurrence No. 255 **Map Index:** 69045 **EO Index:** 70341

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36231° / -120.34970°
UTM: Zone-10 N4138361 E734711
Area: 6.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 32 **Qtr:** SE
Meridian: M

Location: 1.2 MI DIRECTLY EAST OF THE INTERSECTION OF BLACK RASCAL CK AND LE GRAND CANAL, 1 MI NW OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL IDS: FM52.2, FM52.4. MAPPED IN THE SW 1/4 OF THE SE 1/4 OF SECTION 32. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 256 **Map Index:** 69562 **EO Index:** 70342

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35676° / -120.34480°
UTM: Zone-10 N4137758 E735163
Radius: 80 meters
Elevation: 270 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 05 **Qtr:** NE
Meridian: M

Location: 1.5 MI ESE THE INTERSECT OF BLACK RASCAL CK AND LE GRAND CANAL, 0.6 MI WNW OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL ID: ICH16.4. MAPPED CENTRALLY IN THE EAST HALF OF THE NE 1/4 OF SECTION 5. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 257 **Map Index:** 69566 **EO Index:** 70345

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-20

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35410° / -120.34974°
UTM: Zone-10 N4137450 E734733
Area: 16.0 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 05 **Qtr:** N
Meridian: M

Location: 1.1-1.4 MI ESE OF THE INTERSECTION OF BLACK RASCAL CR & LE GRAND CANAL, ABOUT 1 MI W OF VABM HURRICANE, NE OF MERCED

Location Detail: POOL IDS: ICH14.1, ICH14.2, ICH15.1, ICH15.2, ICH15.3, & ICH15.4. MAPPED CENTRALLY IN THE EAST HALF OF THE NW 1/4 AND THE SW 1/4 OF THE NE 1/4 OF SECTION 5. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.

Owner/Manager: PVT-ICHORD RANCH

Lepidurus packardi

vernal pool tadpole shrimp — Element Code: ICBRA10010

Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro: POOLS COMMONLY FOUND IN GRASS BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED & HIGHLY TURBID.

Occurrence No. 258 **Map Index:** 69570 **EO Index:** 70348

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35334° / -120.36565°
UTM: Zone-10 N4137326 E733326
Area: 15.0 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 06 **Qtr:** E
Meridian: M

Location: 0.5 - 0.9 MILES SE OF THE INTERSECTION OF BLACK RASCAL CK/LE GRAND CANAL, 1.8 MILES WEST OF VABM HURRICANE, NE OF MERCED

Location Detail: POOL IDS: ICH10.1, ICH11.1 & ICH11.4. MAPPED IN THE NORTH HALF OF THE SE 1/4, AND THE SW 1/4 OF THE NE 1/4 OF SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 259 **Map Index:** 69571 **EO Index:** 70350

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-06-21

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35370° / -120.36057°
UTM: Zone-10 N4137379 E733775
Radius: 80 meters
Elevation: 266 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 06 **Qtr:** E
Meridian: M

Location: 0.9 MILE SE OF THE INTERSECTION OF BLACK RASCAL CK/LE GRAND CANAL, 1.5 MILES WEST OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL ID: ICH12.1. MAPPED IN THE SE 1/4 OF THE NE 1/4 OF SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 262 **Map Index:** 69594 **EO Index:** 70369

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16733° / -120.14750°
UTM: Zone-10 N4117246 E753274
Radius: 80 meters
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 17E
Section: 07 **Qtr:** NE
Meridian: M

Location: 0.25 MILE SOUTH THE JUNCTION OF MARGUERITE ROAD AND BAXTER ROAD, NORTH OF THE CHOWCHILLA RIVER, NORTHEAST OF CHOWCHILLA.

Location Detail: POOL ID: KNA05.1. MAPPED CENTRALLY ALONG THE EAST EDGE OF THE NE 1/4 OF SECTION 7. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A NATURAL VERNAL POOL WITHIN GRASSLANDS ON ALLUVIAL TERRACE. RIVERBANK FORMATION WITH BANDS OF TURLOCK FORMATION. AREA IS GRAZED LAND SURROUNDED BY AGRICULTURE, ORCHARDS, AND ENCROACHING DEVELOPMENT.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.

Owner/Manager: PVT-KNAPP RANCH

Lepidurus packardi

vernal pool tadpole shrimp — Element Code: ICBRA10010

Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro: POOLS COMMONLY FOUND IN GRASS BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED & HIGHLY TURBID.

Occurrence No. 263 **Map Index:** 69596 **EO Index:** 70371

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16811° / -120.13991°
UTM: Zone-10 N4117353 E753946
Area: 14.0 acres
Elevation: 315 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 08 **Qtr:** NW
Meridian: M

Location: 0.45 MILE ESE OF THE JUNCTION OF MARGUERITE ROAD AND BAXTER ROAD, NORTH OF THE CHOWCHILLA RIVER, NORTHEAST OF CHOWCHILLA

Location Detail: POOL IDS: KNA06.1, KNA06.2, KNA06.3 & KNA06.4. MAPPED IN THE NE 1/4 OF THE NW 1/4 OF SECTION 8. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF NATURAL VERNAL POOLS WITHIN GRASSLANDS ON ALLUVIAL TERRACE. RIVERBANK FORMATION WITH BANDS OF TURLOCK FORMATION. AREA IS GRAZED LAND SURROUNDED BY AGRICULTURE, ORCHARDS, AND ENCROACHING DEVELOPMENT.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.

Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 264 **Map Index:** 69597 **EO Index:** 70372

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-07-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16803° / -120.12780°
UTM: Zone-10 N4117377 E755022
Area: 13.0 acres
Elevation: 325 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 09 **Qtr:** NW
Meridian: M

Location: BETWEEN MARGUERITE ROAD AND THE CHOWCHILLA RIVER, 1 MILE EAST OF BAXTER ROAD, NORTHEAST OF CHOWCHILLA.

Location Detail: POOL IDS: KNA07.1, KNA07.2 & KNA07.3. MAPPED IN THE NW 1/4 OF THE NW 1/4 OF SECTION 9. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF NATURAL VERNAL POOLS WITHIN GRASSLANDS ON ALLUVIAL TERRACE. RIVERBANK FORMATION WITH BANDS OF TURLOCK FORMATION. AREA IS GRAZED LAND SURROUNDED BY AGRICULTURE, ORCHARDS, AND ENCROACHING DEVELOPMENT.

General: SPECIES OBSERVED IN VERNAL POOL DURING THE 2001 CRUSTACEAN SURVEYS. AREA IMPORTANT FOR CONSERVATION OF SPECIES DUE TO DENSITY OF LARGE VERNAL POOLS (ESPECIALLY RIVERBANK TERRACES ADJACENT TO THE CHOWCHILLA RIVER) AND UNFRAGMENTED HABITAT.

Owner/Manager: PVT-KNAPP RANCH

Linderiella occidentalis

California linderiella — Element Code: ICBRA06010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.
Micro: WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.

Occurrence No. 169 **Map Index:** 69228 **EO Index:** 41952
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-17

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35132° / -120.39334°
UTM: Zone-10 N4137034 E730879
Area: 390.0 acres
Elevation:
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 01 **Qtr:** XX
Meridian: M

Location: NORTH AND SOUTH OF LE GRAND CANAL, 2.1 MI EAST OF LAKE ROAD & 0.9 -1.8 MI NORTH OF YOSEMITE AVE, ~6 MILES NE OF MERCED.

Location Detail: UPPER TERRACE VERNAL POOL COMPLEX, 2 POOLS BLACK RASCAL CREEK COMPLEX, UNIVERSITY PARKWAY PROJECT. AREA MAPPED WITHIN THE NE 1/4 OF SECTION 2, THE WEST HALF OF SECTION 1, NE AND SE 1/4 OF NE 1/4 SECTION 11, AND NW 1/4 SECTION 12.

Ecological: VERNAL POOLS ASSOCIATED WITH RIDGES AND SWALES IN MIMA MOUND TOPOGRAPHY. POOLS MAINLY FOUND ON RIDGE-TOP TERRACES. CURRENT USE IS DRYLAND GRAZING. ORCHARDS TO S, CULTIVATED GRAIN TO SW, ANNUAL GRASSLAND/VERNAL POOL TO N AND E.

Threat: ROAD MAINTENANCE/IMPROVEMENT, DEVELOPMENT, AGRICULTURE.

General: 1999: 26 POOLS (128 POOLS SAMPLED IN COMPLEX) OCCUPIED BY LESS THAN 10 TO MORE THAN 1,000 INDIVIDUALS; SOME FAIRY SHRIMP UNIDENTIFIED DUE TO DISTURBED FLAGGING/DRY POOLS. SPECIES OBSERVED IN 3 VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS

Owner/Manager: PVT-ICHORD RANCH, UNKNOWN

Occurrence No. 170 **Map Index:** 40884 **EO Index:** 41953
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-03-16
Site: 2000-03-16
Record Last Updated: 2000-11-15

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36358° / -120.43554°
UTM: Zone-10 N4138292 E727104
Area: 117.5 acres
Elevation: 220 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 33 **Qtr:** SE
Meridian: M

Location: 0.2 MILE NW OF JCT OF LAKE AND BELLEVUE ROADS, 0.3 MILE SOUTH OF YOSEMITE LAKE, ~5 MILES NNE OF MERCED.

Location Detail: BELLEVUE VERNAL POOL COMPLEX, ALONG AND IN THE PROPOSED PARKWAY. BRANCHINECTA LYNCHI, B. MESOVALLENSIS ALSO PRESENT.

Ecological: HABITAT CONSISTS OF VERNAL POOLS, ANNUAL GRASSLANDS IN MIMA MOUND TOPOGRAPHY.

Threat: POOLS IN THE MAJOR PART OF THE PROPOSED PARKWAY PROJECT

General: 1 OF THE 11 POOLS SAMPLED WERE OCCUPIED BY MANY INDIVIDUALS, 1999. SHRIMP OBSERVED IN 60 POOL SITES, 2000.

Owner/Manager: PVT

Occurrence No. 171 **Map Index:** 69390 **EO Index:** 41954
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-03-16
Site: 2000-03-16
Record Last Updated: 2008-01-10

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35278° / -120.42866°
UTM: Zone-10 N4137111 E727746
Area: 51.0 acres
Elevation: 200 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 03 **Qtr:** W
Meridian: M

Location: COTTONWOOD CREEK, 0.3 MI SE TO 0.8 MI SSE JCT OF LAKE & BELLEVUE ROADS, 1 MILE S OF YOSEMITE LAKE, ~4.5 MI NE OF MERCED.

Location Detail: COTTONWOOD CREEK VERNAL POOL COMPLEX, EAST OF LAKE ROAD. LOCATED CENTRALLY IN THE NW 1/4 (1999) AND ALSO IN THE NORTH 1/2 OF THE SW 1/4 OF SECTION 3. BRANCHINECTA LYNCHI, B. MESOVALLENSIS ALSO PRESENT.

Ecological: HABITAT CONSISTS OF VERNAL POOLS, ANNUAL GRASSLANDS IN MIMA MOUND TOPOGRAPHY. AREA ALSO INCLUDES IRRIGATED PASTURE AND IRRIGATED GOLF COURSE.

Linderiella occidentalis

California linderiella

Element Code: ICBRA06010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.
Micro: WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.

Threat: COMPLEX ALONG & IN THE PROPOSED PARKWAY. EPHEMERAL HYDROLOGY ALTERED BY GOLF COURSE & AGRICULTURE IRRIGATION.
General: 7 POOLS OF THE 29 POOLS SAMPLED WERE OCCUPIED BY 10 TO MORE THAN 1,000 INDIVIDUALS, 1999; 1 POOL WITHIN THE COTTONWOOD CREEK COMPLEX HAD AN UNIDENTIFIED FAIRY SHRIMP. SHRIMP WERE PRESENT IN 27 POOL SITES, 2000.
Owner/Manager: PVT

Occurrence No. 300 **Map Index:** 69123 **EO Index:** 70522
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-08

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35273° / -120.29970°
UTM: Zone-10 N4137424 E739170
Area: 7.0 acres
Elevation: 260 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 02 **Qtr:** W
Meridian: M

Location: 0.15 MILE EAST OF BURNS CREEK AND 2.1 MILES DOWNSTREAM FROM THE BURNS CREEK DAM, NORTHEAST OF MERCED.
Location Detail: POOL ID: FM69.3. MAPPED IN THE SE 1/4 OF THE NW 1/4 AND NE 1/4 OF THE SW 1/4 OF SECTION 2. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."
Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 301 **Map Index:** 67766 **EO Index:** 70523
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-08

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35399° / -120.30652°
UTM: Zone-10 N4137547 E738562
Area: 7.0 acres
Elevation: 273 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 03 **Qtr:** NE
Meridian: M

Location: 0.2 MILE WEST OF BURNS CREEK AND 1.5 MILES DIRECTLY EAST OF VABM HURRICANE, NORTHEAST OF MERCED.
Location Detail: POOL ID'S: FM71.4. ALONG TRIBUTARY TO BURNS CREEK. MAPPED IN THE SE 1/4 OF THE NE 1/4 OF SECTION 3. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."
Owner/Manager: PVT-FLYING M RANCH

Linderiella occidentalis

California linderiella — Element Code: ICBRA06010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.
Micro: WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.

Occurrence No. 302 **Map Index:** 69064 **EO Index:** 70524
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-08

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36036° / -120.31578°
UTM: Zone-10 N4138230 E737722
Area: 6.0 acres
Elevation: 280 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 34 **Qtr:** S
Meridian: M

Location: 1.8 MILES SSE OF HAYSTACK MOUNTAIN AND 1 MILE ENE OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM73.1, FM73.3. MAPPED IN THE SE 1/4 OF THE SW 1/4 AND SW 1/4 OF THE SE 1/4 OF SECTION 34. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 303 **Map Index:** 69735 **EO Index:** 70538
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-14

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36460° / -120.33467°
UTM: Zone-10 N4138653 E736035
Area: 7.0 acres
Elevation: 355 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 33 **Qtr:** SW
Meridian: M

Location: 1.5 MILES SOUTH OF HAYSTACK MOUNTAIN AND 0.7 MILE DIRECTLY NORTH OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM55.1, FM55.2. MAPPED IN THE NE 1/4 OF THE SW 1/4 SECTION 33. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 304 **Map Index:** 69033 **EO Index:** 70539
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-14

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.37202° / -120.34892°
UTM: Zone-10 N4139441 E734750
Area: 8.0 acres
Elevation: 310 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 32 **Qtr:** NE
Meridian: M

Location: EAST OF BLACK RASCAL CREEK, 1.5 MILES SOUTHWEST OF HAYSTACK MOUNTAIN, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM77.3, FM77.4. MAPPED IN THE NW 1/4 OF THE NE 1/4 SECTION 32. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-FLYING M RANCH

Linderiella occidentalis

California linderiella — Element Code: ICBRA06010

Status — Federal: None; State: None

NDDB Element Ranks — Global: G3; State: S2S3

Other Lists — CDFG Status:

Habitat Associations

General: SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.

Micro: WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.

Occurrence No. 305 **Map Index:** 69043 **EO Index:** 70540

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-14

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.37327° / -120.35423°
UTM: Zone-10 N4139567 E734276
Area: 6.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 32 **Qtr:** NW
Meridian: M

Location: EAST OF BLACK RASCAL CREEK, 1.7 MILES SOUTHWEST OF HAYSTACK MOUNTAIN, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM49.4. MAPPED IN THE NE 1/4 OF THE NW 1/4 SECTION 32. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 306 **Map Index:** 69045 **EO Index:** 70541

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-14

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36231° / -120.34970°
UTM: Zone-10 N4138361 E734711
Area: 6.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 32 **Qtr:** SE
Meridian: M

Location: 1.2 MI DIRECTLY EAST OF THE INTERSECTION OF BLACK RASCAL CK AND LE GRAND CANAL, 1 MI NW OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL IDS: FM52.4. MAPPED IN THE SW 1/4 OF THE SE 1/4 SECTION 32. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 307 **Map Index:** 69053 **EO Index:** 70542

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-14

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36167° / -120.34091°
UTM: Zone-10 N4138312 E735491
Area: 7.0 acres
Elevation: 280 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 33 **Qtr:** SW
Meridian: M

Location: 1.75 MILES SSW OF HAYSTACK MOUNTAIN AND 0.6 MILES NORTHWEST OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: FM53.2. MAPPED IN THE SW 1/4 OF THE SW 1/4 SECTION 33. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-FLYING M RANCH

Linderiella occidentalis

California linderiella — Element Code: ICBRA06010

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.

Micro: WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.

Occurrence No. 308 **Map Index:** 69738 **EO Index:** 70545

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-15

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35827° / -120.33428°
UTM: Zone-10 N4137951 E736090
Area: 5.0 acres
Elevation: 325 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 04 **Qtr:** NW
Meridian: M

Location: 0.25 MILES NNW OF VABM HURRICANE, NORTHEAST OF MERCED.

Location Detail: POOL IDS: ICH19.2. MAPPED IN THE NE 1/4 OF THE NW 1/4 SECTION 4. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 309 **Map Index:** 69739 **EO Index:** 70546

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-15

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35317° / -120.33879°
UTM: Zone-10 N4137375 E735706
Area: 8.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 04 **Qtr:** NW
Meridian: M

Location: EAST OF LE GRAND CANAL AND 0.3 MILE WSW OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL IDS: ICH17.1, ICH17.3. MAPPED PRIMARILY IN THE SW 1/4 OF THE NW 1/4 SECTION 4. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 310 **Map Index:** 67753 **EO Index:** 70547

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-16

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35375° / -120.34959°
UTM: Zone-10 N4137412 E734747
Area: 14.0 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 05 **Qtr:** N
Meridian: M

Location: EAST OF LE GRAND CANAL, 4.5 MILES ESE OF THE SOUTH END OF YOSEMITE LAKE & 1 MILE WEST OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL IDS: ICH14.2, ICH15.2, ICH15.3, ICH15.4. LOCATION MAPPED BETWEEN THE NE AND SE 1/4 OF THE NW 1/4 AND THE SW 1/4 OF THE NE 1/4 SECTION 5. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-ICHORD RANCH

Linderiella occidentalis

California linderiella — Element Code: ICBRA06010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.
Micro: WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.

Occurrence No. 311 Map Index: 69741 EO Index: 70549
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-15

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35242° / -120.36401°
UTM: Zone-10 N4137228 E733474
Area: 50.0 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 06 Qtr: E
Meridian: M

Location: EAST TO SOUTHEAST INTERSECTION OF BLACK RASCAL CREEK/LE GRAND CANAL AND 1.7 MILES WEST OF VABM HURRICANE, NE OF MERCED.

Location Detail: POOL IDS: ICH10.1, ICH10.2, ICH10.4, ICH11.1, ICH11.2, ICH11.3, ICH12.1, ICH12.3, ICH13.1. MAPPED IN THE EASTERN HALF OF SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 312 Map Index: 69174 EO Index: 70554
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-17

Quad Summary: Planada (3712033/421D), Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35105° / -120.38171°
UTM: Zone-10 N4137033 E731910
Area: 513.0 acres
Elevation:
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 01 Qtr: XX
Meridian: M

Location: SOUTH OF LE GRAND CANAL, 2.9 MILES EAST OF LAKE RD AND 0.5 -2 MILES NORTH OF YOSEMITE AVE, ~6 MILES NE OF MERCED.

Location Detail: BLACK RASCAL CREEK VERNAL POOL COMPLEX, UNIVERSITY PARKWAY PROJECT. AREA MAPPED WITHIN THE E PORTION OF SECTION 1, THE WESTMOST PORTION OF SECTION 6, NE 1/4 SECTION 12 & BARELY INTO NW 1/4 OF SECTION 7.

Ecological: VERNAL POOLS. MIMA MOUND TOPOGRAPHY WITH MANY SWALES LOCATED WEST OF CREEK. CURRENT USE IS DRYLAND GRAZING. SIMILAR HABITATS TO WEST, NORTH, AND EAST OF COMPLEX; ORCHARDS LOCATED TO THE SOUTH.

Threat: ROAD MAINTENANCE/IMPROVEMENT, DEVELOPMENT, AGRICULTURE.

General: 1999: 18 POOLS OF THE 315 POOLS SAMPLED HAD LESS THAN 10 TO MORE THAN 1,000 INDIVIDUALS, 29 MORE POOLS HAD AN UNIDENTIFIED FAIRY SHRIMP PRESENT. SPECIES OBSERVED IN 1 VERNAL POOL (ICH25.1) DURING 2001 CRUSTACEAN SURVEYS.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 313 Map Index: 69772 EO Index: 70577
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2008-01-03

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36119° / -120.40536°
UTM: Zone-10 N4138100 E729784
Area: 8.0 acres
Elevation: 260 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 35 Qtr: NW
Meridian: M

Location: NORTH OF LE GRAND CANAL, 1.5 MILES DIRECTLY EAST THE INTERSECT OF LAKE RD AND BELLVUE RD, 1.5 MILES SE OF YOSEMITE LAKE.

Location Detail: UPPER TERRACE VERNAL POOL COMPLEX, UNIVERSITY PARKWAY PROJECT. LOCATION MAPPED AT THE NE EDGE OF THE NE 1/4 OF THE NW 1/4 SECTION 2. OTHER POOLS IN COMPLEX LOCATED TO WEST.

Linderiella occidentalis

California linderiella — Element Code: ICBRA06010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.
Micro: WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.

Ecological: VERNAL POOLS ASSOCIATED WITH RIDGES AND SWALES IN MIMA MOUND TOPOGRAPHY. POOLS MAINLY FOUND ON RIDGE-TOP TERRACES. CURRENT USE IS DRYLAND GRAZING. ORCHARDS TO S, CULTIVATED GRAIN TO SW, ANNUAL GRASSLAND/VERNAL POOL TO N AND E.
Threat: ROAD MAINTENANCE/IMPROVEMENT, DEVELOPMENT, AGRICULTURE.
General: OBSERVED IN 1 POOL, 1999. OTHER FAIRY SHRIMP IN THIS COMPLEX LOCATED TO THE EAST. SOME FAIRY SHRIMP IN THIS COMPLEX WERE UNIDENTIFIED DUE TO DISTURBED FLAGGING/DRY POOLS.
Owner/Manager: UNKNOWN

Occurrence No. 314 Map Index: 69773 EO Index: 70582
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2008-01-03

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35908° / -120.41028°
UTM: Zone-10 N4137854 E729355
Area: 5.0 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 02 Qtr: NW
Meridian: M

Location: NORTH OF LE GRAND CANAL, 1.2 MILES NEAR DIRECTLY EAST INTERSECT OF LAKE RD & BELLVUE RD, 1.4 MILES ESE OF YOSEMITE LAKE
Location Detail: UPPER TERRACE VERNAL POOL COMPLEX, UNIVERSITY PARKWAY PROJECT. LOCATION MAPPED IN THE NW 1/4 OF THE NW 1/4 SECTION 2. OTHER POOLS IN COMPLEX LOCATED TO WEST.
Ecological: VERNAL POOLS ASSOCIATED WITH RIDGES AND SWALES IN MIMA MOUND TOPOGRAPHY. POOLS MAINLY FOUND ON RIDGE-TOP TERRACES. CURRENT USE IS DRYLAND GRAZING. ORCHARDS TO S, CULTIVATED GRAIN TO SW, ANNUAL GRASSLAND/VERNAL POOL TO N AND E.
Threat: ROAD MAINTENANCE/IMPROVEMENT, DEVELOPMENT, AGRICULTURE.
General: OBSERVED IN 1 POOL, 1999. OTHER FAIRY SHRIMP IN THIS COMPLEX LOCATED TO THE EAST. SOME FAIRY SHRIMP IN THIS COMPLEX WERE UNIDENTIFIED DUE TO DISTURBED FLAGGING/DRY POOLS.
Owner/Manager: UNKNOWN

Occurrence No. 323 Map Index: 69785 EO Index: 70598
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-22

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.31972° / -120.25878°
UTM: Zone-10 N4133866 E742902
Radius: 80 meters
Elevation: 290 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 18 Qtr: SE
Meridian: M

Location: JUST NORTH OF MILES CREEK, 0.7 MILE SSW OF THE JUNCTION OF HIGHWAY 140 AND CUNNINGHAM ROAD, 3.8 MI NE OF PLANADA
Location Detail: POOL ID: CUN06.4. MAPPED IN THE NW 1/4 OF THE SE 1/4 OF SECTION 18. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF A VERNAL POOL.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."
Owner/Manager: PVT-CUNNINGHAM RANCH

Linderiella occidentalis

California linderiella — Element Code: ICBRA06010

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.

Micro: WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.

Occurrence No. 324 **Map Index:** 69786 **EO Index:** 70599

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-22

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.31405° / -120.26697°
UTM: Zone-10 N4133215 E742194
Area: 23.0 acres
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 16E
Section: 19 **Qtr:** NW
Meridian: M

Location: ALONG MILES CREEK, 1.2 MILES SW OF THE JUNCTION OF HIGHWAY 140 AND CUNNINGHAM ROAD, 3.2 MI ENE OF PLANADA

Location Detail: POOL IDS: CUN04.1. CUN04.4, CUN10.4 MAPPED IN THE NW 1/4 (SLIGHTLY INTO NE 1/4) OF THE NW 1/4 OF SECTION 19. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 325 **Map Index:** 69790 **EO Index:** 70604

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-23

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.29531° / -120.26850°
UTM: Zone-10 N4131132 E742119
Radius: 80 meters
Elevation: 255 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 30 **Qtr:** NW
Meridian: M

Location: 1.1 MILES NORTHWEST THE INTERSECTION OF CUNNINGHAM ROAD AND CHILDS AVENUE, 2.5 MILES EAST OF PLANADA.

Location Detail: POOL ID: CUN07.2. MAPPED IN THE SW 1/4 OF THE NW 1/4 OF SECTION 30. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 326 **Map Index:** 69451 **EO Index:** 70607

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-23

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.30328° / -120.26004°
UTM: Zone-10 N4132037 E742843
Radius: 80 meters
Elevation: 305 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 19 **Qtr:** SE
Meridian: M

Location: SOUTH OF MILES CREEK, 1.7 MILES SSW OF THE JUNCTION OF HIGHWAY 140 AND CUNNINGHAM ROAD, 3.3 MILES ENE OF PLANADA.

Location Detail: POOL ID: CUN13.2. MAPPED IN THE SW 1/4 OF THE SE 1/4 OF SECTION 19. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOL.

General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."

Owner/Manager: PVT-CUNNINGHAM RANCH

Linderiella occidentalis

California linderiella

Element Code: ICBRA06010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.
Micro: WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.

Occurrence No. 334 Map Index: 69802 EO Index: 70625
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-23

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17705° / -120.17055°
UTM: Zone-10 N4118263 E751195
Area: 11.0 acres
Elevation: 295 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 16E
Section: 01
Meridian: M
Qtr: SE

Location: 0.4 MILE NORTH OF MARGUERITE RD AND 1.3 MILES WEST OF BAXTER ROAD, 6.2 MILES NORTHEAST OF CHOWCHILLA.
Location Detail: POOL IDS: FLY04.3, FLY04.4. MAPPED IN THE NW 1/4 OF THE SE 1/4 OF SECTION 1. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."
Owner/Manager: PVT-FLYNN RANCH

Occurrence No. 335 Map Index: 69803 EO Index: 70626
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-23

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17548° / -120.16484°
UTM: Zone-10 N4118104 E751707
Area: 11.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 06
Meridian: M
Qtr: SW

Location: 0.3 MILE NORTH OF MARGUERITE RD AND 1 MILE WEST OF BAXTER ROAD, 6.2 MILES NORTHEAST OF CHOWCHILLA.
Location Detail: POOL ID: FLY07.1. MAPPED IN THE NW 1/4 OF THE SW 1/4 OF SECTION 6. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF A VERNAL POOL.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."
Owner/Manager: PVT-FLYNN RANCH

Occurrence No. 336 Map Index: 69823 EO Index: 70627
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-28

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17051° / -120.17164°
UTM: Zone-10 N4117535 E751120
Area: 14.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 16E
Section: 12
Meridian: M
Qtr: NE

Location: JUST SOUTH OF MARGUERITE RD AND 1.3 MILES WEST OF BAXTER ROAD, 5.8 MILES NORTHEAST OF CHOWCHILLA.
Location Detail: POOL ID: KNA01.3, KNA01.4. MAPPED IN THE NW 1/4 OF THE NE 1/4 OF SECTION 12. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."
Owner/Manager: PVT-KNAPP RANCH

Linderiella occidentalis

California linderiella

Element Code: ICBRA06010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.
Micro: WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.

Occurrence No. 337 **Map Index:** 69825 **EO Index:** 70644
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-28

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16735° / -120.16390°
UTM: Zone-10 N4117204 E751818
Area: 7.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 07 **Qtr:** NW
Meridian: M

Location: 0.9 MI WSW OF THE INTERSECTION OF MARGUERITE RD & BAXTER RD, 0.25 MI S OF MARGUERITE RD, 6 MI NE OF CHOWCHILLA.
Location Detail: POOL ID: KNA02.1. MAPPED CENTRALLY BETWEEN THE NW AND SW 1/4 OF THE NW 1/4 OF SECTION 7. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF A VERNAL POOL.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."
Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 338 **Map Index:** 69829 **EO Index:** 70647
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-28

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.18166° / -120.15497°
UTM: Zone-10 N4118817 E752563
Area: 7.0 acres
Elevation: 310 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 06 **Qtr:** NE
Meridian: M

Location: 0.4 MILE WEST OF BAXTER ROAD AND 0.75 MILE NORTH OF MARGUERITE ROAD, 6.9 MILES NORTHEAST OF CHOWCHILLA.
Location Detail: POOL ID: FLY02.3. MAPPED CENTRALLY BETWEEN THE NW AND SW 1/4 OF THE NE 1/4 OF SECTION 6. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF A VERNAL POOL.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."
Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 339 **Map Index:** 69831 **EO Index:** 70649
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-28

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17445° / -120.15741°
UTM: Zone-10 N4118010 E752371
Area: 21.0 acres
Elevation: 310 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 06 **Qtr:** S
Meridian: M

Location: AREA 0.6 MILE NORTHWEST INTERSECTION OF MARGUERITE ROAD AND BAXTER ROAD, 6.6 MILES NORTHEAST OF CHOWCHILLA.
Location Detail: POOL ID: FLY08.1, FLY08.2, FLY09.1. MAPPED IN THE NW 1/4 OF THE SE 1/4 AND CENTRALLY BETWEEN THE NE AND SE 1/4 OF THE SW 1/4 OF SECTION 6. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."
Owner/Manager: PVT-FLYNN RANCH

Linderiella occidentalis

California linderiella — Element Code: ICBRA06010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.
Micro: WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.

Occurrence No. 340 **Map Index:** 69499 **EO Index:** 70653
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-29

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17004° / -120.15518°
UTM: Zone-10 N4117527 E752584
Area: 10.0 acres
Elevation: 311 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 07 **Qtr:** NE
Meridian: M

Location: JUST SOUTH OF MARGUERITE RD, 0.4 MILE WEST OF THE JUNCTION OF MARGUERITE RD AND BAXTER RD, 6.5 MILES NE OF CHOWCHILLA.
Location Detail: POOL ID: KNA03.2, KNA03.4. MAPPED IN THE NW 1/4 OF THE NE 1/4 SECTION 7. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."
Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 341 **Map Index:** 69596 **EO Index:** 70654
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-29

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16811° / -120.13991°
UTM: Zone-10 N4117353 E753946
Area: 14.0 acres
Elevation: 315 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 08 **Qtr:** NW
Meridian: M

Location: 0.45 MILE ESE OF THE JUNCTION OF MARGUERITE ROAD AND BAXTER ROAD, NORTH OF THE CHOWCHILLA RIVER, NORTHEAST OF CHOWCHILLA
Location Detail: POOL IDS: KNA06.1, KNA06.3. MAPPED IN THE NE 1/4 OF THE NW 1/4 OF SECTION 8. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."
Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 342 **Map Index:** 69597 **EO Index:** 70655
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-08-29

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.16803° / -120.12780°
UTM: Zone-10 N4117377 E755022
Area: 13.0 acres
Elevation: 325 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 09 **Qtr:** NW
Meridian: M

Location: BETWEEN MARGUERITE ROAD AND THE CHOWCHILLA RIVER, 1 MILE EAST OF BAXTER ROAD, NORTHEAST OF CHOWCHILLA.
Location Detail: POOL IDS: KNA07.1, KNA07.2 & KNA07.3. MAPPED IN THE NW 1/4 OF THE NW 1/4 OF SECTION 9. LOCATION MAPPED USING DIGITAL DATA.
Ecological: HABITAT CONSISTS OF VERNAL POOLS.
General: SPECIES OBSERVED IN VERNAL POOLS DURING THE 2001 CRUSTACEAN SURVEYS. MERCED COUNTY "STUDY AREA OFFERS HIGH QUALITY AND QUANTITY OF HABITAT."
Owner/Manager: PVT-KNAPP RANCH

Linderiella occidentalis

California linderiella

Element Code: ICBRA06010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.
Micro: WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.

Occurrence No. 343 **Map Index:** 70655 **EO Index:** 71563

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2008-01-03

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36014° / -120.42205°
UTM: Zone-10 N4137943 E728309
Area: 30.0 acres
Elevation: 200 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 07S
Range: 14E
Section: 03 **Qtr:** XX
Meridian: M

Location: COTTONWOOD CREEK, 0.3 TO 0.6 MI E OF THE JCT OF LAKE & BELLEVUE ROADS, 0.7 MILE SSE OF YOSEMITE LAKE, 4.5 MI NE MERCED.

Location Detail: COTTONWOOD CREEK VERNAL POOL COMPLEX, EAST OF LAKE ROAD. LOCATED IN THE NW 1/4 OF THE NE 1/4 SECTION 3 (AND JUST NORTH SEC 3) & ALSO IN THE SE 1/4 OF THE SW 1/4 OF SECTION 34. BRANCHINECTA MESOVALLENSIS AND AND B. LYNCHI ALSO IN AREA.

Ecological: HABITAT CONSISTS OF VERNAL POOLS, ANNUAL GRASSLANDS IN MIMA MOUND TOPOGRAPHY.

Threat: COMPLEX ALONG & IN THE PROPOSED PARKWAY. EPHEMERAL HYDROLOGY ALTERED BY GOLF COURSE & AGRICULTURE IRRIGATION.

General: SPECIES OBSERVED IN 6 OF 31 SAMPLED POOLS DURING 1999.

Owner/Manager: PVT

Myotis yumanensis

Yuma myotis

Element Code: AMACC01020

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5
State: S4?

Other Lists
CDFG Status:

Habitat Associations
General: OPTIMAL HABITATS ARE OPEN FORESTS AND WOODLANDS WITH SOURCES OF WATER OVER WHICH TO FEED.
Micro: DISTRIBUTION IS CLOSELY TIED TO BODIES OF WATER. MATERNITY COLONIES IN CAVES, MINES, BUILDINGS OR CREVICES.

Occurrence No. 10 **Map Index:** 46837 **EO Index:** 46837

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-05-10
Site: 2001-05-10
Record Last Updated: 2002-01-18

Quad Summary: Plainsburg (3712023/401A)
County Summary: Merced

Lat/Long: 37.18045° / -120.32391°
UTM: Zone-10 N4118244 E737567
Radius: 1/10 mile
Elevation: 215 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 15E
Section: 03
Meridian: M
Qtr: NW

Location: HWY 99 BRIDGE OVER DUTCHMAN CREEK, NEAR PLAINSBURG ROAD & SOUTHERN PACIFIC RAILROAD TRACKS. 5 MILES NW OF CHOWCHILLA.

Ecological: HABITAT CONSISTS OF VALLEY-FOOTHILL RIPARIAN SURROUNDED BY AGRICULTURAL LAND.

Threat: HUMAN DISTURBANCE

General: 10 MAY 2001: NIGHT ROOST SITE LOCATED. APPROXIMATELY 30 INDIVIDUALS OBSERVED BETWEEN THIS ROOST SITE AND ANOTHER ROOST SITE LOCATED NEAR CHOWCHILLA RIVER.

Owner/Manager: UNKNOWN

Occurrence No. 11 **Map Index:** 46839 **EO Index:** 46839

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-05-10
Site: 2001-05-10
Record Last Updated: 2002-01-18

Quad Summary: Plainsburg (3712023/401A)
County Summary: Madera, Merced

Lat/Long: 37.15285° / -120.29048°
UTM: Zone-10 N4115266 E740623
Radius: 1/10 mile
Elevation: 233 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 15E
Section: 13
Meridian: M
Qtr: NW

Location: HWY 99 BRIDGE OVER THE CHOWCHILLA RIVER . 2.5 MILES NW OF CHOWCHILLA

Ecological: HABITAT CONSISTS OF VALLEY-FOOTHILL RIPARIAN SURROUNDED BY AGRICULTURAL LAND.

Threat: HUMAN DISTURBANCE

General: 10 MAY 2001: SITE IS DAY AND NIGHT ROOST. APPROXIMATELY 30 INDIVIDUALS OBSERVED BETWEEN THIS ROOST SITE AND ANOTHER ROOST SITE LOCATED AT DUTCHMAN CREEK.

Owner/Manager: UNKNOWN

Navarretia nigelliformis ssp. radians

shining navarretia

Element Code: PDPLM0C0J2

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4T2T3
State: S2S3.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.
Micro: APPARENTLY IN GRASSLAND, AND NOT NECESSARILY IN VERNAL POOLS. 200-1000M.

Occurrence No. 21 Map Index: 43569 EO Index: 43569
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-05-XX
Site: 1999-05-XX
Record Last Updated: 2000-08-22

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36948° / -120.40711°
UTM: Zone-10 N4139015 E729604
Area: 7.8 acres
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 35 Qtr: NW
Meridian: M

Location: EAST OF YOSEMITE LAKE, ABOUT OF LE GRAND CANAL BOUT 1.1 MILES EAST OF LAKE ROAD AT CANAL CROSSING, NORTHEAST OF MERCED.
Location Detail: THREE POLYGONS MAPPED WITHIN THE SE 1/4 NW 1/4 SECTION 35 AND THE NW 1/4 SE 1/4 SECTION 35.
Ecological: ALKALI CLAY FLATS/ANNUAL GRASSLAND.
Threat: CATTLE GRAZING, PROPOSED DEVELOPMENT OF UC MERCED.
General: UNKNOWN NUMBER OF PLANTS OBSERVED IN FIVE COLONIES IN 1999.
Owner/Manager: PVT

Occurrence No. 22 Map Index: 43571 EO Index: 43571
Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-05-22
Site: 2001-05-22
Record Last Updated: 2003-07-28

Quad Summary: Merced (3712034/421C), Yosemite Lake (3712044/421B)
County Summary: Merced

Lat/Long: 37.37872° / -120.40166°
UTM: Zone-10 N4139832 E730065
Area: 200.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 26 Qtr: W
Meridian: M

Location: EAST OF YOSEMITE LAKE, ABOUT 0.1-2 MILES EAST OF THE LAKE AND 0.1-2 MILES NORTH OF LE GRAND CANAL, NORTHEAST OF MERCED.
Location Detail: LARGE AREA WITH NUMEROUS POLYGONS MAPPED WITHIN MUCH OF SECTION 26 AND 35, THE N 1/2 SECTION 34, AND THE W 1/2 OF SECTIONS 25 AND 36. NEED GIS GRAPHICS TO APPRECIATE.
Ecological: ALKALI CLAY FLATS/ANNUAL GRASSLAND.
Threat: CATTLE GRAZING, PROPOSED DEVELOPMENT OF UC MERCED.
General: UNKNOWN NUMBER OF PLANTS OBSERVED IN 129 COLONIES IN 1999. UNKNOWN NUMBER OF PLANTS SEEN IN 2001 AT NEW SOUTHEASTERN COLONIES.
Owner/Manager: PVT

Occurrence No. 24 Map Index: 44068 EO Index: 44068
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-05-15
Site: 2001-05-15
Record Last Updated: 2003-07-17

Quad Summary: Planada (3712033/421D), Owens Reservoir (3712032/420C)
County Summary: Merced

Lat/Long: 37.33305° / -120.25139°
UTM: Zone-10 N4135364 E743514
Area: 60.9 acres
Elevation: 295 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 16E
Section: 08 Qtr: SW
Meridian: M

Location: ALONG NORTH SIDE OF HIGHWAY 140, ABOUT 4.5 MILES NORTHEAST OF PLANADA.
Location Detail: MAPPED MOSTLY WITHIN THE W 1/2 OF THE SW 1/4 OF SECTION 8, THE NW 1/4 OF THE NW 1/4 OF SECTION 17, AND THE NE 1/4 OF THE NE 1/4 OF SECTION 18.
Ecological: VERNAL SWALE DOMINATED BY MESIC ANNUAL GRASSES INCLUDING LOLIUM MULTIFLORUM AND HORDEUM MARINUM SSP. GUSSONEANUM.
Threat: SITE APPEARS TO BE OVERGRAZED.
General: 20+ PLANTS OBSERVED IN 2000. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT

Navarretia nigelliformis ssp. radians

shining navarretia

Element Code: PDPLM0C0J2

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4T2T3
State: S2S3.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.
Micro: APPARENTLY IN GRASSLAND, AND NOT NECESSARILY IN VERNAL POOLS. 200-1000M.

Occurrence No. 33 **Map Index:** 51801 **EO Index:** 51801

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-05-21
Site: 2001-05-21
Record Last Updated: 2003-07-17

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35625° / -120.37063°
UTM: Zone-10 N4137637 E732876
Area: 40.2 acres
Elevation: 250 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 07S
Range: 15E
Section: 06 **Qtr:** N
Meridian: M

Location: WEST OF LE GRAND CANAL, ABOUT 0.5 MILE SOUTH OF BLACK RASCAL CREEK, EASTERN MERCED COUNTY.
Location Detail: MAPPED WITHIN THE E 1/2 OF THE N W 1/4 AND THE NW 1/4 OF THE NE 1/4 OF SECTION 6.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 34 **Map Index:** 51802 **EO Index:** 51802

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-05-22
Site: 2001-05-22
Record Last Updated: 2003-07-17

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35006° / -120.36486°
UTM: Zone-10 N4136965 E733406
Radius: 80 meters
Elevation: 250 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 07S
Range: 15E
Section: 06 **Qtr:** SE
Meridian: M

Location: ICHORD RANCH, ABOUT 4.5 MILES NNW OF PLANADA AND 1.6 MILES WSW OF VABM HURRICANE, JUST NORTH OF THE LE GRAND CANAL.
Location Detail: MAPPED NEAR THE CENTER OF THE SE 1/4 OF SECTION 6.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 35 **Map Index:** 51803 **EO Index:** 51803

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-05-22
Site: 2001-05-22
Record Last Updated: 2003-07-17

Quad Summary: Merced (3712034/421C), Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34282° / -120.37463°
UTM: Zone-10 N4136137 E732563
Area: 16.9 acres
Elevation: 220 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 07S
Range: 15E
Section: 07 **Qtr:** NW
Meridian: M

Location: BETWEEN BLACK RASCAL CREEK AND LE GRAND CANAL, ABOUT 0.8 AIRMILE ENE OF APPLEGATE LATERAL CANAL AT BLACK RASCAL CREEK.
Location Detail: MAPPED WITHIN THE W 1/2 OF THE NW 1/4 OF SECTION 7.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Navarretia nigelliformis ssp. radians

shining navarretia — Element Code: PDPLM0C0J2

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4T2T3
State: S2S3.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.
Micro: APPARENTLY IN GRASSLAND, AND NOT NECESSARILY IN VERNAL POOLS. 200-1000M.

Occurrence No. 36 **Map Index:** 51804 **EO Index:** 51804
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-05-16
Site: 2001-05-16
Record Last Updated: 2003-07-17

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.29461° / -120.26513°
UTM: Zone-10 N4131062 E742420
Area: 20.6 acres
Elevation: 265 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 16E
Section: 30 **Qtr:** W
Meridian: M

Location: 0.85 AIRMILE NORTHWEST OF INTERSECTION OF CHILDS AVENUE AND CUNNINGHAM ROAD, CUNNINGHAM RANCH, EASTERN MERCED COUNTY.
Location Detail: MAPPED JUST TO THE WEST OF THE CENTER OF SECTION 30.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 37 **Map Index:** 51808 **EO Index:** 51808
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-26
Site: 2001-06-26
Record Last Updated: 2003-07-17

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35597° / -120.43181°
UTM: Zone-10 N4137457 E727457
Area:
Elevation: 210 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 03 **Qtr:** NW
Meridian: M

Location: ON EAST SIDE OF LAKE ROAD, ABOUT 0.5 MILE SOUTH OF BELLEVUE ROAD, FLYING M RANCH, EASTERN MERCED COUNTY.
Location Detail: MAPPED WITHIN THE SW 1/4 OF THE NW 1/4 OF SECTION 3.
Ecological: CALIFORNIA ANNUAL GRASSLAND.
Threat: CATTLE GRAZING.
General: 8 PLANTS SEEN BY EIP ASSOCIATES IN 2001.
Owner/Manager: PVT-FLYING M RANCH

Occurrence No. 38 **Map Index:** 51809 **EO Index:** 51809
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-05-22
Site: 2001-05-22
Record Last Updated: 2003-07-17

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34784° / -120.38689°
UTM: Zone-10 N4136664 E731461
Radius: 80 meters
Elevation: 220 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 14E
Section: 01 **Qtr:** SE
Meridian: M

Location: BETWEEN LE GRAND CANAL & BLACK RASCAL CREEK, 0.75 MI NORTH OF BLACK RASCAL CREEK AT APPLEGATE CANAL, EASTERN MERCED CTY.
Location Detail: MAPPED WITHIN THE SW 1/4 OF THE SE 1/4 OF SECTION 1.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Navarretia nigelliformis ssp. radians

shining navarretia

Element Code: PDPLM0C0J2

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4T2T3
State: S2S3.2

Other Lists
CNPS List: 1B.2

Habitat Associations
General: CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.
Micro: APPARENTLY IN GRASSLAND, AND NOT NECESSARILY IN VERNAL POOLS. 200-1000M.

Occurrence No. 39 Map Index: 51810 EO Index: 51810

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-05-22
Site: 2001-05-22
Record Last Updated: 2003-07-17

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34360° / -120.39413°
UTM: Zone-10 N4136176 E730833
Area: 13.7 acres
Elevation: 230 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 07S
Range: 14E
Section: 12 Qtr: NW
Meridian: M

Location: SOUTHEAST OF YOSEMITE LAKE, NORTH FAIRFIELD CANAL ABOUT 0.75 MI NORTH OF BLACK RASCAL CREEK CROSSING, NE OF MERCED.
Location Detail: MAPPED WITHIN THE W 1/2 OF THE NW 1/4 OF SECTION 12.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 44 Map Index: 51853 EO Index: 51853

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-26
Site: 2001-04-26
Record Last Updated: 2003-07-28

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.24800° / -120.23389°
UTM: Zone-10 N4125970 E745340
Area: 13.1 acres
Elevation: 270 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 08S
Range: 16E
Section: 09 Qtr: SW
Meridian: M

Location: NORTHWEST OF LE GRAND, 0.85 MILE NORTH OF LE GRAND CANAL AT MARIPOSA CREEK.
Location Detail: MAPPED MOSTLY WITHIN THE W 1/2 OF THE SW 1/4 OF SECTION 9.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS DIGITAL DATA FROM VOLLMAR. UNKNOWN NUMBER OF PLANTS SEEN IN 2001.
Owner/Manager: PVT-CROOKHAM RANCH

Neostapfia colusana

Colusa grass

Element Code: PMPOA4C010

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G3
State: S3.1

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS.
Micro: USUALLY IN LARGE, OR DEEP VERNAL POOL BOTTOMS; ADOBE SOILS. 5-110M.

Occurrence No. 1 **Map Index:** 25007 **EO Index:** 2713

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1986-06-11
Site: 1986-06-11
Record Last Updated: 1995-07-12

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36266° / -120.30273°
UTM: Zone-10 N4138518 E738871
Area: 8.3 acres
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 35 **Qtr:** SW
Meridian: M

Location: WEST OF BURNS CREEK ABOUT 1/2 MILE, 4.5 MILES NORTH OF PLANADA, FLYING M RANCH.

Location Detail: MAPPED IN THE SW 1/4 OF THE SW 1/4 OF SECTION 35.

Ecological: LARGE PLAYA SURROUNDED BY ANNUAL GRASSLAND. ASSOCIATED WITH ORCUTTIA INAEQUALIS, ALLOCARYA STIPITATA, ERYNGIUM VASEYI, BOISDUVALIA, ALOPECURUS, NAVARRETIA, PSILOCARPHUS, SIDA, EREMOCARPUS, LASTHENIA, ETC. SOIL MAPPED AS RAYNOR COBBLY CLAY.

Threat: LIGHT GRAZING IS ONLY DISTURBANCE.

General: THOUSANDS OF PLANTS OBSERVED BY GUNN IN 1980. FEWER THAN 1000 PLANTS OBSERVED IN 1986. SITE IS PART OF A CONSERVATION EASEMENT HELD BY THE NATURE CONSERVANCY.

Owner/Manager: PVT, TNC

Occurrence No. 12 **Map Index:** 13426 **EO Index:** 22275

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown

Dates Last Seen
Element: 1943-05-28
Site: 1986-07-07
Record Last Updated: 1995-06-14

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35438° / -120.44464°
UTM: Zone-10 N4137249 E726326
Radius: 1 mile
Elevation: 195 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 14E
Section: 04 **Qtr:** W
Meridian: M

Location: ABOUT 1 MILE SOUTHWEST OF LAKE YOSEMITE (VIRGINIA LAKE FIELD), SAN JOAQUIN VALLEY.

Location Detail: EXACT SITE UNKNOWN. STONE AND ERZINGER REPORT TWO PROBABLE LOCATIONS; W 1/2 OF SECTION 4 AND W 1/2 OF SE 1/4 OF SECTION 32.

Ecological: DRIED DUCK POND.

Threat: ONE SITE RECEIVES IRRIGATION RUNOFF AND HAS CONVERTED TO FRESHWATER MARSH, SECOND SITE IS UNDER IRRIGATED AGRICULTURE

General: NEOSTAPFIA COLUSANA IS PROBABLY EXTIRPATED FROM ORIGINAL COLLECTION SITE DUE TO HABITAT MODIFICATION.

Owner/Manager: PVT

Occurrence No. 29 **Map Index:** 13629 **EO Index:** 2716

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1986-06-12
Site: 1986-06-12
Record Last Updated: 2008-01-16

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36750° / -120.35366°
UTM: Zone-10 N4138927 E734344
Area: 4.1 acres
Elevation: 290 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 32 **Qtr:** SW
Meridian: M

Location: 1.5 MI NW OF VABM HURRICANE AND 1 MI ENE OF THE LE GRAND CANAL CROSSING OF BLACK RASCAL CREEK, FLYING M RANCH.

Location Detail: MAPPED IN THE NE 1/4 OF THE SW 1/4 OF SECTION 32.

Ecological: LARGE VERNAL POOL MIMA MOUND TOPOGRAPHY ON OLD CLAY SUBSTRATE. DOMINANT ASSOCIATES INCLUDE ALLOCARYA STIPITATA, PSILOCARPHUS BREVISSIMUS, ERYNGIUM VASEYI, AND BOISDUVALIA CLEISTOGAMA. RAYNOR COBBLY CLAY SOIL.

Neostapfia colusana

Colusa grass

Element Code: PMPOA4C010

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G3
State: S3.1

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS.
Micro: USUALLY IN LARGE, OR DEEP VERNAL POOL BOTTOMS; ADOBE SOILS. 5-110M.

Threat: CATTLE GRAZING AND POTENTIAL FLOOD CONTROL PROJECT ON BLACK RASCAL CREEK THREATEN.

General: OVER 100 PLANTS SEEN IN 1981 BY GUNN. ABOUT 2000 PLANTS OBSERVED BY STONE AND CLIFTON IN 1986. CURRENT GRAZING REGIME MAY BE DAMAGING TO THE NEOSTAPFIA.

Owner/Manager: PVT

Occurrence No. 34 Map Index: 13700 EO Index: 3079

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1981-06-09
Site: 1986-07-11
Record Last Updated: 2008-01-14

Quad Summary: Planada (3712033/421D), Haystack Mtn. (3712043/421A)
County Summary: Merced

Lat/Long: 37.37528° / -120.31350°
UTM: Zone-10 N4139891 E737877
Radius: 80 meters
Elevation: 310 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 06S
Range: 15E
Section: 27
Meridian: M
Qtr: SE

Location: 1.1 MILES SOUTHEAST OF HAYSTACK MOUNTAIN, ABOUT 2 MILES WEST OF BURNS CREEK DAM.

Location Detail: TWO VERNAL POOLS MAPPED JUST NORTH OF FENCE (SOUTHERN BOUNDARY OF THE SECTION) AT ABOUT 1200 FEET ESE OF THE WINDMILL.

Ecological: DEEP VERNAL POOLS ON PENTZ GRAVELLY LOAM SOIL. NEOSTAPFIA GROWING IN PURE STAND ALONG THE BOTTOM OF THE POOLS.

Threat: GRAZING.

General: THOUSANDS OF PLANTS IN TWO POPULATIONS OVER A 10-100 SQUARE METER AREA IN 1981. AREA SEARCHED BY STONE AND CLIFTON IN 1986 BUT SITE WAS NOT RELOCATED.

Owner/Manager: PVT

Occurrence No. 37 Map Index: 25008 EO Index: 2462

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1981-06-20
Site: 1986-07-06
Record Last Updated: 1995-06-14

Quad Summary: Planada (3712033/421D), Owens Reservoir (3712032/420C)
County Summary: Merced

Lat/Long: 37.36457° / -120.25253°
UTM: Zone-10 N4138858 E743311
Area: 46.0 acres
Elevation: 350 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 06S
Range: 16E
Section: 31
Meridian: M
Qtr: SE

Location: PLAYA-LIKE LAKE BED 1.5-1.6 MILES SOUTHEAST OF BURNS CREEK DAM SPILLWAY. 7 MILES NORTHEAST OF PLANADA.

Location Detail: WITHIN THE NE 1/4 OF THE SE 1/4 OF SECTION 31 AND THE NW 1/4 OF THE SW 1/4 OF SECTION 32.

Ecological: VERNAL PLAYA STRADDLING CONTACT ZONE OF AMADOR LOAM AND REDDING GRAVELLY LOAM SOILS. ASSOCIATED WITH ORCUTTIA INAQUALIS (99.9%), EREMOCARPUS SETIGERUS, AND ERYNGIUM. TYPICAL VERNAL POOL FLORA AROUND MARGIN.

Threat: OVERGRAZING IS EVIDENT & IS A THREAT.

General: HUNDREDS OF PLANTS SEEN IN 1981 OVER A 5-10 SQUARE METER AREA. SITE VISITED IN 1986 BY STONE AND ERZINGER BUT NO PLANTS WERE OBSERVED.

Owner/Manager: UNKNOWN

Neostapfia colusana

Colusa grass

Element Code: PMPOA4C010

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G3
State: S3.1

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS.
Micro: USUALLY IN LARGE, OR DEEP VERNAL POOL BOTTOMS; ADOBE SOILS. 5-110M.

Occurrence No. 38 Map Index: 13734 EO Index: 2714
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1986-06-11
Site: 1986-06-11
Record Last Updated: 1995-07-12

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.37294° / -120.29686°
UTM: Zone-10 N4139674 E739358
Radius: 80 meters
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 06S
Range: 15E
Section: 35
Meridian: M
Qtr: N

Location: FLYING M RANCH, HEAD OF INTERMITTENT TRIBUTARY WEST OF BURNS CREEK. 1.1 MILES SW OF BURNS CREEK DAM.

Location Detail: SITE IS 0.2 MILE SOUTH OF FENCELINE DIVIDING SECTIONS 26 AND 35 AND ABOUT 0.25 MILE NORTHWEST OF DIRT ROAD. NEAR THE CENTER OF THE N 1/4 OF SECTION 35.

Ecological: VERNAL POOL SURROUNDED BY ANNUAL GRASSLAND. MUCH OF POOL RATHER BARREN. ASSOCIATED WITH ALLOCARYA STIPITATA, ERYNGIUM VASEYI, BOISDUVALIA CLEISTOGAMA, PSILOCARPHUS BREVISSIMUS, AND MONERMA CYLINDRICA. SOIL MAPPED AS RAYNOR CLAY.

Threat: ONLY DISTURBANCE IS LIGHT GRAZING; POPULATION APPEARS STABLE UNDER CURRENT GRAZING REGIME.

General: HUNDREDS OF PLANTS SEEN OVER A 10 SQUARE METER AREA IN 1981. MORE THAN 1000 PLANTS OBSERVED IN 1986. SITE IS PART OF A CONSERVATION EASEMENT HELD BY THE NATURE CONSERVANCY.

Owner/Manager: PVT, TNC

Occurrence No. 42 Map Index: 13706 EO Index: 22258
Occ Rank: None
Origin: Natural/Native occurrence
Presence: Extirpated
Trend: Unknown

Dates Last Seen
Element: 2001-09-06
Site: 2001-09-06
Record Last Updated: 2002-10-10

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.32299° / -120.31073°
UTM: Zone-10 N4134095 E738288
Radius: 1 mile
Elevation: 240 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 15
Meridian: M
Qtr: SE

Location: 2 MILES NNE OF PLANADA.

Location Detail: EXACT SITE UNKNOWN. COLLECTION SITE MAY HAVE BEEN ENE OF PLANADA ALONG HWY 140 ACCORDING TO STONE AND CLIFTON.

Threat: INTENSIVE AGRICULTURE, CATTLE GRAZING IN DRY PASTURE.

General: SEARCHED BY STONE & CLIFTON IN 1986, NO NEOSTAPFIA FOUND IN REMAINING HABITAT. NO PLANTS SEEN IN 2001 BY HOGLE. AREA SOUTH OF HWY CONTAINS NO SUITABLE HABITAT, NORTH OF HWY IS LEVELED, CULTIVATED. REMNANT SITE OF TUCTORIA GREENEI NEARBY.

Owner/Manager: PVT

Occurrence No. 43 Map Index: 13693 EO Index: 2712
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1986-07-06
Site: 1986-07-06
Record Last Updated: 1995-07-12

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34791° / -120.31988°
UTM: Zone-10 N4136838 E737398
Area: 7.3 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 03
Meridian: M
Qtr: SW

Location: 1.0 AIR MILE ESE OF VABM HURRICANE, 3.5 MILES NORTH OF PLANADA, FLYING M RANCH.

Location Detail: ALONG INTERMITTENT TRIBUTARY WEST OF BURNS CREEK. SITE IS MAPPED SOUTH AND EAST OF DIRT ROADS THROUGH SW 1/4 OF SECTION 3.

Neostapfia colusana

Colusa grass

Element Code: PMPOA4C010

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G3
State: S3.1

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS.
Micro: USUALLY IN LARGE, OR DEEP VERNAL POOL BOTTOMS; ADOBE SOILS. 5-110M.

Ecological: VERNAL POOLS ALONG AN INTERMITTENT STREAM IN ANNUAL GRASSLAND, ONE SITE BEHIND EARTHEN LEVEE. ASSOCIATED WITH MACHAEROCARPUS CALIFORNICUS, ELEOCHARIS MACHROSTACHYA, ALLOCARYA STIPITATA, MARSILEA VESTITA, AND ERYNGIUM. KEYES GRAVELLY LOAM.

Threat: LIGHT GRAZING. IN 1977, THE SITE WAS WITHIN A PROPOSED NUCLEAR POWER PLANT STUDY AREA.

General: SITE FIRST REPORTED BY ALLEN IN 1977. 10,000 PLANTS OBSERVED BY CLIFTON, STONE, AND ERZINGER IN 1986. POPULATION APPEARS TO BE LARGE AND STABLE UNDER PRESENT GRAZING REGIME.

Owner/Manager: PVT

Occurrence No. 59 **Map Index:** 08329 **EO Index:** 2757

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-06-XX
Site: 1999-06-XX
Record Last Updated: 2000-07-07

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36548° / -120.39369°
UTM: Zone-10 N4138604 E730805
Area: 5.3 acres
Elevation: 265 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 06S
Range: 14E
Section: 36 **Qtr:** SW
Meridian: M

Location: SMITH RANCH; ABOUT 2.2 MILES ESE OF YOSEMITE LAKE AND 0.8 MILE NORTH OF LE GRAND CANAL, NORTHEAST OF MERCED.

Location Detail: MAPPED IN 2 VERNAL POOLS ALONG INTERMITTENT STREAM WITHIN THE N 1/2 SW 1/4 SECTION 36. COLONIES ARE FOUND ALONG EITHER SIDE OF DIRT ROAD.

Ecological: NORTHERN HARDPAN VERNAL POOLS WITHIN ANNUAL GRASSLAND. MAPPED ON CORNING GRAVELLY LOAM AND REDDING GRAVELLY LOAM SOILS. WITH ERYNGIUM VASEYI, LOLIUM MULTIFLORUM, HORDEUM GENICULATUM, HEMIZONIA FITCHII, ALLOCARYA STIPITATA, ETC.

Threat: AREA IS HEAVILY GRAZED, POTENTIAL THREAT OF DEVELOPMENT FROM PROPOSED UC CAMPUS.

General: 1 PLANT OBSERVED IN 1987 (R. STONE), UNKNOWN NUMBER OF PLANTS SEEN IN 1999. SITE IS WITHIN SPHERE OF INFLUENCE OF THE PROPOSED U.C. MERCED CAMPUS. THE RARE GRASS ORCUTTIA INAEQUALIS IS ALSO FOUND IN THESE POOLS.

Owner/Manager: PVT

Occurrence No. 60 **Map Index:** 31452 **EO Index:** 2715

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2003-02-27

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35081° / -120.36305°
UTM: Zone-10 N4137052 E733564
Area: 12.5 acres
Elevation: 250 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 07S
Range: 15E
Section: 06 **Qtr:** SE
Meridian: M

Location: SMITH RANCH, ABOUT 4.5 MILES NNW OF PLANADA AND 1.6 MILES WSW OF VABM HURRICANE, JUST NORTH OF THE LE GRAND CANAL.

Location Detail: PLAYA IN THE NE 1/4 OF THE SE 1/4 OF SECTION 6. THIS IS THE SAME SITE AS 1987 COLLECTION BY STONE FROM "7 MILES NORTHEAST OF MERCED".

Ecological: LARGE PLAYA SURROUNDED BY AN ANNUAL GRASSLAND. ASSOCIATED WITH ERYNGIUM VASEYI, EREMOCARPUS SETIGERUS, BOISDUVALIA CLEISTOGAMA, LOLIUM MULTIFLORUM, DESCHAMPSIA, TRICHOSTEMA, HEMIZONIA, LACTUCA, ETC. SOILS MAPPED AS RAYNOR COBBLY CLAY.

Threat: HEAVY GRAZING.

General: FEWER THAN 1000 PLANTS OBSERVED IN 1987. UNDER THE CURRENT GRAZING REGIME, THIS POPULATION IS DAMAGED AND APPEARS TO BE DECLINING. 5000+ PLANTS OBSERVED IN 2001. INCLUDES FORMER OCCURRENCE #53.

Owner/Manager: PVT

Neostapfia colusana

Colusa grass

Element Code: PMPOA4C010

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G3
State: S3.1

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS.
Micro: USUALLY IN LARGE, OR DEEP VERNAL POOL BOTTOMS; ADOBE SOILS. 5-110M.

Occurrence No. 66 Map Index: 43184 EO Index: 43184

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-06-XX
Site: 1999-06-XX
Record Last Updated: 2000-08-18

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36741° / -120.37544°
UTM: Zone-10 N4138863 E732416
Area: 1.4 acres
Elevation: 250 ft

Mapping Precision: SPECIFIC
Symbol Type: POLYGON

Township: 06S
Range: 15E
Section: 31 Qtr: SW
Meridian: M

Location: NNW OF PLANADA; ABOUT 0.4 MILES NNW OF BLACK RASCAL CREEK AT LE GRAND CANAL CROSSING; NORTHEAST OF MERCED.
Location Detail: MAPPED WITHIN NW 1/4 SW 1/4 OF SECTION 31.
Ecological: VERNAL POOLS AND STOCK PONDS.
Threat: CATTLE GRAZING; WITHIN SPHERE OF INFLUENCE OF PROPOSED UC MERCED CAMPUS.
General: FOUND IN ONE VERNAL POOL AT THIS SITE IN 1999.
Owner/Manager: PVT

Northern Hardpan Vernal Pool

Element Code: CTT44110CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 4 **Map Index:** 13951 **EO Index:** 1487

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Dates Last Seen
Element: 1980-05-06
Site: 1980-05-06
Record Last Updated: 1998-07-15

Quad Summary: Le Grand (3712022/400B)
County Summary: Madera, Merced

Lat/Long: 37.15744° / -120.20101°
UTM: Zone-10 N4116006 E748555
Radius: 1 mile
Elevation: 275 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 09S
Range: 16E
Section: 11 **Qtr:** SW
Meridian: M

Location: 3 MI NE CHOWCHILLA ON ROAD 19. AREA INCL SECTION 14.
Ecological: DOWNINGIA BELLA, HORDEUM GENICULATUM PRESENT. MAY 1980. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.
Threat: HEAVY CATTLE DISTURBANCE. SURROUNDING LAND PLOWED.
Owner/Manager: UNKNOWN

Occurrence No. 20 **Map Index:** 13847 **EO Index:** 28056

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1980-05-07
Site: 1980-05-07
Record Last Updated: 1998-07-15

Quad Summary: Owens Reservoir (3712032/420C), Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.32743° / -120.24768°
UTM: Zone-10 N4134749 E743861
Radius: 1 mile
Elevation: 315 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 07S
Range: 16E
Section: 17 **Qtr:** NW
Meridian: M

Location: 4 MI NE OF PLANADA ALONG HWY 140 AT CUNNINGHAM RD. AREA INCLUDES 4 SECS. (MILES CK DRAINAGE.)
Location Detail: W/IN ANNUAL GRASSLANDS W/BRODIAEA SPP & CALOCHORTUS LUTEUS.
Ecological: INCLS MIMA MOUNDS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.
Threat: SURROUNDING LAND IS IRRIGATED. HEAVY CATTLE DISTURBANCE.
Owner/Manager: UNKNOWN

Orcuttia inaequalis

San Joaquin Valley orcutt grass — Element Code: PMPOA4G060

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G2
State: S2.1

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS.
Micro: 30-755M.

Occurrence No. 2 **Map Index:** 13760 **EO Index:** 22400

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown

Dates Last Seen
Element: 1937-05-27
Site: 1986-05-28
Record Last Updated: 2008-06-26

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.30993° / -120.28713°
UTM: Zone-10 N4132706 E740421
Radius: 1/5 mile
Elevation: 260 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 24
Meridian: M
Qtr: NW

Location: 2 MI NE OF PLANADA.

Location Detail: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS ABOUT 2 MILES NE OF PLANADA ALONG HWY 140.

General: HOOVER'S COLLECTION IS ASSUMED TO HAVE BEEN ALONG HWY 140; N SIDE OF HWY IS CULTIVATED, MARGINAL HABITAT EXISTS S OF HWY, NO PLANTS SEEN BY STONE & CLIFTON IN 1986.

Owner/Manager: UNKNOWN

Occurrence No. 10 **Map Index:** 13918 **EO Index:** 22398

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown

Dates Last Seen
Element: 1963-07-23
Site: 1987-09-03
Record Last Updated: 2008-06-26

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.20549° / -120.21601°
UTM: Zone-10 N4121299 E747066
Radius: 1/5 mile
Elevation: 261 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 16E
Section: 27
Meridian: M
Qtr: SW

Location: 2.5 MI SE OF LE GRAND ALONG SANTA FE AVE.

Ecological: IN DRY VERNAL POOLS ALONG RAILROAD. ASSOCIATED WITH ELEOCHARIS AND CRYPSIS.

General: ACCORDING TO STONE (1987) AREA NOW CHOKED WITH NONNATIVE SPECIES; PRESENT VEGETATION CONDITIONS SUGGEST THAT THE DURATION OF INUNDATION HAS DECREASED, PERHAPS DUE TO AN INCREASE IN THE DIAMETER OF THE CULVERT UNDER THE RAILROAD GRADE.

Owner/Manager: UNKNOWN

Occurrence No. 28 **Map Index:** 13738 **EO Index:** 2465

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1986-06-11
Site: 1986-06-11
Record Last Updated: 2008-06-26

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36236° / -120.30408°
UTM: Zone-10 N4138482 E738752
Area: 53.0 acres
Elevation: 280 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 15E
Section: 35
Meridian: M
Qtr: SW

Location: FLYING M RANCH; 1.6-2.0 MI NE OF VABM HURRICANE, APPROX. 1.8 MI SW OF BURNS CREEK DAM.

Location Detail: MAPPED AS 3 POLYGONS IN SW 1/4 OF SECTION 35. SITE IS PART OF A CONSERVATION EASEMENT HELD BY THE NATURE CONSERVANCY.

Ecological: IN SEVERAL VERNAL POOLS SURROUNDED BY ANNUAL GRASSLAND. RAYNOR CLAY SOIL. WITH NEOSTAPFIA COLUSANA, ALLOCARYA STIPITATA, ERYNGIUM VASEYI, BOISDUVALIA CLEISTOGAMA, ALOPECURUS SACCATUS, ELEOCHARIS MACROSTACHYA, PSILOCARPHUS BREVISSIMUS, ETC.

Threat: SITE IS GRAZED.

General: W-MOST POLY: <1000 PLANTS IN 1981. 5 E POLYS: APPROX. 1500 PLANTS SEEN IN 1981, >5100 IN 1986. INCLUDES FORMER OCCURRENCE #'S 29, 37, & 40.

Owner/Manager: PVT

Orcuttia inaequalis

San Joaquin Valley orcutt grass — Element Code: PMPOA4G060

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G2
State: S2.1

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS.
Micro: 30-755M.

Occurrence No. 35 Map Index: 25008 EO Index: 2463

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Stable

Dates Last Seen
Element: 1981-XX-XX
Site: 1981-XX-XX
Record Last Updated: 2008-06-26

Quad Summary: Planada (3712033/421D), Owens Reservoir (3712032/420C)
County Summary: Merced

Lat/Long: 37.36457° / -120.25253°
UTM: Zone-10 N4138858 E743311
Area: 46.0 acres
Elevation: 350 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 16E
Section: 31
Meridian: M
Qtr: SE

Location: PLAYA-LIKE LAKE 1.5-1.6 MI SE OF BURNS CREEK DAM SPILLWAY. 1.3 MILES DUE NORTH OF JCT OF BEAR CREEK AND CUNNINGHAM RDS.
Location Detail: AT HEAD OF INTERMITTENT TRIBUTARY NORTH OF BEAR CREEK.
Ecological: ON PLAYA ON CONTACT ZONE BETWEEN AMADOR LOAM AND REDDING GRAVELLY LOAM.
Threat: OVERGRAZING IS A THREAT.
General: PLANTS SEEN IN AN AREA 5-20 SQ METERS.
Owner/Manager: UNKNOWN

Occurrence No. 38 Map Index: 31548 EO Index: 12614

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1981-06-26
Site: 1987-09-05
Record Last Updated: 1995-08-02

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.24712° / -120.22518°
UTM: Zone-10 N4125895 E746117
Area: 8.2 acres
Elevation: 277 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 08S
Range: 16E
Section: 09
Meridian: M
Qtr: SW

Location: NE OF LE GRAND, 1.5 MI W OF WHITEROCK RD. 0.1 MILES SE OF WINDMILL 279'.
Ecological: IN VERNAL POOLS IN VALLEY GRASSLAND ON RAYNOR CLAY. ASSOCIATED WITH EREMOCARPUS AND ERYNGIUM SPP.
Threat: GRAZING IS A POTENTIAL THREAT. IN 1986, CATTLE STAYED ON SITE THROUGH SUMMER.
General: SITE SEARCHED FOR BUT NOT LOCATED IN EITHER 1986 (STONE AND ERZINGER) OR IN 1987 (STONE).
Owner/Manager: PVT

Occurrence No. 46 Map Index: 13816 EO Index: 2464

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1981-06-20
Site: 1981-06-20
Record Last Updated: 1995-08-03

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.36505° / -120.26303°
UTM: Zone-10 N4138884 E742380
Area:
Elevation: 350 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 16E
Section: 31
Meridian: M
Qtr: SW

Location: APPROX 5.0 AIR MI ESE OF HAYSTACK MTN.
Location Detail: NE 1/4 OF SW 1/4 OF SECTION 31.
Ecological: IN VERNAL POOL IN VALLEY GRASSLAND ON RAYNOR CLAY. ASSOCIATED WITH EREMOCARPUS SETIGERUS & ERYNGIUM SPP.
General: FEWER THAN 1000 PLANTS IN 1981. NO MAP GIVEN; MAP DETAIL NEEDED.
Owner/Manager: PVT

Orcuttia inaequalis

San Joaquin Valley orcutt grass — Element Code: PMPOA4G060

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G2
State: S2.1

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS.
Micro: 30-755M.

Occurrence No. 49 Map Index: 08329 EO Index: 2756
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-06-15
Site: 1999-06-15
Record Last Updated: 2008-06-25

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.36548° / -120.39369°
UTM: Zone-10 N4138604 E730805
Area: 5.3 acres
Elevation: 265 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 06S
Range: 14E
Section: 36
Qtr: SW
Meridian: M

Location: SMITH RANCH; ABOUT 2.2 MILES ESE OF YOSEMITE LAKE AND 0.8 MILE NORTH OF LE GRAND CANAL, NORTHEAST OF MERCED.

Location Detail: MAPPED IN 2 VERNAL POOLS ALONG INTERMITTENT STREAM WITHIN THE N 1/2 SW 1/4 SECTION 36. COLONIES ARE FOUND ALONG EITHER SIDE OF DIRT ROAD.

Ecological: NORTHERN HARDPAN VERNAL POOLS WITHIN ANNUAL GRASSLAND. MAPPED ON CORNING GRAVELLY LOAM AND REDDING GRAVELLY LOAM SOILS. WITH ERYNGIUM VASEYI, LOLIUM MULTIFLORUM, HORDEUM GENICULATUM, HEMIZONIA FITCHII, ALLOCARYA STIPITATA, ETC.

Threat: AREA IS HEAVILY GRAZED, THREAT OF DEVELOPMENT FROM PROPOSED UC CAMPUS.

General: 1 PLANT OBSERVED IN 1987 (R.D. STONE, BIOSYSTEMS); UNKNOWN NUMBER OF PLANTS SEEN IN 1999. SITE IS WITHIN SPHERE OF INFLUENCE OF THE PROPOSED UC MERCED CAMPUS. THE RARE GRASS NEOSTAPFIA COLUSANA IS ALSO FOUND IN THESE POOLS.

Owner/Manager: PVT

Occurrence No. 50 Map Index: 31518 EO Index: 2468
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1987-06-30
Site: 1987-06-30
Record Last Updated: 2008-06-25

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34128° / -120.34886°
UTM: Zone-10 N4136030 E734851
Area: 5.6 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 15E
Section: 08
Qtr: NE
Meridian: M

Location: FLYING M RANCH; 3.8 MI NNW OF PLANADA, 1.3 MI SW OF VABM HURRICANE.

Location Detail: O. INAEQUALIS MOST ABUNDANT IN EASTERN END OF POOL.

Ecological: LARGE VERNAL POOL SURROUNDED BY ANNUAL GRASSLAND. RAYNOR CLAY SOIL. WITH ERYNGIUM VASEYI, PSILOCARPHUS BREVISSIMUS, BROMUS MOLLIS, HORDEUM GENICULATUM, LOLIUM MULTIFLORUM, EREMOCARPUS SETIGERUS, BOISDUVALIA CLEISTOGAMA, VULPIA MYUROS, ETC.

Threat: SITE IS HEAVILY GRAZED. MANY NONNATIVE PLANT SPECIES HERE, TOO.

General: FEWER THAN 500 PLANTS IN 1987.

Owner/Manager: PVT

Occurrence No. 51 Map Index: 31547 EO Index: 12615
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1987-09-04
Site: 1987-09-04
Record Last Updated: 2008-06-25

Quad Summary: Le Grand (3712022/400B), Owens Reservoir (3712032/420C)
County Summary: Merced

Lat/Long: 37.24951° / -120.23284°
UTM: Zone-10 N4126141 E745429
Area: 2.6 acres
Elevation: 250 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 08S
Range: 16E
Section: 09
Qtr: SW
Meridian: M

Location: 1.7 MI NE OF LE GRAND AND 0.9 MI NE OF INTERSECTION OF FRESNO AND JORDAN RDS.

Location Detail: O. INAEQUALIS FOUND THROUGHOUT POOL. NW1/4 OF SW1/4 SEC 9.

Ecological: SMALL VERNAL POOL SURROUNDED BY ANNUAL GRASSLAND. RAYNOR CLAY SOIL. WITH EREMOCARPUS SETIGERUS, ERYNGIUM VASEYI, ALLOCARYA STIPITATA, BOISDUVALIA CLEISTOGAMA, HORDEUM GENICULATUM, PHALARIS PARADOXA, POLYPOGON MONSPELIENSIS, AND ALOPECURUS.

Orcuttia inaequalis

San Joaquin Valley orcutt grass — **Element Code:** PMPOA4G060

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G2
State: S2.1

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS.
Micro: 30-755M.

Threat: SITE HEAVILY GRAZED EARLIER IN YEAR.
General: 10,000 PLANTS OBSERVED BY STONE IN 1987.
Owner/Manager: PVT

Occurrence No. 57 **Map Index:** 43173 **EO Index:** 43173
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2008-06-26

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34135° / -120.39790°
UTM: Zone-10 N4135917 E730506
Area: 12.0 acres
Elevation: 200 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 14E
Section: 11 **Qtr:** NE
Meridian: M

Location: SOUTHEAST OF YOSEMITE LAKE, NORTH SIDE OF FAIRFIELD CANAL ABOUT 0.5 MI NNW OF BLACK RASCAL CREEK CROSSING, NE OF MERCED.
Location Detail: ALONG INTERMITTENT DRAINAGE THAT IS BLOCKED BY BERM. MOSTLY WITHIN THE SE 1/4 NE 1/4 SECTION 11. ONE COLONY IN ADJACENT NW 1/4 SEC 12.
Ecological: LARGE VERNAL POOL WITH EPILOBIUM DENSIFLORUM, EPILOBIUM SPP., ELEOCHARIS MACROSTACHYA, PLAGIOBOTHRYS STIPITATA VAR. MICRANTHA, AND LYTHRUM HYSSOPIFOLIA. LEPIDURUS PACKARDI ALSO FOUND IN THIS POOL.
Threat: SITE IS HEAVILY GRAZED. ADJACENT PARCELS CONVERTED TO OAT HAY CULTIVATION, IRRIGATED FARMLAND.
General: ABOUT 10,000 PLANTS OBSERVED IN 1999. UNKNOWN NUMBER OBSERVED IN 2001.
Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 58 **Map Index:** 44069 **EO Index:** 44069
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-08-05
Site: 2000-08-05
Record Last Updated: 2000-10-18

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34145° / -120.25948°
UTM: Zone-10 N4136274 E742770
Area: 3.9 acres
Elevation: 315 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 07S
Range: 16E
Section: 07 **Qtr:** NE
Meridian: M

Location: SOUTH OF BEAR CREEK, ABOUT 0.15 MILE SOUTH OF BEAR CREEK ROAD AND 0.4 MI WEST OF CUNNINGHAM ROAD, NORTHEAST OF PLANADA.
Location Detail: SINGLE COLONY MAPPED WITHIN THE NW 1/4 NE 1/4 SECTION 7.
Ecological: GROWING IN LARGE PLAYA POOL (300' X 400') WITHIN ANNUAL GRASSLAND HABITAT.
Threat: LAND APPEARS SOMEWHAT OVERGRAZED.
General: 5000+ PLANTS OBSERVED IN 2000.
Owner/Manager: PVT

Orcuttia inaequalis

San Joaquin Valley orcutt grass — Element Code: PMPOA4G060

Status
Federal: Threatened
State: Endangered

NDDB Element Ranks
Global: G2
State: S2.1

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS.
Micro: 30-755M.

Occurrence No. 60 **Map Index:** 50337 **EO Index:** 50337

Dates Last Seen
Element: 2001-06-29
Site: 2001-06-29
Record Last Updated: 2003-09-11

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35400° / -120.37410°
UTM: Zone-10 N4137379 E732576
Radius: 80 meters
Elevation: 236 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 06
Meridian: M
Qtr: NW

Location: APPROXIMATELY 1.5 MILES NORTH OF YOSEMITE AVE, JUST WEST OF LE GRAND CANAL.

Location Detail: MAPPED WITHIN THE SW 1/4 OF THE NW 1/4 OF SECTION 6.

Ecological: WELL DEFINED VERNAL POOL. ASSOCIATES INCLUDE PLAGIOBOTHRYS STIPITATUS VAR. MICRANTHUS, PSILOCARPHUS BREVISSIMUS, POLYPOGON MONSPELIENSIS, LOLIUM MULTIFLORUM, ERYNGIUM SPP., AND HORDEUM MARINUM GUSSONEANUM.

Threat: POSSIBLE THREATS INCLUDE HYDROLOGICAL ALTERATIONS AND OVERGRAZING.

General: POSSIBLY THOUSANDS OF PLANTS OBSERVED IN 2001; NOT COUNTED.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 61 **Map Index:** 50338 **EO Index:** 50338

Dates Last Seen
Element: 2001-06-30
Site: 2001-06-30
Record Last Updated: 2003-09-11

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34480° / -120.37826°
UTM: Zone-10 N4136348 E732233
Radius: 80 meters
Elevation: 236 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 12
Meridian: M
Qtr: NE

Location: APPROXIMATELY 0.9 MILE NORTH OF YOSEMITE AVE, ON TERRACE OF RASCAL CREEK, JUST WEST OF MAIN ENTRANCE ROAD ON RANCH.

Location Detail: MAPPED WITHIN THE NE 1/4 OF THE NE 1/4 OF SECTION 12.

Ecological: IN DEEPEST PART OF VERNAL POOL. ASSOCIATES INCLUDE NAVARRETIA LEUCOCEPHALA, PSILOCARPHUS BREVISSIMUS, ERYNGIUM SPP, PLAGIOBOTHRYS STIPITATUS VAR. MICRANTHUS, HORDEUM MARINUM SSP GUSSONEANUM. 60% VEGETATION COVER, 5% COBBLE, 35% BARE SOIL.

Threat: HYDROLOGY MAY BE ALTERED DUE TO PROXIMITY TO DIRT ROAD. DEEP CATTLE HOOF PRINTS WITHOUT ANY VEGETATION OBSERVED.

General: UNKNOWN NUMBER OF PLANTS OBSERVED IN 2001. PLANTS NOT AS VIGOROUS AS OTHER OCCURRENCES ON THE RANCH.

Owner/Manager: PVT-ICHORD RANCH

Occurrence No. 62 **Map Index:** 46829 **EO Index:** 55309

Dates Last Seen
Element: 2000-07-21
Site: 2000-07-21
Record Last Updated: 2004-04-28

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17242° / -120.14040°
UTM: Zone-10 N4117829 E753888
Area:
Elevation: 320 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 05
Meridian: M
Qtr: SW

Location: NE OF BAXTER RD INTERSECTION W/ MARGUERITE RD. N OF MERCED/MADERA CO LINE. APPROX 3.9 MI NE OF BRENDA RESERVOIR DAM.

Location Detail: MAPPED ACCORDING TO T-R-S PROVIDED BY HARTESVELDT: T09S R17E E SE 1/4 OF SW 1/4 OF SECTION 5.

Ecological: IN NORTHERN HARDPAN VERNAL POOL WITH HORDEUM MARINUM GUSSONIANUM, PLAGIOBOTHRYS STIPITATUS, AND PSILOCARPHUS BREVISSIMUS. TUCTORIA GREENEI ALSO PRESENT.

Threat: GRAZING BY CATTLE & HORSES.

General: MORE THAN 30 PLANTS OBSERVED IN 2000. SITE IS A PROPOSED MITIGATION BANK FOR ENDANGERED SPECIES AND WETLANDS.

Owner/Manager: PVT

Orcuttia pilosa

hairy orcutt grass

Element Code: PMPOA4G040

Status
Federal: Endangered
State: Endangered

NDDB Element Ranks
Global: G2
State: S2.1

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS.
Micro: 25-125M.

Occurrence No. 16 Map Index: 31620 EO Index: 3584

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Extirpated
Trend: Unknown

Dates Last Seen
Element: 1938-07-20
Site: 1938-07-20
Record Last Updated: 1995-08-10

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35333° / -120.47179°
UTM: Zone-10 N4137068 E723924
Radius: 1/5 mile
Elevation: 175 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 07S
Range: 14E
Section: 06 Qtr: SE
Meridian: M

Location: NEAR TOWN OF MERCED, CROCKER-HOFFMAN RANCH.

Location Detail: MAPPED BY WAGNER AT BELLVUE RANCH, WHICH SERVED AS HEADQUATERS FOR THE CROCKER-HUFFMAN OPERATIONS (BIOSYSTEMS ANALYSIS, INC. 1988). SE 1/4 OF NE 1/4 OF SECTION 6.

Ecological: SITE DESCRIBED AS "A SMALL IRRIGATION DITCH" WITH ADJACENT "POOR DRAINAGE AREAS."

Threat: MUCH OF AREA CONVERTED TO IRRIGATED PASTURE; CATTLE GRAZING IN DRY PASTURE IS ADDITIONAL THREAT. DEVELOPMENT THREATENS.

General: OCCURRENCE KNOWN ONLY FROM 1938 COLLECTION BY WAGNON. SITE NOT VISITED BY BIOSYSTEMS ANALYSIS, INC. FOR 1988 REPORT. 2006 AERIAL IMAGERY SHOWS HOUSING DEVELOPMENT AND AGRICULTURE IN AREA; SITE PRESUMED EXTIRPATED.

Owner/Manager: PVT

Phacelia ciliata var. opaca

Merced phacelia — Element Code: PDHYD0C0S2

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5T1
State: S1.2

Other Lists
CNPS List: 1B.3

Habitat Associations
General: VALLEY AND FOOTHILL GRASSLAND.
Micro: ADOBE OR CLAY SOILS OF VALLEY FLOORS, OPEN HILLS, OR ALKALINE FLATS. 60-150M.

Occurrence No. 1 Map Index: 13621 EO Index: 18304
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1977-04-23
Site: 1977-04-23
Record Last Updated: 1989-08-11

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35132° / -120.35907°
UTM: Zone-10 N4137118 E733916
Radius: 1/5 mile
Elevation: 265 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 05 Qtr: SW
Meridian: M

Location: APPROX 6.5 MI NE OF MERCED OR 1.5 MI W OF HURRICANE TRIANGULATION POINT.
Ecological: ON CLAY SOIL (PENTZ SERIES) ON ROADSIDE.
General: LESS THAN 10 PLANTS SEEN.
Owner/Manager: PVT

Occurrence No. 2 Map Index: 13575 EO Index: 18307
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1937-04-10
Site: 1937-04-10
Record Last Updated: 1989-08-11

Quad Summary: Planada (3712033/421D), Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.29688° / -120.37879°
UTM: Zone-10 N4131028 E732336
Radius: 1/5 mile
Elevation: 200 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 14E
Section: 25 Qtr: NE
Meridian: M

Location: TUTTLE.
General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1937 COLLECTION BY HOOVER.
Owner/Manager: PVT

Occurrence No. 3 Map Index: 13760 EO Index: 18309
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1929-04-25
Site: 1929-04-25
Record Last Updated: 1989-08-11

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.30993° / -120.28713°
UTM: Zone-10 N4132706 E740421
Radius: 1/5 mile
Elevation: 260 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 24 Qtr: NW
Meridian: M

Location: 2 MI NE OF PLANADA ON YOSEMITE HWY.
Ecological: CLAY HILLS.
Owner/Manager: UNKNOWN

Phacelia ciliata var. opaca

Merced phacelia — Element Code: PDHYD0C0S2

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5T1
State: S1.2

Other Lists
CNPS List: 1B.3

Habitat Associations
General: VALLEY AND FOOTHILL GRASSLAND.
Micro: ADOBE OR CLAY SOILS OF VALLEY FLOORS, OPEN HILLS, OR ALKALINE FLATS. 60-150M.

Occurrence No. 4 **Map Index:** 13519 **EO Index:** 18305
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1929-05-19
Site: 1929-05-19
Record Last Updated: 1989-08-11

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.35409° / -120.40630°
UTM: Zone-10 N4137310 E729723
Radius: 1 mile
Elevation:
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 14E
Section: 02 Qtr: XX
Meridian: M

Location: 5 MILES NORTHEAST OF MERCED.
Ecological: CLAY HILLS.
General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1929 COLLECTION BY HOWELL.
Owner/Manager: PVT

Occurrence No. 5 **Map Index:** 13851 **EO Index:** 18301
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1939-03-20
Site: 1939-03-20
Record Last Updated: 1989-08-11

Quad Summary: Owens Reservoir (3712032/420C), Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.27008° / -120.24320°
UTM: Zone-10 N4128396 E744444
Radius: 1 mile
Elevation:
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 16E
Section: 05 Qtr: N
Meridian: M

Location: 3 MI N OF LE GRAND.
Owner/Manager: PVT

Occurrence No. 6 **Map Index:** 13849 **EO Index:** 18306
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1936-02-28
Site: 1936-02-28
Record Last Updated: 1989-08-11

Quad Summary: Plainsburg (3712023/401A), Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.22966° / -120.24491°
UTM: Zone-10 N4123906 E744423
Radius: 1 mile
Elevation:
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 16E
Section: 17 Qtr: SW
Meridian: M

Location: NEAR LE GRAND.
Location Detail: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS A BEST GUESS.
General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1936 COLLECTION BY HOOVER.
Owner/Manager: PVT

Sagittaria sanfordii

Sanford's arrowhead — Element Code: PMALI040Q0

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G3	CNPS List: 1B.2
State: None	State: S3.2	

Habitat Associations

General: MARSHES AND SWAMPS.

Micro: IN STANDING OR SLOW-MOVING FRESHWATER PONDS, MARSHES, AND DITCHES. 0-610M.

Occurrence No. 9 — Map Index: 24488 — EO Index: 22459

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1948-08-19
Site: 1980-XX-XX
Record Last Updated: 1993-11-24

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34101° / -120.46890°
UTM: Zone-10 N4135708 E724216
Radius: 2/5 mile
Elevation: 175 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 14E
Section: 08 Qtr: W
Meridian: M

Location: APPROX. 2 MILES NORTHEAST OF MERCED ON ROAD TO SNELLING.

Location Detail: COLLECTION LABEL GIVES LOCATION AS "CA. 2 MI. NE OF MERCED ON SNELLING HWY." MAPPED ALONG MAJOR ROAD TO SNELLING, SIX MILE GRADE, IN VICINITY OF COTTONWOOD CREEK.

Ecological: GROWING IN CONCRETE IRRIGATION DISTRIBUTOR.

General: AREA SEARCHED BY C.E. TURNER IN 1980 BUT NO PLANTS WERE FOUND. SITE KNOWN FROM A SINGLE COLLECTION BY H.L MASON AND S.G. SMITH IN 1948 (#8366 UC).

Owner/Manager: UNKNOWN

Spea hammondii

western spadefoot

Element Code: AAABF02020

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3

Other Lists
CDFG Status: SC

Habitat Associations
General: OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.
Micro: VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Occurrence No. 168 **Map Index:** 42081 **EO Index:** 42081

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-11-11
Site: 1999-11-11
Record Last Updated: 1999-12-27

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.19501° / -120.20429°
UTM: Zone-10 N4120167 E748141
Radius: 80 meters
Elevation: 282 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 16E
Section: 34 **Qtr:** NE
Meridian: M

Location: RAILROAD LINE, 0.6 MILES SE OF JUNCTION OF SANTA FE AVE & BUCHANAN HOLLOW ROAD, 3.5 MILES SE OF LE GRAND.
Location Detail: ALONG THE RAILROAD TRACKS (LABELED ON THE MAP AS ATCHISON TOPEKA AND SANTA FE RAILROAD)
Ecological: SURROUNDING LAND USE IS AGRICULTURE AND GRAZING
Threat: RAILROAD
General: ONE ADULT FOUND IN SMALL MAMMAL BURROW ALONG TRACKS
Owner/Manager: PVT-BNSF RAILROAD

Occurrence No. 222 **Map Index:** 47576 **EO Index:** 47576

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-03
Site: 2001-04-03
Record Last Updated: 2007-02-15

Quad Summary: Owens Reservoir (3712032/420C), Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.31052° / -120.25160°
UTM: Zone-10 N4132862 E743568
Radius: 80 meters
Elevation: 285 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 20 **Qtr:** NW
Meridian: M

Location: EAST SIDE OF CUNNINGHAM ROAD, 1.25 MILES SOUTH OF HIGHWAY 140, SOUTHWEST OF OWENS RESERVOIR.
Location Detail: SITE CUNSP5. LOCATION MAPPED IN THE SW 1/4 OF THE NW 1/4 SECTION 20.
Ecological: HABITAT CONSISTS OF A SEASONAL POND IN ANNUAL GRASSLAND, BERMED BY CUNNINGHAM ROAD.
Threat: THREATENED BY OVER-GRAZING.
General: AN UNKNOWN NUMBER OF TADPOLES WERE OBSERVED ON 3 APR 2001. THE CONCENTRATIONS OF SPADEFOOTS IN THE SOUTHEASTERN PORTION OF MERCED COUNTY ARE CONSIDERED "UNIQUE AND IMPORTANT TO THE CONSERVATION OF THE SPECIES AS A WHOLE."
Owner/Manager: PVT-CUNNINGHAM RANCH

Occurrence No. 239 **Map Index:** 49016 **EO Index:** 49016

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-03-21
Site: 2001-03-21
Record Last Updated: 2003-06-19

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.19213° / -120.13301°
UTM: Zone-10 N4120037 E754479
Radius: 80 meters
Elevation: 325 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 17E
Section: 32 **Qtr:** SE
Meridian: M

Location: 0.75 MILE SE OF THE INTERSECTION OF BUCHANAN HOLLOW ROAD AND BAXTER ROAD, 8 MILES NE OF CHOWCHILLA
Ecological: HABITAT CONSISTS OF GRAZED GRASSLAND WITH ABUNDANT VERNAL POOLS SURROUNDED BY FIG ORCHARDS.
Threat: THREATENED BY THE PRESENCE OF HERBICIDES AND PESTICIDES IN THE RUNOFF FROM SURROUNDING ORCHARDS.
General: 1 ADULT COLLECTED (CAS #1531) ON 18 FEB 2001. BY 21 MAR 2001 ALL POOLS CONTAINED SPADEFOOT TADPOLES.
Owner/Manager: PVT

Spea hammondii

western spadefoot — Element Code: AAABF02020

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3

Other Lists
CDFG Status: SC

Habitat Associations
General: OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.
Micro: VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Occurrence No. 240 Map Index: 67892 EO Index: 49017
Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-03-21
Site: 2001-03-21
Record Last Updated: 2007-03-02

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17236° / -120.15960°
UTM: Zone-10 N4117771 E752183
Area: 239.0 acres
Elevation: 322 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 06
Meridian: M
Qtr: XX

Location: MAINLY BETWEEN SANTA FE AVE & BAXTER RD, FROM 0.6 MILES N OF MARGUERITE RD S TO THE CHOWCHILLA RIVER, SE MERCED COUMTY.

Location Detail: 50 POOLS - MAJORITY OF MAPPED AREA LOCATED IN THE SE 1/4 OF SECTION 1, SOUTH PORTION & NE 1/4 OF SECTION 6, NE PORTION OF SECTION 12, AND THE N PORTION OF SECTION 7. 1 LOCATED IN SW 1/4 SECTION 5. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF GRAZED GRASSLANDS WITH ABUNDANT VERNAL POOLS. THE CONCENTRATIONS OF SPADEFOOTS IN THE SOUTHEASTERN PORTION OF MERCED COUNTY ARE CONSIDERED "UNIQUE AND IMPORTANT TO THE CONSERVATION OF THE SPECIES AS A WHOLE."

Threat: THREATENED BY CHANGING AGRICULTURAL PRACTICES (ESPECIALLY TO ORCHARDS).

General: 8 ADULTS COLLECTED (CAS #1532) ON 18 FEB 2001. BY 21 MARCH 2001 ALL POOLS CONTAINED SPADEFOOT TADPOLES. UNKNOWN NUMBER OBSERVED DURING OTHER AMPHIBIAN SURVEYS DURING 2001.

Owner/Manager: PVT-FLYNN RANCH, KNAPP RANCH

Occurrence No. 363 Map Index: 67909 EO Index: 68056
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-03-28

Quad Summary: Le Grand (3712022/400B), Raynor Creek (3712021/400A)
County Summary: Madera, Merced

Lat/Long: 37.16923° / -120.13218°
UTM: Zone-10 N4117497 E754629
Area: 56.0 acres
Elevation: 315 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 08
Meridian: M
Qtr: XX

Location: UP TO 0.25 MI S OF MARGUERITE RD AND 0.4-1.2 MI E OF BAXTER RD, JUST N THE CHOWCHILLA RIVER, 7.5 MI NE OF CHOWCHILLA.

Location Detail: POOL IDS: KNA07.1 & KNA07.3, KNAH01, KNAH02, KNAH03, KNAH15, KNAH16, KNAH17, KNAH18, KNAH19, KNAH20. LOCATION MAPPED IN THE NE 1/4 (SLIGHTLY INTO NW 1/4) SECTION 8 AND NW 1/4 OF SECTION 9. LOCATION MAPPED USING DIGITAL DATA.

Ecological: HABITAT CONSISTS OF A VERNAL POOLS.

General: UNKNOWN NUMBER OBSERVED DURING THE 2001 AMPHIBIAN SURVEYS. THE CONCENTRATIONS OF SPADEFOOTS IN THE SOUTHEASTERN PORTION OF MERCED COUNTY ARE CONSIDERED "UNIQUE AND IMPORTANT TO THE CONSERVATION OF THE SPECIES AS A WHOLE."

Owner/Manager: PVT-KNAPP RANCH

Occurrence No. 369 Map Index: 68271 EO Index: 68426
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-28

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.34476° / -120.36668°
UTM: Zone-10 N4136372 E733262
Radius: 80 meters
Elevation: 247 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 07
Meridian: M
Qtr: NE

Location: ALONG E SIDE OF LE GRAND CANAL, 1.3 MILES S FROM BLACK RASCAL CK, 4 MILES SE THE S END OF YOSEMITE LAKE, NE OF MERCED.

Location Detail: POOL ID: ICHH20. LOCATION MAPPED IN THE NW 1/4 OF THE NE 1/4 SECTION 7. LOCATION MAPPED USING DIGITAL DATA. THIS IS ONE OF THE TWO OCCURRENCE FOUND NORTH OF HIGHWAY 140 DURING THE SURVEYS FOR THE MERCED COUNTY REGIONAL STUDY AREA.

General: UNKNOWN NUMBER OBSERVED DURING THE 2001 AMPHIBIAN SURVEYS. THE CONCENTRATIONS OF SPADEFOOTS IN THE SOUTHEASTERN PORTION OF MERCED COUNTY ARE CONSIDERED "UNIQUE AND IMPORTANT TO THE CONSERVATION OF THE SPECIES AS A WHOLE."

Owner/Manager: PVT-ICHORD RANCH

Spea hammondii

western spadefoot — Element Code: AAABF02020

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3

Other Lists
CDFG Status: SC

Habitat Associations
General: OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.
Micro: VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Occurrence No. 376 **Map Index:** 68300 **EO Index:** 68455

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-28

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.18510° / -120.18971°
UTM: Zone-10 N4119106 E749467
Area: 13.0 acres
Elevation: 283 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 16E
Section: 02
Meridian: M
Qtr: NE

Location: JUST EAST OF SANTA FE AVE, 1.3 MILES NORTH OF MARGUERITE ROAD, NORTH OF THE CHOWCHILLA RIVER, SOUTHEASTERN MERCED COUNTY

Location Detail: POOL IDS: FLYH55 & FLYH56. LOCATION MAPPED IN THE NW 1/4 OF THE NE 1/4 OF SECTION 2. LOCATION MAPPED USING DIGITAL DATA.

General: UNKNOWN NUMBER OBSERVED DURING THE 2001 AMPHIBIAN SURVEYS. THE CONCENTRATIONS OF SPADEFOOTS IN THE SOUTHEASTERN PORTION OF MERCED COUNTY ARE CONSIDERED "UNIQUE AND IMPORTANT TO THE CONSERVATION OF THE SPECIES AS A WHOLE."

Owner/Manager: PVT-FLYNN RANCH

Occurrence No. 377 **Map Index:** 68301 **EO Index:** 68456

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-02-28

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17931° / -120.17996°
UTM: Zone-10 N4118489 E750353
Area: 45.0 acres
Elevation: 290 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 16E
Section: 01
Meridian: M
Qtr: XX

Location: EAST OF SANTA FE AVE, 0.25-0.9 MI NORTH OF MARGUERITE ROAD, N OF THE CHOWCHILLA RIVER, SOUTHEASTERN MERCED COUNTY

Location Detail: POOL IDS: FLYH40, FLYH41, FLYH42, FLYH45, FLYH46, FLYH47, FLYH48, FLYH50, FLYH51, FLYH52, FLYH53. LOCATION MAPPED IN THE WEST 1/2 OF SECTION 1 AND THE NORTHEAST 1/4 OF SECTION 2. LOCATION MAPPED USING DIGITAL DATA.

General: UNKNOWN NUMBER OBSERVED DURING THE 2001 AMPHIBIAN SURVEYS. THE CONCENTRATIONS OF SPADEFOOTS IN THE SOUTHEASTERN PORTION OF MERCED COUNTY ARE CONSIDERED "UNIQUE AND IMPORTANT TO THE CONSERVATION OF THE SPECIES AS A WHOLE."

Owner/Manager: PVT-FLYNN RANCH

Occurrence No. 378 **Map Index:** 52354 **EO Index:** 68457

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-03-02

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.18424° / -120.17089°
UTM: Zone-10 N4119060 E751141
Radius: 80 meters
Elevation: 290 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 16E
Section: 01
Meridian: M
Qtr: NE

Location: ABOUT 1.1 MILES EAST OF SANTA FE AVENUE AND ABOUT 0.9 MILE NORTH OF MARGUERITE ROAD, EASTERN MERCED COUNTY.

Location Detail: POOL ID: FLYH54. MAPPED WITHIN THE NW 1/4 OF THE NE 1/4 OF SECTION 1. LOCATION MAPPED USING DIGITAL DATA.

General: UNKNOWN NUMBER OBSERVED DURING THE 2001 AMPHIBIAN SURVEYS. THE CONCENTRATIONS OF SPADEFOOTS IN THE SOUTHEASTERN PORTION OF MERCED COUNTY ARE CONSIDERED "UNIQUE AND IMPORTANT TO THE CONSERVATION OF THE SPECIES AS A WHOLE."

Owner/Manager: PVT-FLYNN RANCH

Spea hammondii

western spadefoot

Element Code: AAABF02020

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G3	CDFG Status: SC
State: None	State: S3	

Habitat Associations

General: OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro: VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Occurrence No. 379 **Map Index:** 68309 **EO Index:** 68464

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-03-02

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.18289° / -120.15774°
UTM: Zone-10 N4118946 E752313
Area: 17.0 acres
Elevation: 300 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 06 **Qtr:** N
Meridian: M

Location: 0.4 TO 0.8 MILES WEST OF BAXTER RD AND 0.8 MILES NORTH OF MARGUERITE RD, N OF THE CHOWCHILLA RIVER, SE MERCED COUNTY.

Location Detail: POOL IDS: FLYH03, FLYH04 & FLYH05. LOCATION MAPPED PRIMARILY IN THE NW PORTION OF SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

General: UNKNOWN NUMBER OBSERVED DURING THE 2001 AMPHIBIAN SURVEYS. THE CONCENTRATIONS OF SPADEFOOTS IN THE SOUTHEASTERN PORTION OF MERCED COUNTY ARE CONSIDERED "UNIQUE AND IMPORTANT TO THE CONSERVATION OF THE SPECIES AS A WHOLE."

Owner/Manager: PVT-FLYNN RANCH

Occurrence No. 380 **Map Index:** 68310 **EO Index:** 68465

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-03-02

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.18490° / -120.15142°
UTM: Zone-10 N4119186 E752868
Area: 7.0 acres
Elevation: 310 ft
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 06 **Qtr:** NE
Meridian: M

Location: 0.2 MILES WEST OF BAXTER RD AND 1 MILE NORTH OF MARGUERITE RD, N OF THE CHOWCHILLA RIVER, SE MERCED COUNTY.

Location Detail: POOL IDS: FLYH01 & FLYH02. LOCATION MAPPED IN THE NE 1/4 OF THE NE 1/4 OF SECTION 6. LOCATION MAPPED USING DIGITAL DATA.

General: UNKNOWN NUMBER OBSERVED DURING THE 2001 AMPHIBIAN SURVEYS. THE CONCENTRATIONS OF SPADEFOOTS IN THE SOUTHEASTERN PORTION OF MERCED COUNTY ARE CONSIDERED "UNIQUE AND IMPORTANT TO THE CONSERVATION OF THE SPECIES AS A WHOLE."

Owner/Manager: PVT-FLYNN RANCH

Occurrence No. 388 **Map Index:** 68746 **EO Index:** 69227

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-XX-XX
Site: 2001-XX-XX
Record Last Updated: 2007-03-28

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced, Madera

Lat/Long: 37.16621° / -120.15627°
UTM: Zone-10 N4117098 E752500
Radius: 80 meters
Elevation: 295 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 17E
Section: 07 **Qtr:** N
Meridian: M

Location: 1 MILE EAST OF SANTA FE AVE, 0.3 MILE SOUTH OF MARGUERITE RD, NORTH OF THE CHOWCHILLA RIVER, SOUTHEASTERN MERCED COUNTY.

Location Detail: POOL ID KNAH21. LOCATION MAPPED IN THE NORTH CENTRAL PORTION OF SECTION 7. LOCATION MAPPED USING DIGITAL DATA.

General: UNKNOWN NUMBER OBSERVED DURING THE 2001 AMPHIBIAN SURVEYS. THE CONCENTRATIONS OF SPADEFOOTS IN THE SOUTHEASTERN PORTION OF MERCED COUNTY ARE CONSIDERED "UNIQUE AND IMPORTANT TO THE CONSERVATION OF THE SPECIES AS A WHOLE."

Owner/Manager: PVT-KNAPP RANCH

Thamnophis gigas

giant garter snake

Element Code: ARADB36150

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	**Global:** G2G3	**CDFG Status:**
State: Threatened	**State:** S2S3	

Habitat Associations

General: PREFERS FRESHWATER MARSH AND LOW GRADIENT STREAMS. HAS ADAPTED TO DRAINAGE CANALS & IRRIGATION DITCHES.

Micro: THIS IS THE MOST AQUATIC OF THE GARTER SNAKES IN CALIFORNIA.

Occurrence No. 144 **Map Index:** 32440 **EO Index:** 1707

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1908-06-17
Site: 1908-06-17
Record Last Updated: 2000-07-20

Quad Summary: Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.31134° / -120.48191°
UTM: Zone-10 N4132384 E723152
Radius: 1 mile
Elevation: 170 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 07S
Range: 14E
Section: 19 **Qtr:** XX
Meridian: M

Location: MERCED.
Location Detail: EXACT COLLECTION SITE UNKNOWN.
General: PARATYPE FEMALE (OF THAMNOPHIS ORDINOIDES GIGAS) COLLECTED ON 17 JUN 1908.
Owner/Manager: UNKNOWN

Tuctoria greenei

Greene's tuctoria — Element Code: PMPOA6N010

Status
Federal: Endangered
State: Rare

NDDB Element Ranks
Global: G2
State: S2.2

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.
Micro: DRY BOTTOMS OF VERNAL POOLS IN OPEN GRASSLANDS. 30-1065M.

Occurrence No. 10 Map Index: 13832 EO Index: 22355

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown

Dates Last Seen
Element: 1975-06-01
Site: 1987-09-04
Record Last Updated: 1995-07-19

Quad Summary: Planada (3712033/421D), Owens Reservoir (3712032/420C)
County Summary: Merced

Lat/Long: 37.28715° / -120.25184°
UTM: Zone-10 N4130268 E743623
Radius: 2/5 mile
Elevation: 250 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 31 Qtr: NE
Meridian: M

Location: 3.0-3.6 MILES NORTH OF LE GRAND.

Location Detail: CRAMPTON MAPPED SITE ON WEST SIDE OF CUNNINGHAM ROAD (BIOSYSTEMS ANALYSIS, 1988). POOL NEAR INTERSECTION OF CHILDS AVE AND CUNNINGHAM RD SEARCHED IN 1981; NO PLANTS FOUND.

Ecological: LARGE BUT SOMEWHAT SHALLOW VERNAL POOL WITH DEEPLY CRACKED LEAD SOIL. ASSOCIATED SPECIES INCLUDE ELEOCHARIS, POGOGYNE AND ALLOCARYA.

Threat: MOST OF THE SITE WAS AN IRRIGATED PASTURE IN 1981.

General: SEEN 3.6 MILES NORTH OF LE GRAND BY CRAMPTON (#5042) IN 1958, SEEN 3 MILES NORTH OF LE GRAND BY REEDER (#6660) IN 1975. NO PLANTS OBSERVED IN 1981, 1986, 1987. INCLUDES FORMER OCCURRENCE #33.

Owner/Manager: PVT

Occurrence No. 13 Map Index: 33058 EO Index: 22352

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Decreasing

Dates Last Seen
Element: 1980-XX-XX
Site: 1986-07-06
Record Last Updated: 2008-06-25

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17238° / -120.17744°
UTM: Zone-10 N4117727 E750599
Radius: 80 meters
Elevation: 290 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 09S
Range: 16E
Section: 01 Qtr: SW
Meridian: M

Location: 5 MILES SOUTHEAST OF LE GRAND ALONG SANTA FE AVENUE.

Location Detail: MAPPED BY CRAMPTON ON THE EAST SIDE OF THE ROAD 0.1 MILE NORTH OF MARGUERITE ROAD (BIOSYSTEMS ANALYSIS, 1988).

Ecological: DRY VERNAL POOL WITH DEEPLY CRACKED BLACK ADOBE SOIL. ASSOCIATED SPECIES INCLUDE JUNCUS BUXIFORMIS, MIMULUS LATIDENS, VERONICA PEREGRINA.

Threat: CATTLE GRAZING, RAILROAD RIGHT-OF-WAY MAINTENANCE (& ASSOC HERBICIDE USE), HYDROLOGIC MODIFICATIONS, AG CONVERSION.

General: LAST SEEN IN 1980 BY GRIGGS; 1986 STONE SURVEYS SHOWED NO PLANTS. POOL BED APPEARED TO BE RELATIVELY UNDISTURBED BUT THE HYDROLOGY HAS BEEN ALTERED BY THE ELEVATED RAILROAD GRADE. NEEDS FIELDWORK.

Owner/Manager: PVT

Occurrence No. 23 Map Index: 13838 EO Index: 2667

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Dates Last Seen
Element: 1981-06-03
Site: 1986-07-05
Record Last Updated: 2008-06-20

Quad Summary: Owens Reservoir (3712032/420C), Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.26688° / -120.24990°
UTM: Zone-10 N4128024 E743860
Radius: 1/5 mile
Elevation: 250 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 16E
Section: 05 Qtr: NW
Meridian: M

Location: 4 MILES ESE OF PLANADA EAST OF CUNNINGHAM ROAD, 1.4 MILES SOUTH OF CUNNINGHAM ROAD/CHILDS ROAD JUNCTION.

Ecological: VERNAL POOL SURROUNDED BY ANNUAL GRASSLAND. NOT A TYPICAL TUCTORIA POOL, BUT A LOT OF OTHER VERNAL POOL SPECIES PRESENT.

Threat: INTENSIVE CATTLE GRAZING, CONVERSION TO IRRIGATED AGRICULTURE.

General: TUCTORIA DISTRIBUTION IS VERY SPARSE AT THIS SITE, 11-50 PLANTS SEEN OVER A 1-5 SQUARE METER AREA IN 1981. NO PLANTS FOUND BY STONE & ERZINGER IN 1986 FOLLOWING A YEAR OF FAVORABLE RAINFALL. NEEDS FIELDWORK.

Tuctoria greenei

Greene's tuctoria

Element Code: PMPOA6N010

Status
Federal: Endangered
State: Rare

NDDB Element Ranks
Global: G2
State: S2.2

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.
Micro: DRY BOTTOMS OF VERNAL POOLS IN OPEN GRASSLANDS. 30-1065M.

Owner/Manager: PVT

Occurrence No. 28 **Map Index:** 13988 **EO Index:** 22341

Occ Rank: Poor
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Dates Last Seen
Element: 1981-06-XX
Site: 1986-06-06
Record Last Updated: 2008-06-20

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17962° / -120.18098°
UTM: Zone-10 N4118521 E750261
Radius: 1/5 mile
Elevation: 290 ft

Mapping Precision: NON-SPECIFIC
Symbol Type: POINT

Township: 09S
Range: 16E
Section: 01 **Qtr:** NW
Meridian: M

Location: 5.8 MILES NORTHWEST OF SHARON ON SANTA FE BLVD. JUST NORTH OF CHOWCHILLA RIVER AND THE MERCED COUNTY LINE.

Location Detail: WATERSHED DESTROYED ACCORDING TO TOM GRIGGS, 1983. HOWEVER, HABITAT APPEARS EXTANT BASED ON 2006 AERIAL IMAGERY.

Ecological: VERNAL POOLS IN PASTURE.

Threat: PASTURELAND IS DISKED BUT OWNER DISKS AROUND VERNAL POOLS; INTENSIVE CATTLE GRAZING AND CONVERSION TO INTENSIVE AG.

General: POPULATION OF 1001-10000 PLANTS OVER A 100 SQUARE METER TO 1 HECTARE AREA IN 1981. AREA SURVEYED IN 1986 BUT NO PLANTS OBSERVED (BIOSYSTEMS ANALYSIS, 1988). NEEDS FIELDWORK.

Owner/Manager: PVT

Occurrence No. 29 **Map Index:** 31621 **EO Index:** 2413

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Dates Last Seen
Element: 1987-06-29
Site: 1987-06-29
Record Last Updated: 1995-07-19

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.30968° / -120.28775°
UTM: Zone-10 N4132677 E740367
Radius: 80 meters
Elevation: 260 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 07S
Range: 15E
Section: 24 **Qtr:** NW
Meridian: M

Location: 2 MILES NORTHEAST OF PLANADA ALONG THE SOUTH SIDE OF HIGHWAY 140.

Location Detail: JUST EAST OF SMALL, ISOLATED EUCALYPTUS GROVE. MAPPED WITHIN THE SW 1/4 OF THE NW 1/4 OF SECTION 24.

Ecological: EXTENSIVE BUT SHALLOW VERNAL POOL SURROUNDED BY ANNUAL GRASSLAND. ASSOCIATED SPECIES INCLUDE POGOGYNE, ERYNGIUM, LOLIUM, PHALARIS, POLYPOGON, HORDEUM, BOISDUVALIA, DOWNINGIA, EREMOCARPUS, CENTAURIUM, NAVARRETIA, ALOPECURUS, LYTHRUM, ETC.

Threat: CATTLE GRAZING, DISKING AND AGRICULTURAL EXPANSION ARE THREATS.

General: POPULATION OF 101-1000 PLANTS OVER A 10-100 SQUARE METER AREA IN 1981. POOL SMALLER IN 1981 DUE TO DISKING. LESS THAN 500 PLANTS OBSERVED IN 1986. ONLY 5 PLANTS IN 1987 AFTER WINTER OF LOW RAINFALL. INCLUDES FORMER OCCURRENCES 12 & 26.

Owner/Manager: PVT

Tuctoria greenei

Greene's tuctoria — Element Code: PMPOA6N010

Status
Federal: Endangered
State: Rare

NDDB Element Ranks
Global: G2
State: S2.2

Other Lists
CNPS List: 1B.1

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.
Micro: DRY BOTTOMS OF VERNAL POOLS IN OPEN GRASSLANDS. 30-1065M.

Occurrence No. 32 Map Index: 13824 EO Index: 22333
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1975-06-01
Site: 1987-06-29
Record Last Updated: 2008-06-20

Quad Summary: Owens Reservoir (3712032/420C), Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.33202° / -120.25694°
UTM: Zone-10 N4135235 E743025
Radius: 2/5 mile
Elevation: 280 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 16E
Section: 07 Qtr: SE
Meridian: M

Location: 4.0 MILES ENE OF PLANADA ALONG HIGHWAY 140.

Location Detail: A SMALL VERNAL POOL ABOUT 0.5 MILE NORTH OF HIGHWAY 140. EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS ABOUT 4 MI ENE OF PLANADA AND 0.5 MI N OF HWY 140.

Ecological: VERNAL POOL.

Threat: CATTLE GRAZING IN WINTER PASTURE, CONVERSION TO IRRIGATED AGRICULTURE.

General: UNK # OF PLANTS SEEN IN 1975 BY REEDER & REEDER. FOLLOWING A WINTER OF LOW RAINFALL, NO PLANTS WERE FOUND IN THIS AREA BY STONE IN 1987. SUITABLE HABITAT STILL PRESENT. NEEDS FIELDWORK.

Owner/Manager: PVT

Occurrence No. 44 Map Index: 31622 EO Index: 2396
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1987-07-02
Site: 1987-07-02
Record Last Updated: 1995-08-04

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.24874° / -120.22917°
UTM: Zone-10 N4126065 E745757
Radius: 80 meters
Elevation: 275 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 16E
Section: 09 Qtr: SW
Meridian: M

Location: 1.7 MILES NORTHEAST OF LE GRAND, 0.8 MILE EAST OF FRESNO ROAD.

Location Detail: MAPPED WITHIN THE NE 1/4 OF THE SW 1/4 OF SECTION 9.

Ecological: VERNAL POOL SURROUNDED BY ANNUAL GRASSLAND. ASSOCIATED WITH ERYNGIUM VASEYI, BOISDUVALIA CLEISTOGAMA, EREMOCARPUS SETIGERUS, NAVARRETIA LEUCOCEPHALA, ALLOCARYA STIPITATA, LASTHENIA FREMONTIA, ALOPECURUS SACCATUS, POLYPOGON, AND HORDUEM.

Threat: CATTLE GRAZING IN WINTER PASTURE.

General: FOLLOWING A WINTER OF LOW RAINFALL, ONLY 1 PLANT WAS OBSERVED IN 1987. HABITAT APPEARED MARGINAL FOR TUCTORIA AND THE POPULATION HAS LOW POTENTIAL FOR LONG-TERM VIABILITY.

Owner/Manager: PVT

Occurrence No. 46 Map Index: 46829 EO Index: 46829
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-07-21
Site: 2000-07-21
Record Last Updated: 2001-12-14

Quad Summary: Le Grand (3712022/400B)
County Summary: Merced

Lat/Long: 37.17242° / -120.14040°
UTM: Zone-10 N4117829 E753888
Area:
Elevation: 320 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON
Township: 09S
Range: 17E
Section: 05 Qtr: SW
Meridian: M

Location: NE OF BAXTER RD INTERSECTION W/ MARGUERITE RD. N OF MERCED/MADERA CO LINE. APPROX 3.9 MI NE OF BRENDA RESERVOIR DAM.

Location Detail: MAPPED IN THE SE 1/4 OF THE SW 1/4 OF SECTION 5.

Ecological: ASSOCIATED WITH HORDEUM MARINUM GUSSONIANUM, PLAGIOBOTHRYS STIPITATUS, PSILOCARPHUS BREVISSIMUS AND RARE ORCUTTIA INAEQUALIS (PREVIOUSLY IDENTIFIED AS O. PILOSA).

Tuctoria greenei

Greene's tuctoria

Element Code: PMPOA6N010

Status	NDDB Element Ranks	Other Lists
Federal: Endangered	**Global:** G2	**CNPS List:** 1B.1
State: Rare	**State:** S2.2	

Habitat Associations

General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND.

Micro: DRY BOTTOMS OF VERNAL POOLS IN OPEN GRASSLANDS. 30-1065M.

Threat: CATTLE & HORSE GRAZING ON SITE.

General: 30+ INDIVIDUALS OBSERVED IN 2000. SITE IS A PROPOSED MITIGATION BANK FOR ENDANGERED SPECIES AND WETLANDS.

Owner/Manager: PVT

Vulpes macrotis mutica

San Joaquin kit fox — Element Code: AMAJA03041

Status
Federal: Endangered
State: Threatened

NDDB Element Ranks
Global: G4T2T3
State: S2S3

Other Lists
CDFG Status:

Habitat Associations
General: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.
Micro: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Occurrence No. 24 **Map Index:** 45340 **EO Index:** 45340
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-04-18
Site: 2001-04-18
Record Last Updated: 2001-05-14

Quad Summary: Le Grand (3712022/400B), Plainsburg (3712023/401A)
County Summary: Merced

Lat/Long: 37.24095° / -120.25326°
UTM: Zone-10 N4125138 E743646
Radius: 1/5 mile
Elevation: 255 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 16E
Section: 18 **Qtr:** NE
Meridian: M

Location: CUNNINGHAM ROAD, 0.5 MILE NORTH OF AT&SF RR CROSSING, NORTH OF LE GRAND
Location Detail: ANNUAL GRASSLAND IS CONTIGUOUS, WITH INTERMITTENT RURAL RESIDENTIAL NORTH TO AND BEYOND STATE ROUTE 140; CONTIGUOUS ANNUAL GRASSLAND BEGINS TO THE WEST, APPROXIMATELY 1.5 MILES NORTH OF SITE.
Ecological: HABITAT CONSISTS OF ANNUAL GRASSLAND, WITH A VERNAL POOL COMPLEX TO THE EAST AND AGRICULTURE (ORCHARDS) TO THE WEST, AND SOME RURAL RESIDENTIAL.
Threat: THREATS INCLUDE AGRICULTURAL PRACTICES & CONTACT WITH RESIDENTIAL DOGS & CATS.
General: 1 ADULT OBSERVED ON 18 APR 2001.
Owner/Manager: PVT

Occurrence No. 25 **Map Index:** 45376 **EO Index:** 45376
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-05-03
Site: 2001-05-03
Record Last Updated: 2001-05-17

Quad Summary: Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.25294° / -120.33970°
UTM: Zone-10 N4126249 E735939
Radius: 1/5 mile
Elevation: 210 ft
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Township: 08S
Range: 15E
Section: 09 **Qtr:** NW
Meridian: M

Location: MARIPOSA ROAD, 0.25 MILE EAST OF THE WHEALAN ROAD INTERSECTION, 3 MILES SOUTH OF PLANADA
Ecological: HABITAT CONSISTS OF AN ALMOND ORCHARD BORDERED BY AN ALFALFA FIELD.
Threat: THREATENED BY AGRICULTURAL PRACTICES.
General: 2 ADULTS OBSERVED ON 3 MAY 2001; THEY APPEARED TO BE FORAGING IN FURROWS OF AN ALMOND ORCHARD.
Owner/Manager: PVT

Occurrence No. 26 **Map Index:** 46011 **EO Index:** 46011
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-05-01
Site: 1999-05-01
Record Last Updated: 2001-10-02

Quad Summary: Merced (3712034/421C), Planada (3712033/421D)
County Summary: Merced

Lat/Long: 37.35341° / -120.37657°
UTM: Zone-10 N4137307 E732359
Radius: 80 meters
Elevation: 223 ft
Mapping Precision: SPECIFIC
Symbol Type: POINT
Township: 07S
Range: 15E
Section: 06 **Qtr:** SW
Meridian: M

Location: 4.2 MILES NE OF THE NE EDGE OF MERCED; RASCAL CREEK DRAINAGE.
Location Detail: 1.45 MILES ALMOST DIRECLTY NORTH OF THE INTERSECTION OF YOSEMITE AVE AND ARBOLEDA DRIVE.
Ecological: GRAZED GRASSLANDS WITH VERNAL POOLS. CALIFORNIA TIGER SALAMANDERS LOCATED IN GENERAL AREA. FEW GROUND SQUIRRELS PRESENT.
Threat: PROPOSED HIGHWAY CORRIDOR TO THE UNIVERSITY OF CALIFORNIA MERCED CAMPUS.
General: 1 ADULT OBSERVED FORAGING.
Owner/Manager: PVT

Vulpes macrotis mutica

San Joaquin kit fox

Element Code: AMAJA03041

Status	NDDB Element Ranks	Other Lists
Federal: Endangered	**Global:** G4T2T3	**CDFG Status:**
State: Threatened	**State:** S2S3	

Habitat Associations

General: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Occurrence No. 30 **Map Index:** 46027 **EO Index:** 46027

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-08-02
Site: 2001-08-02
Record Last Updated: 2001-10-03

Quad Summary: Planada (3712033/421D), Merced (3712034/421C)
County Summary: Merced

Lat/Long: 37.34680° / -120.37651°
UTM: Zone-10 N4136574 E732385
Radius: 80 meters
Elevation: 225 ft

Mapping Precision: SPECIFIC
Symbol Type: POINT

Township: 07S
Range: 15E
Section: 06 **Qtr:** SW
Meridian: M

Location: APPROXIMATELY 4 MILES NE OF THE NE EDGE OF MERCED.

Location Detail: 1 MILE (ALONG MOSTLY UNIMPROVED ROAD) NORTH OF THE INTERSECTION OF YOSEMITE AVE AND ARBOLEDA ROAD. APPROXIMATELY 100 FT EAST OF ROAD.

Ecological: HABITAT CONSISTS OF GRAZED NATIVE AND NON-NATIVE GRASSES AND ANNUALS. NETWORK OF CANALS AND DRY STREAMS RUN THROUGH THE LANDSCAPE. OTHER SPECIES OBSERVED IN THE AREA: BURROWING OWL, AMERICAN BADGER.

Threat: COYOTES

General: 1 ADULT OBSERVED.

Owner/Manager: PVT

APPENDIX C

ALIGNMENT PHOTOGRAPHS

FIGURE 3-1
Aerial of LeGrand Alignment

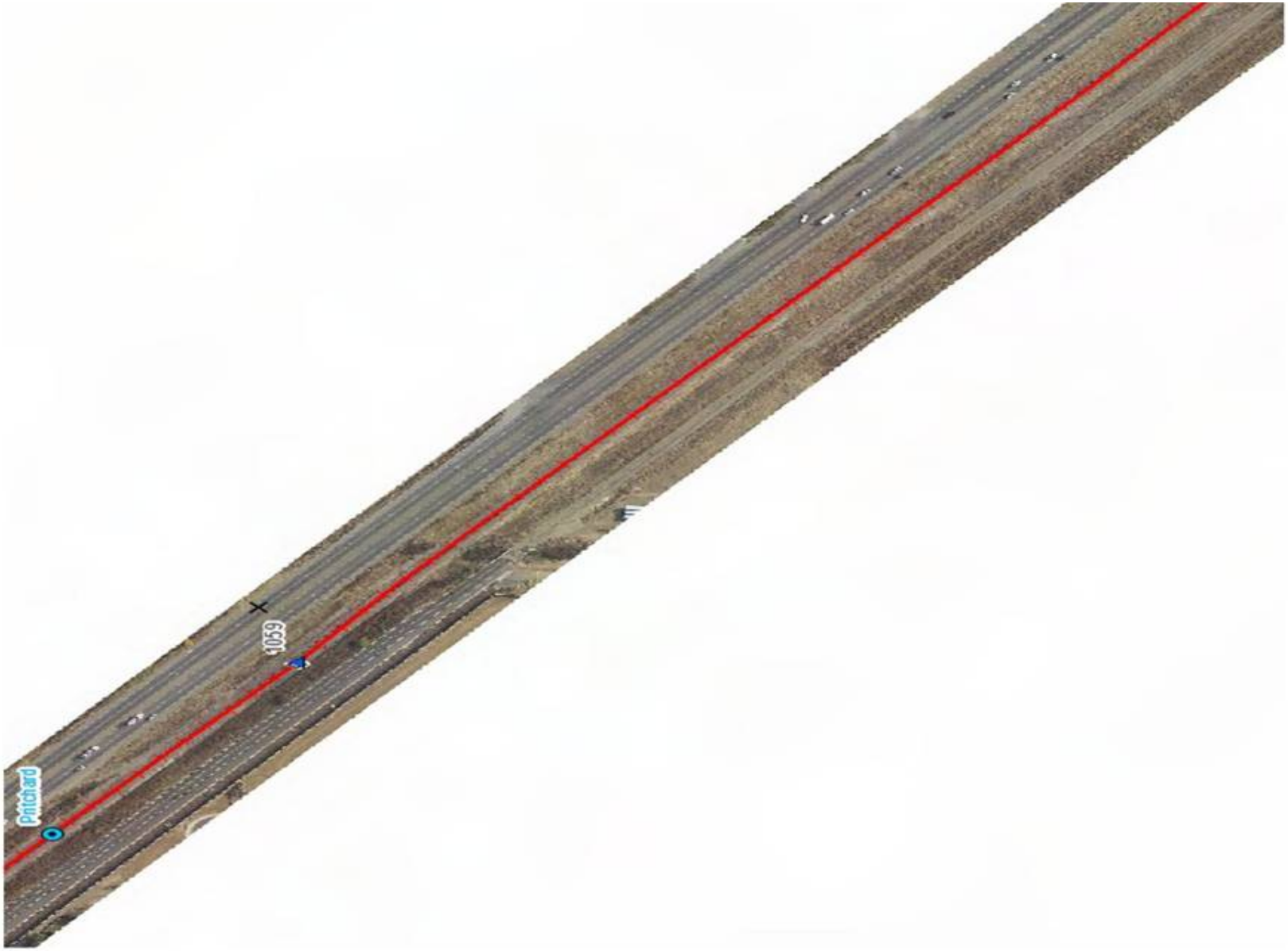


FIGURE 3-2
Aerial of LeGrand Alignment

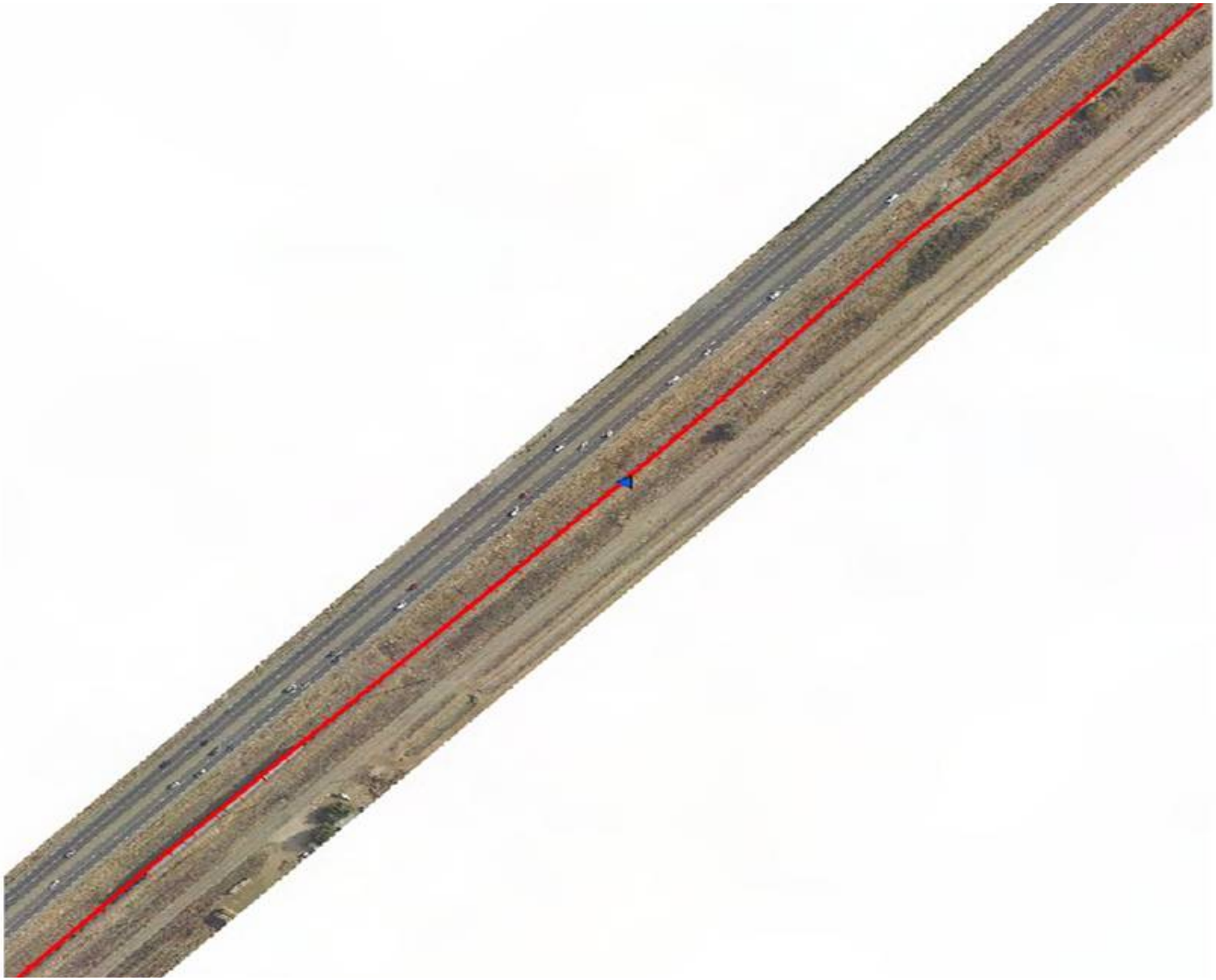


FIGURE 3-3
Aerial of LeGrand Alignment

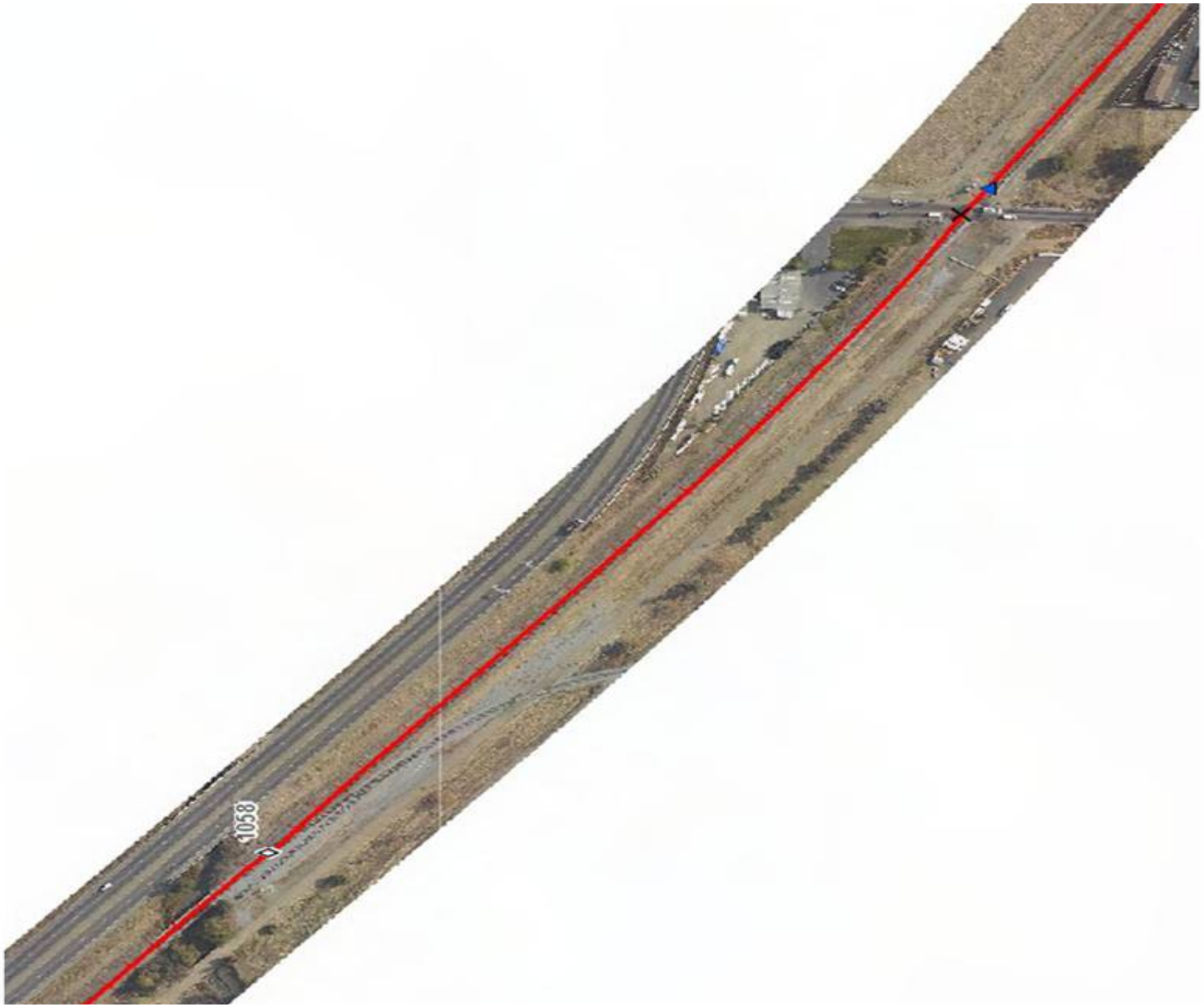


FIGURE 3-4
Aerial of LeGrand Alignment

FIGURE 3-5
Aerial of LeGrand Alignment

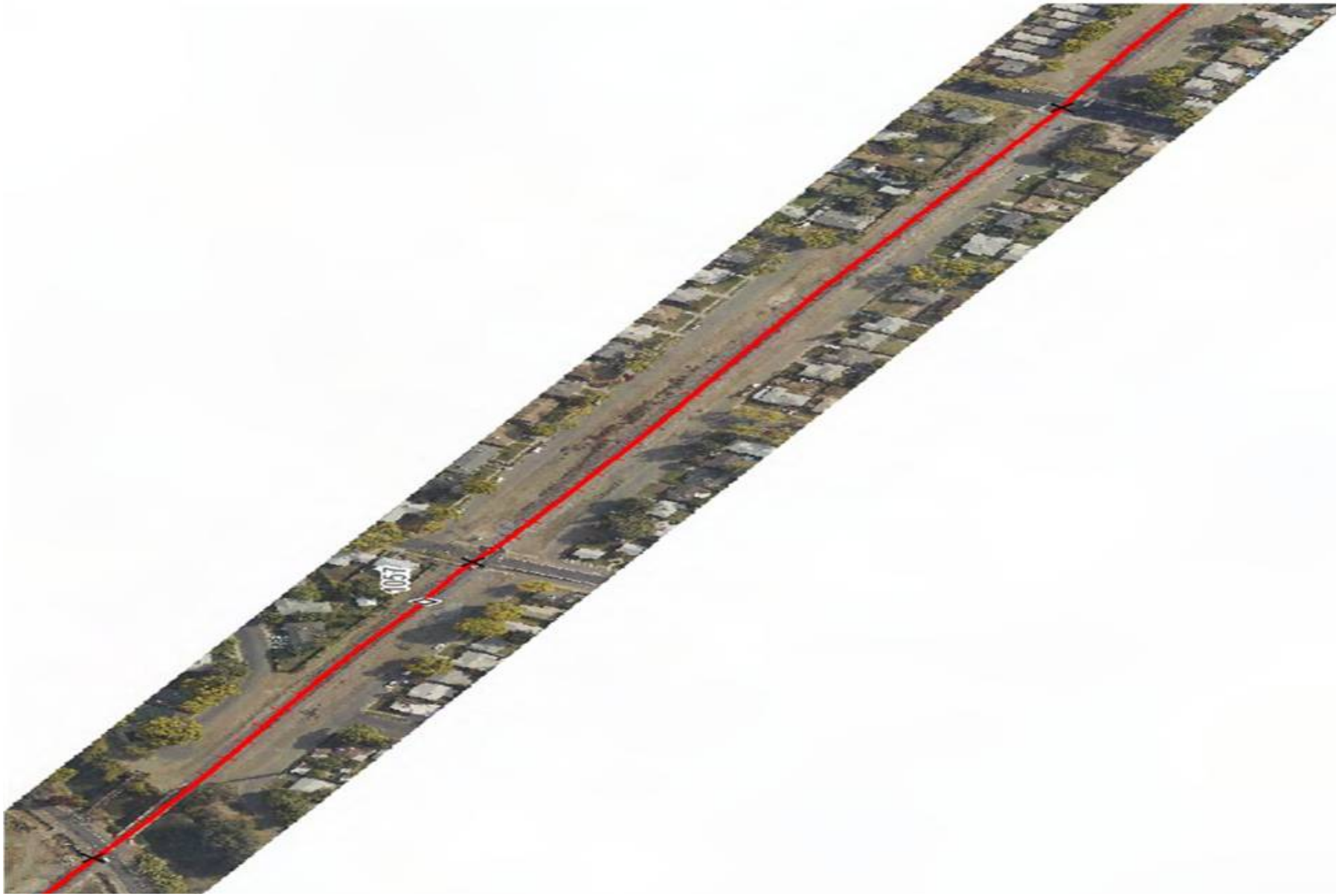


FIGURE 3-6
Aerial of LeGrand Alignment

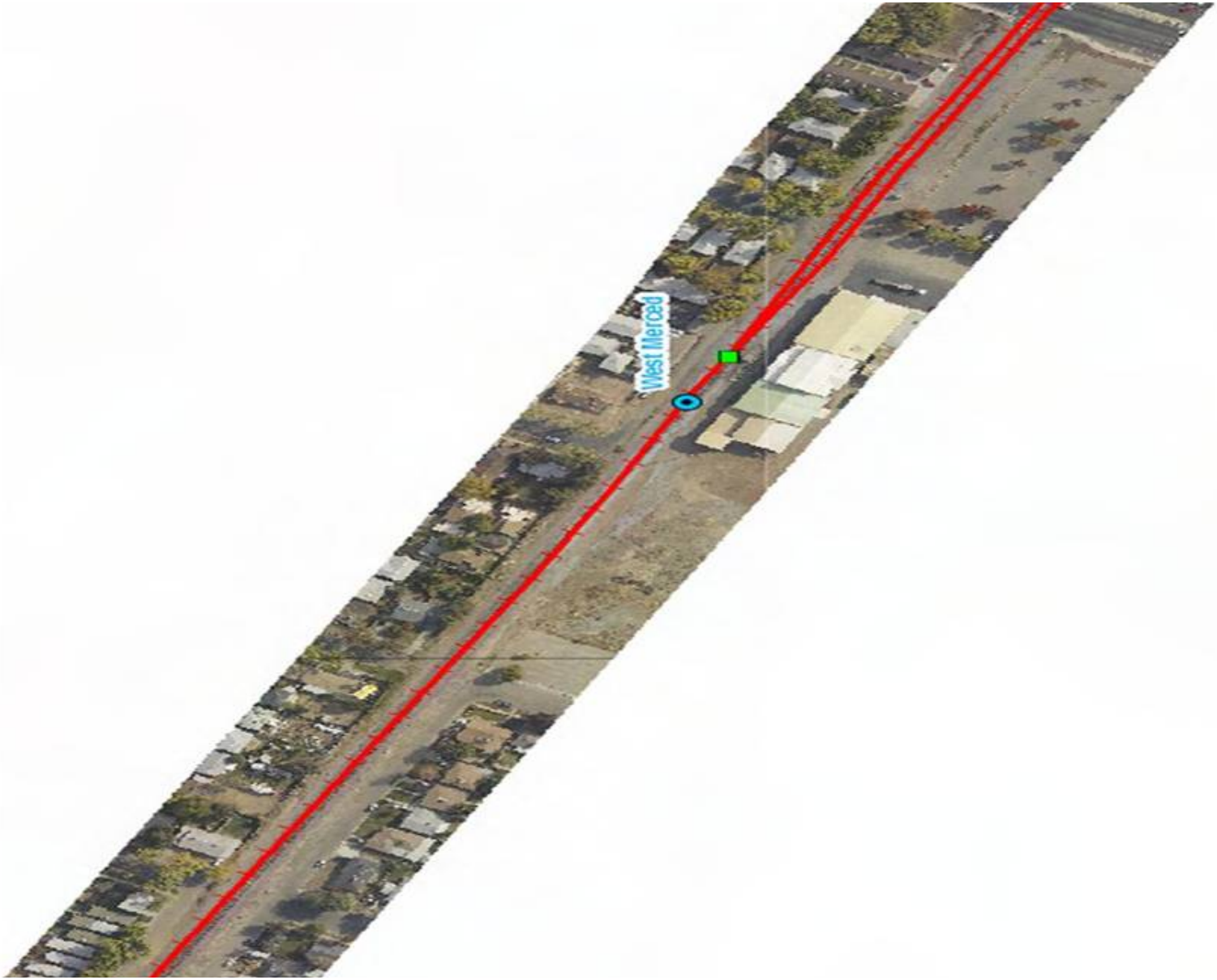


FIGURE 3-7
Aerial of LeGrand Alignment

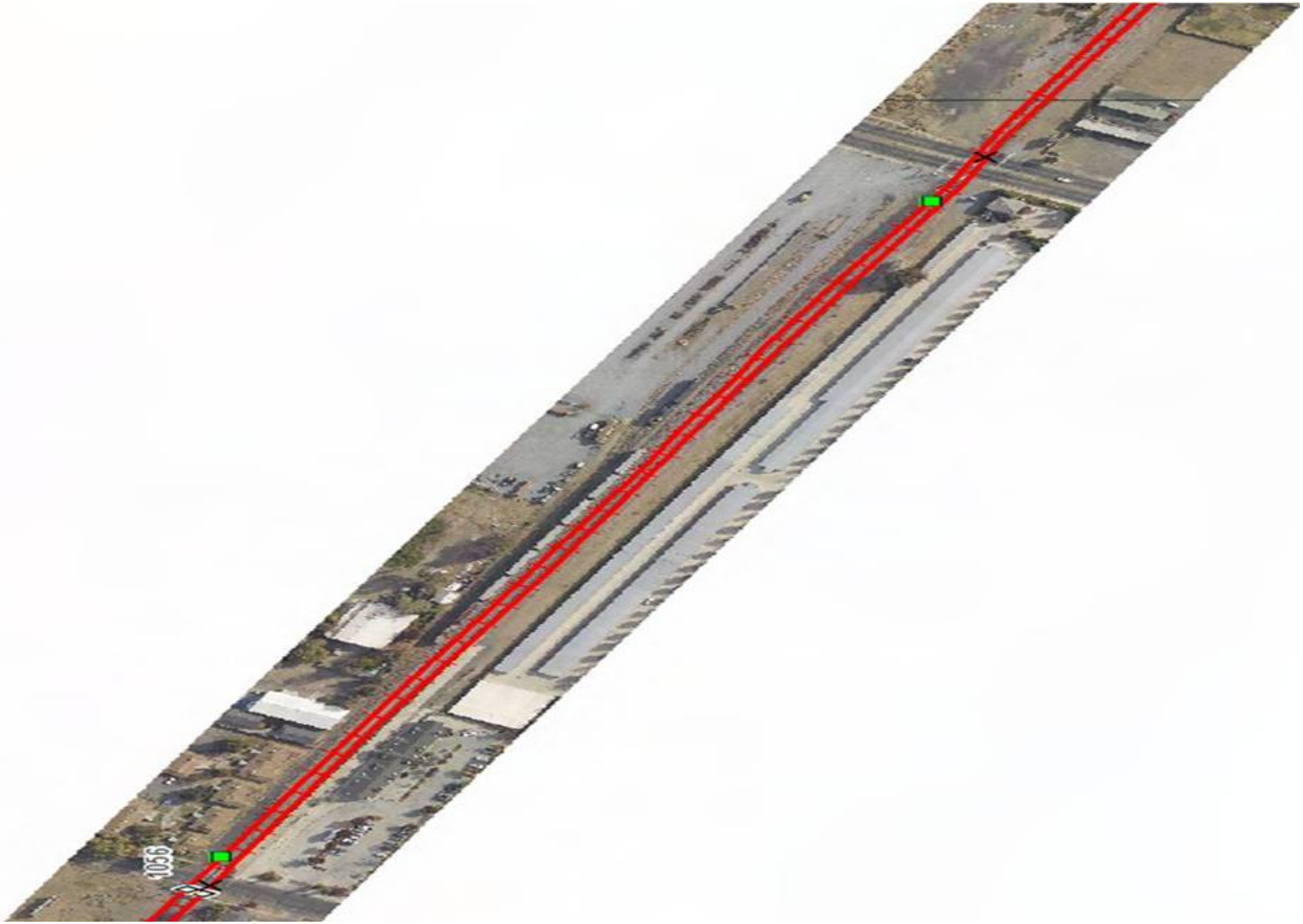


FIGURE 3-8
Aerial of LeGrand Alignment

FIGURE 3-9
Aerial of LeGrand Alignment

FIGURE 3-10
Aerial of LeGrand Alignment

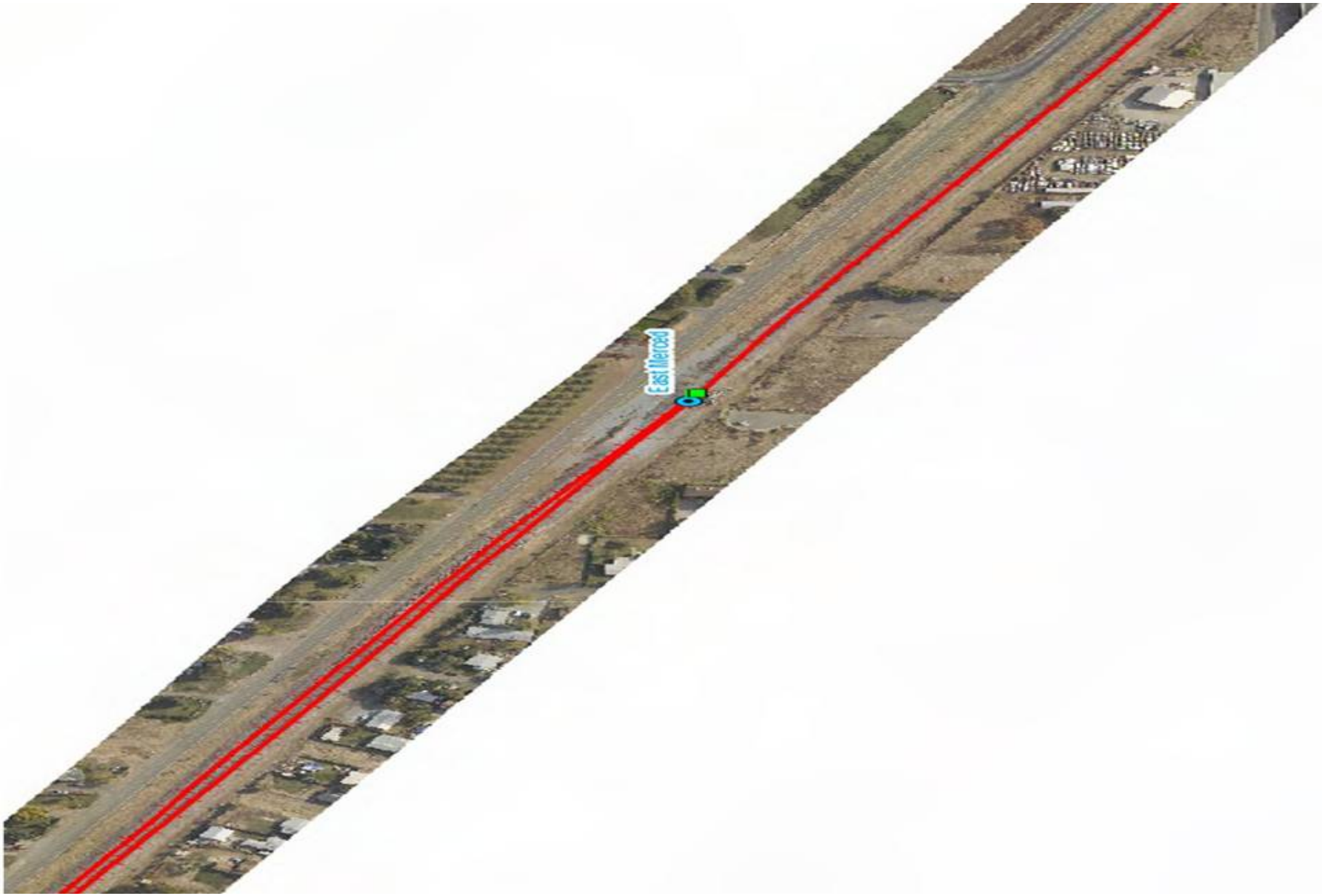


FIGURE 3-11
Aerial of LeGrand Alignment

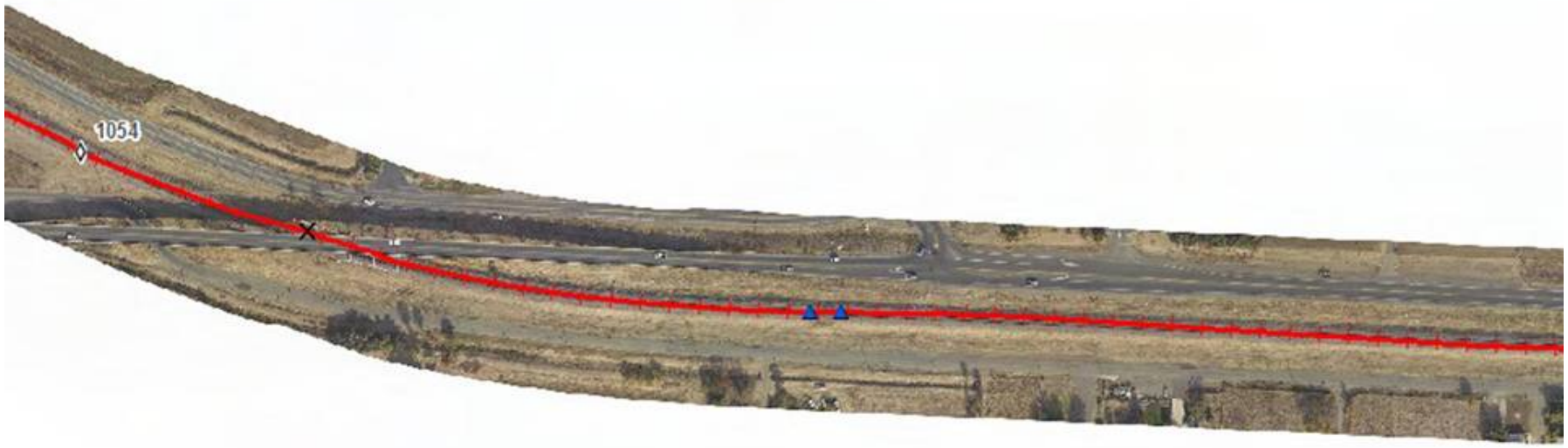


FIGURE 3-12
Aerial of LeGrand Alignment

FIGURE 3-13
Aerial of LeGrand Alignment

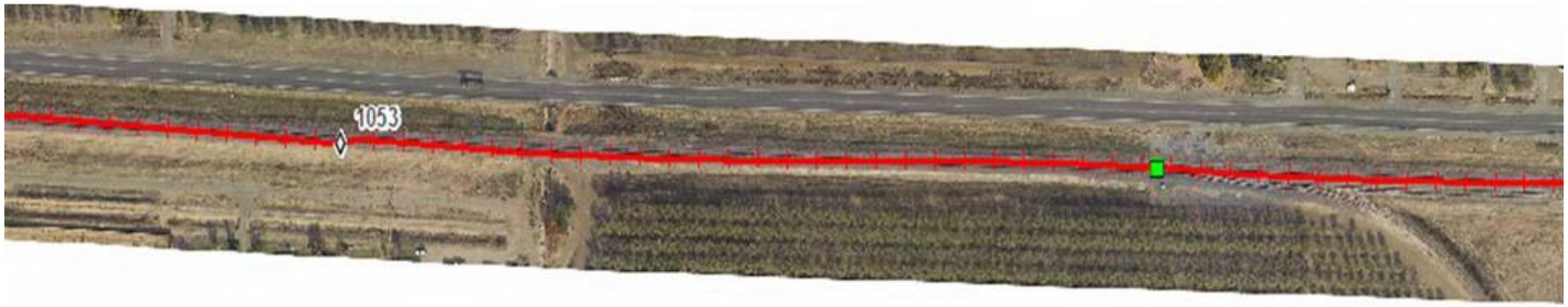


FIGURE 3-14
Aerial of LeGrand Alignment

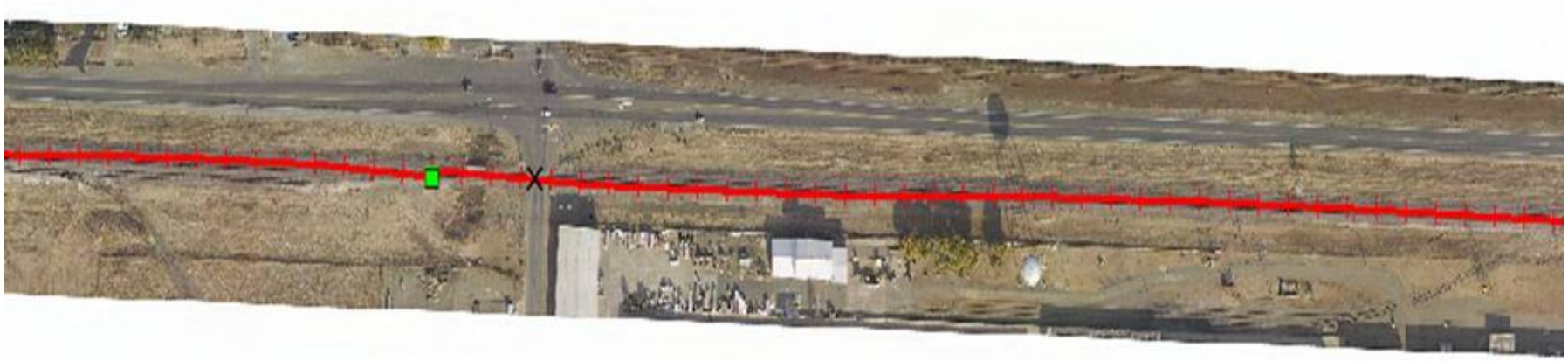


FIGURE 3-15
Aerial of LeGrand Alignment

FIGURE 3-16
Aerial of LeGrand Alignment

FIGURE 3-17
Aerial of LeGrand Alignment

FIGURE 3-18
Aerial of LeGrand Alignment

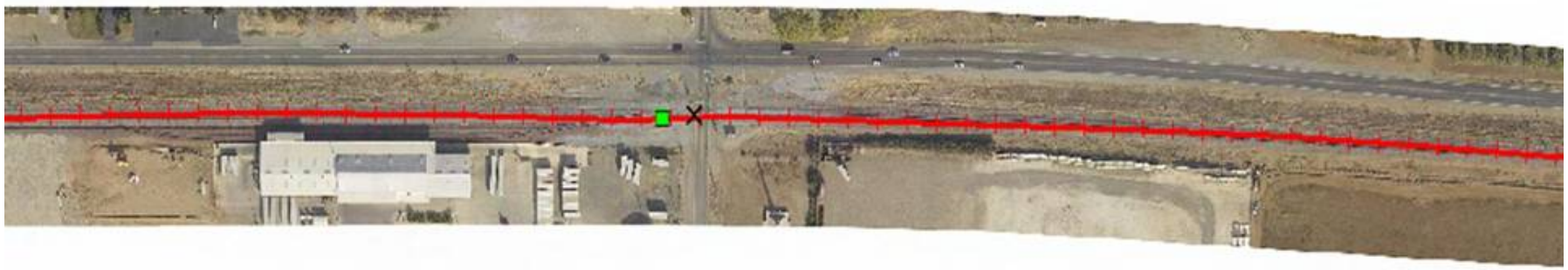


FIGURE 3-19
Aerial of LeGrand Alignment

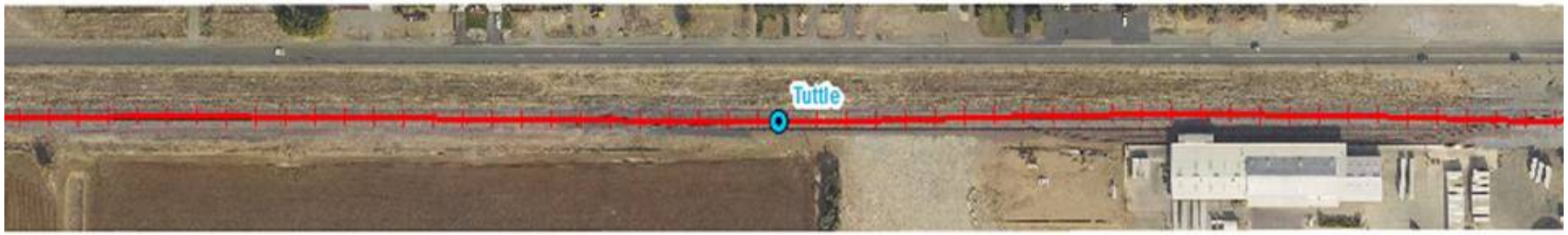


FIGURE 3-20
Aerial of LeGrand Alignment

FIGURE 3-21
Aerial of LeGrand Alignment

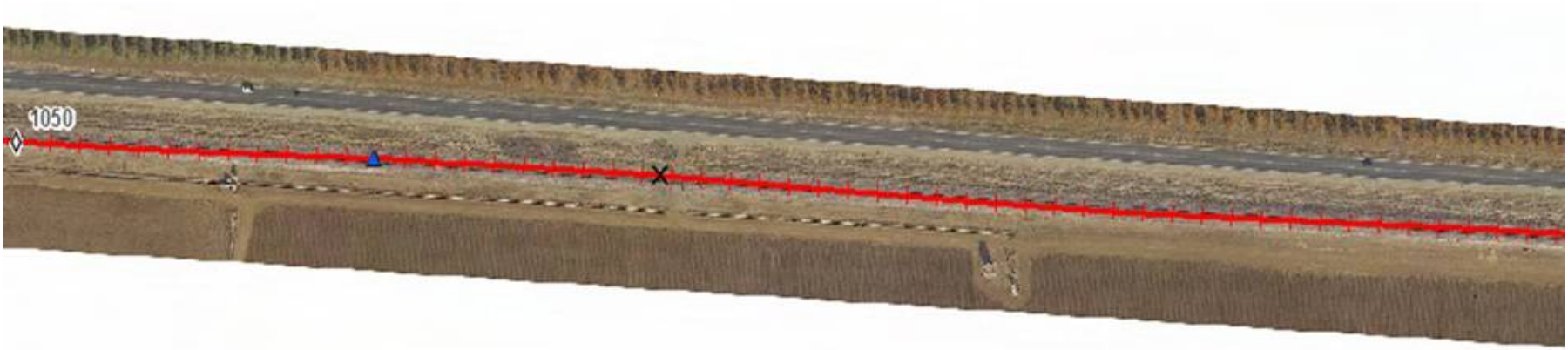


FIGURE 3-22
Aerial of LeGrand Alignment

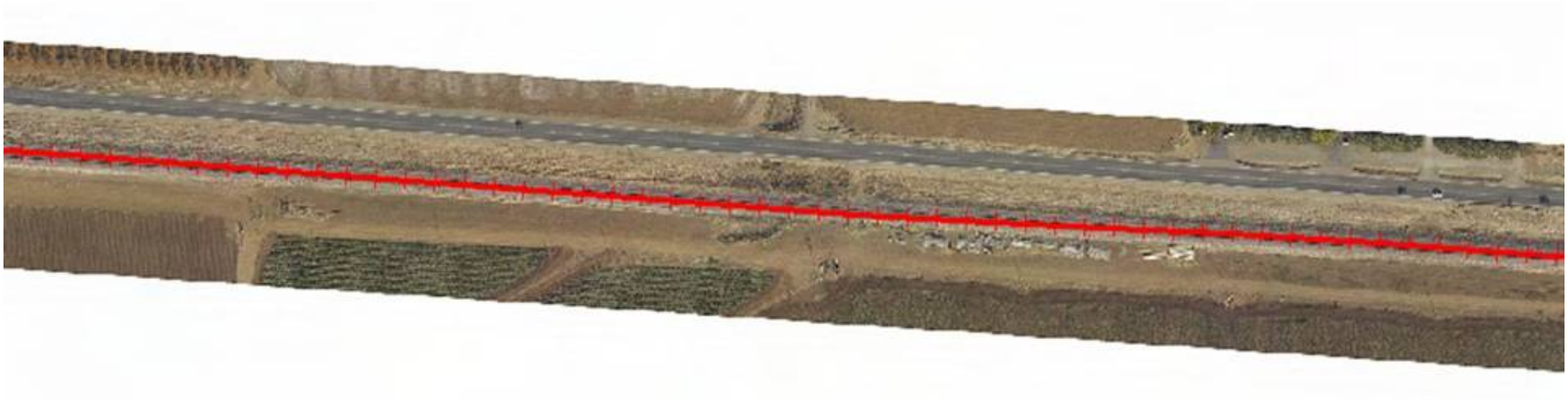


FIGURE 3-23
Aerial of LeGrand Alignment

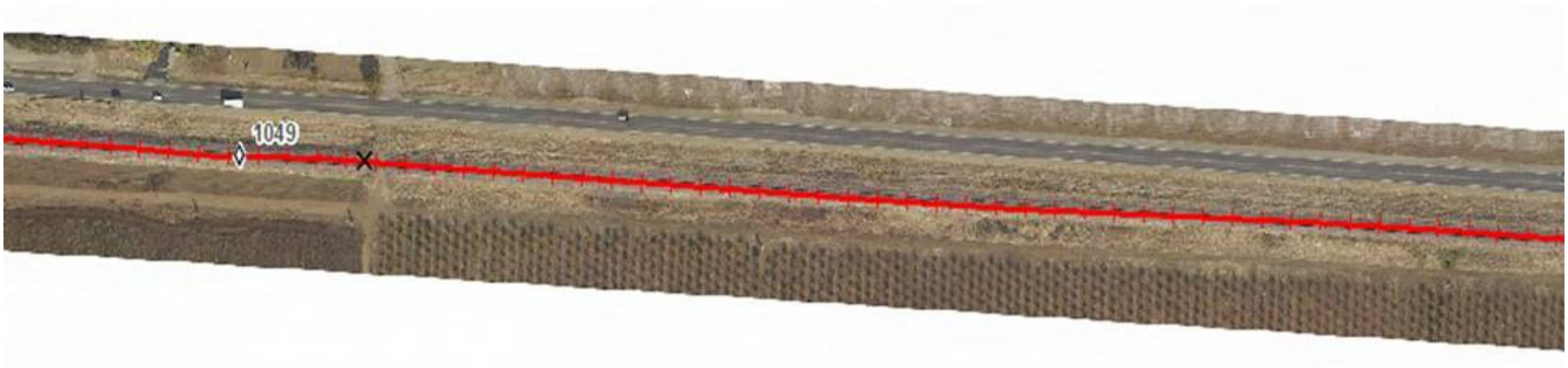


FIGURE 3-24
Aerial of LeGrand Alignment

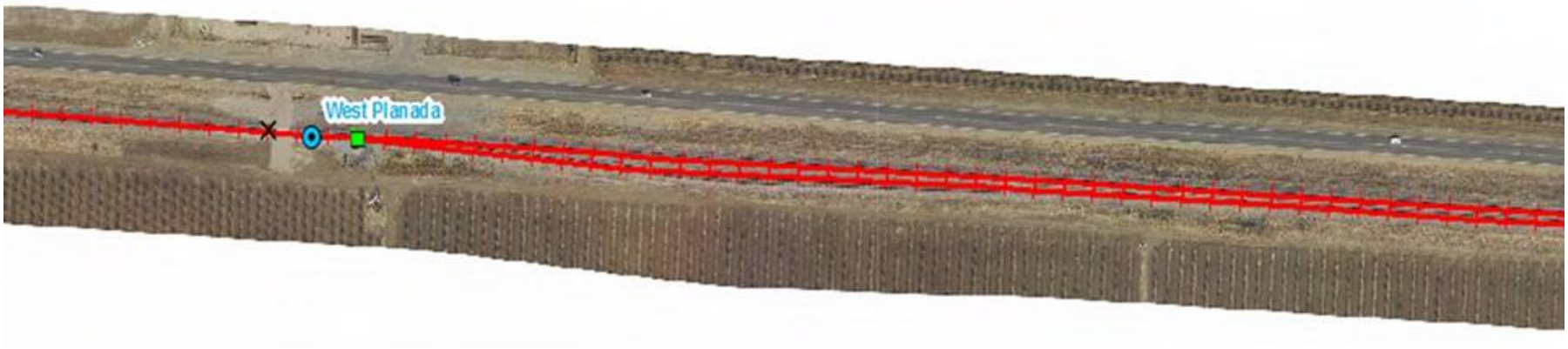


FIGURE 3-25
Aerial of LeGrand Alignment

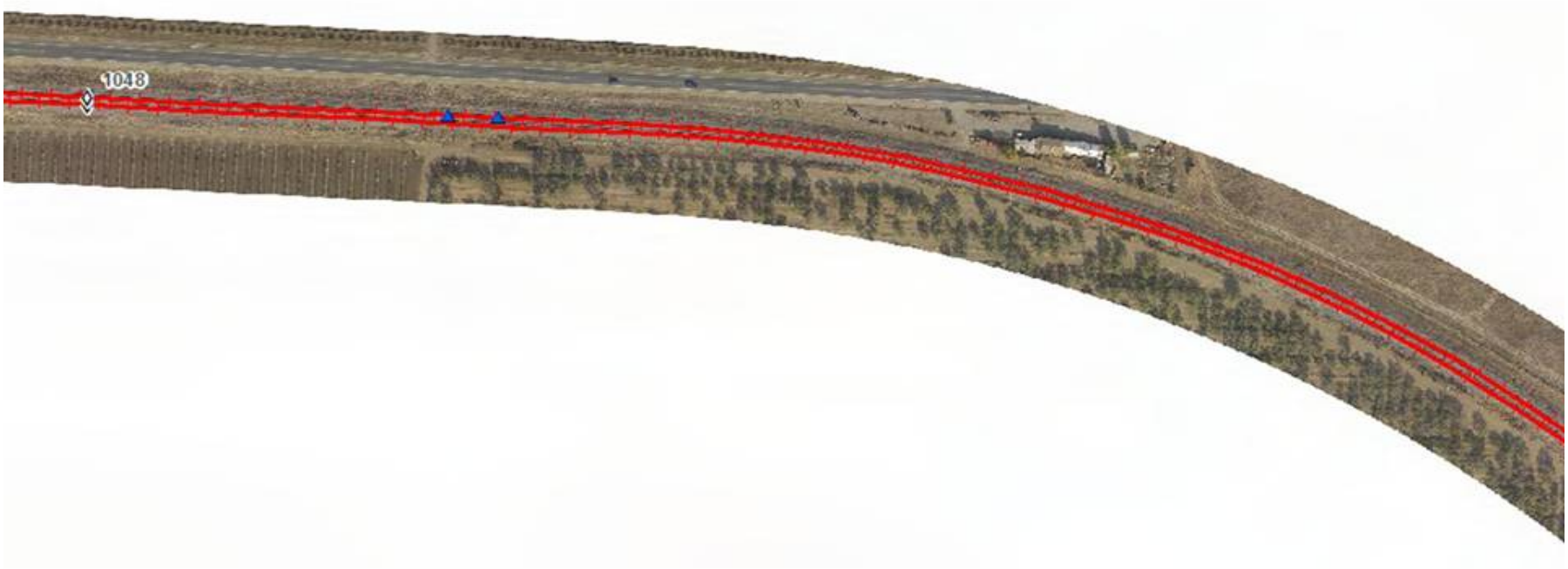


FIGURE 3-26
Aerial of LeGrand Alignment

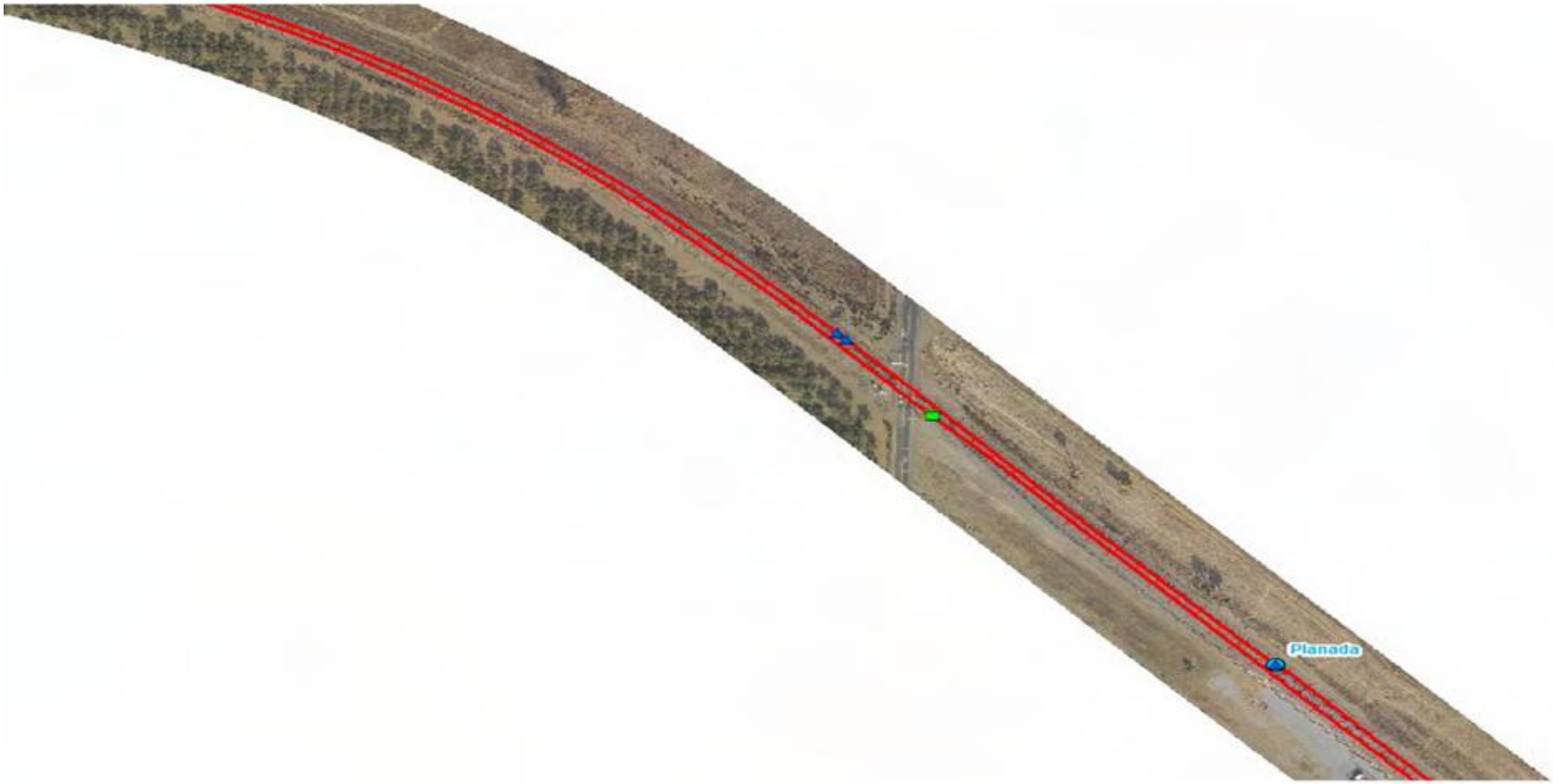


FIGURE 3-27
Aerial of LeGrand Alignment

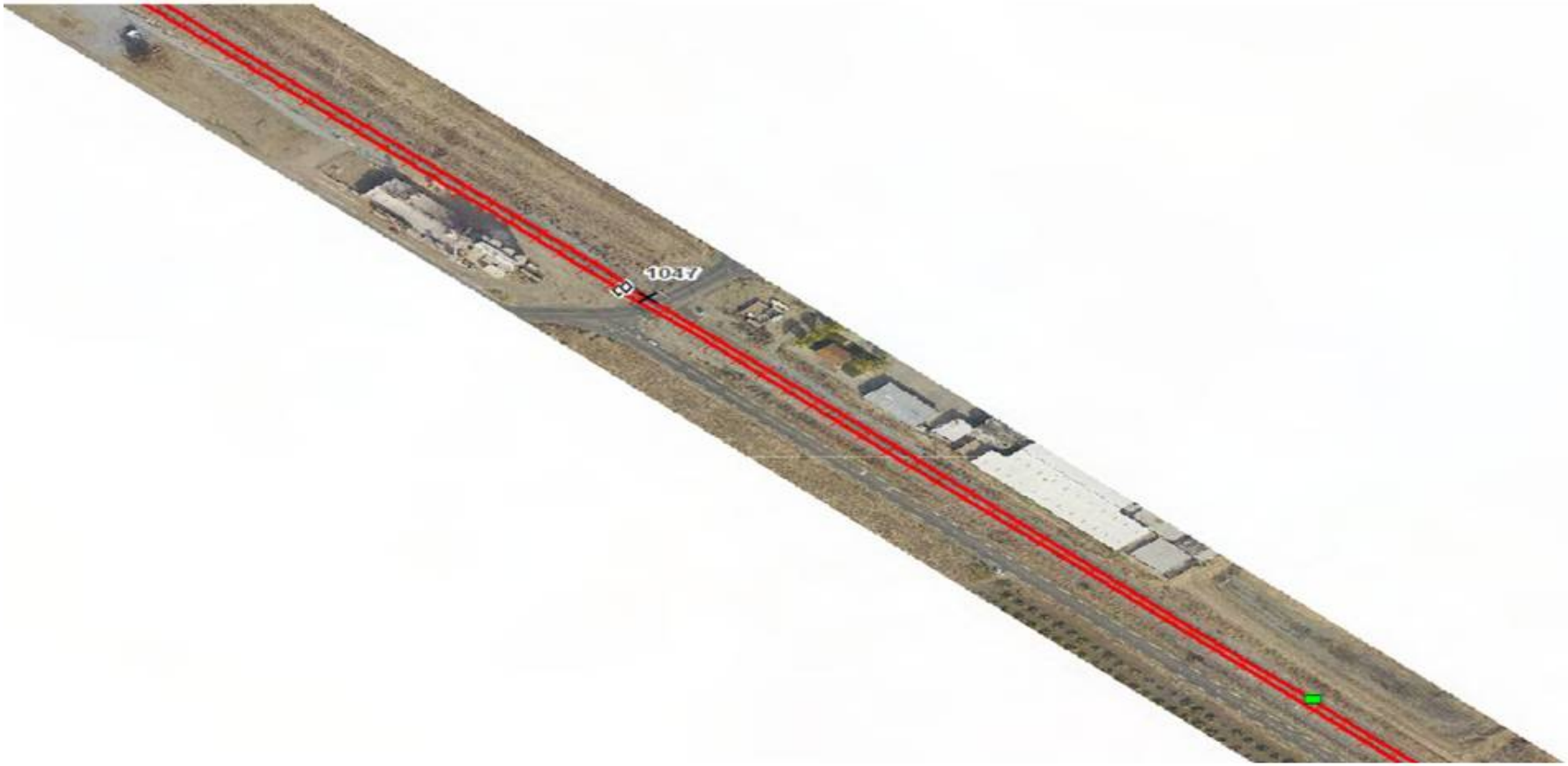


FIGURE 3-28
Aerial of LeGrand Alignment

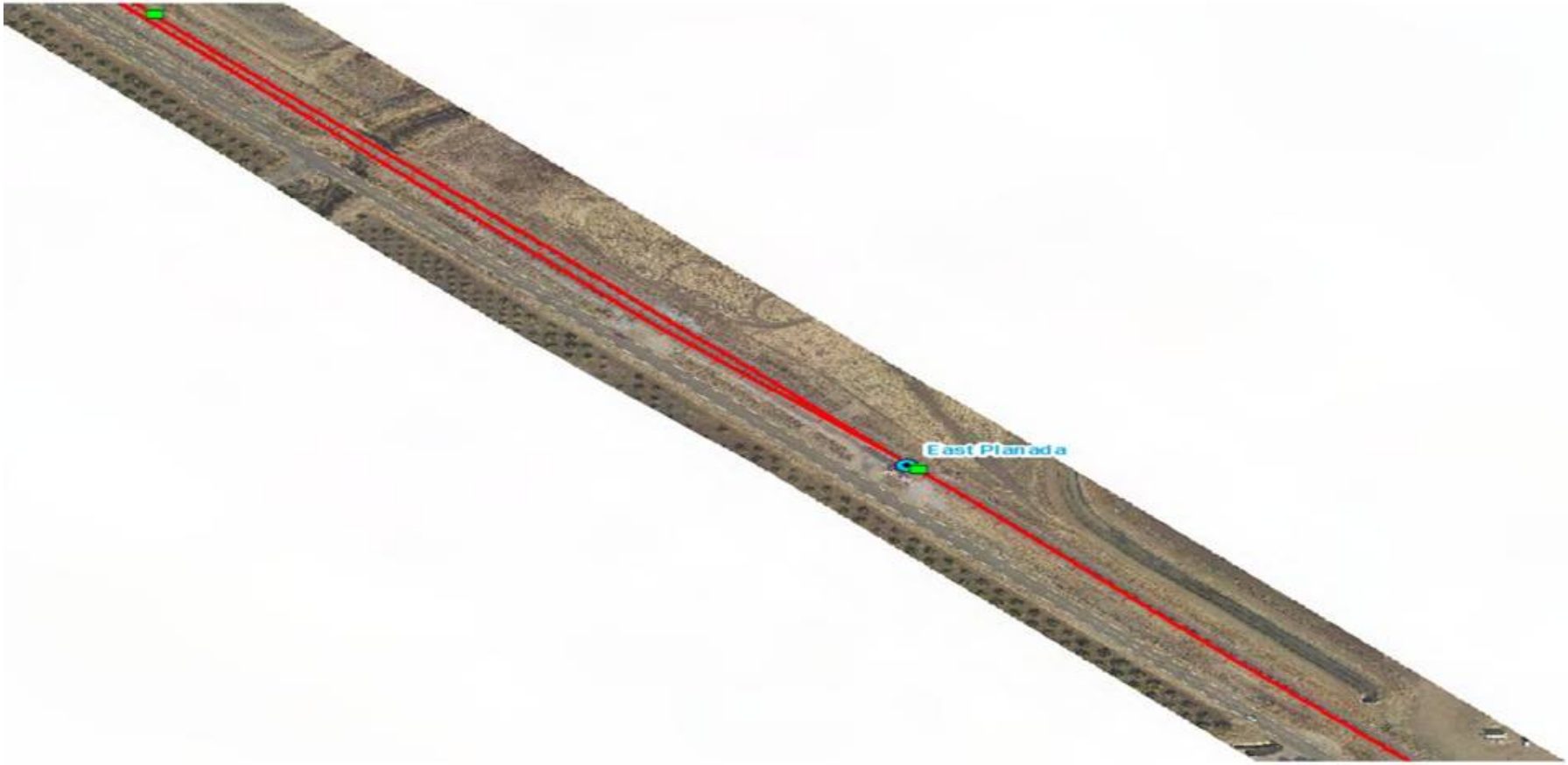


FIGURE 3-29
Aerial of LeGrand Alignment

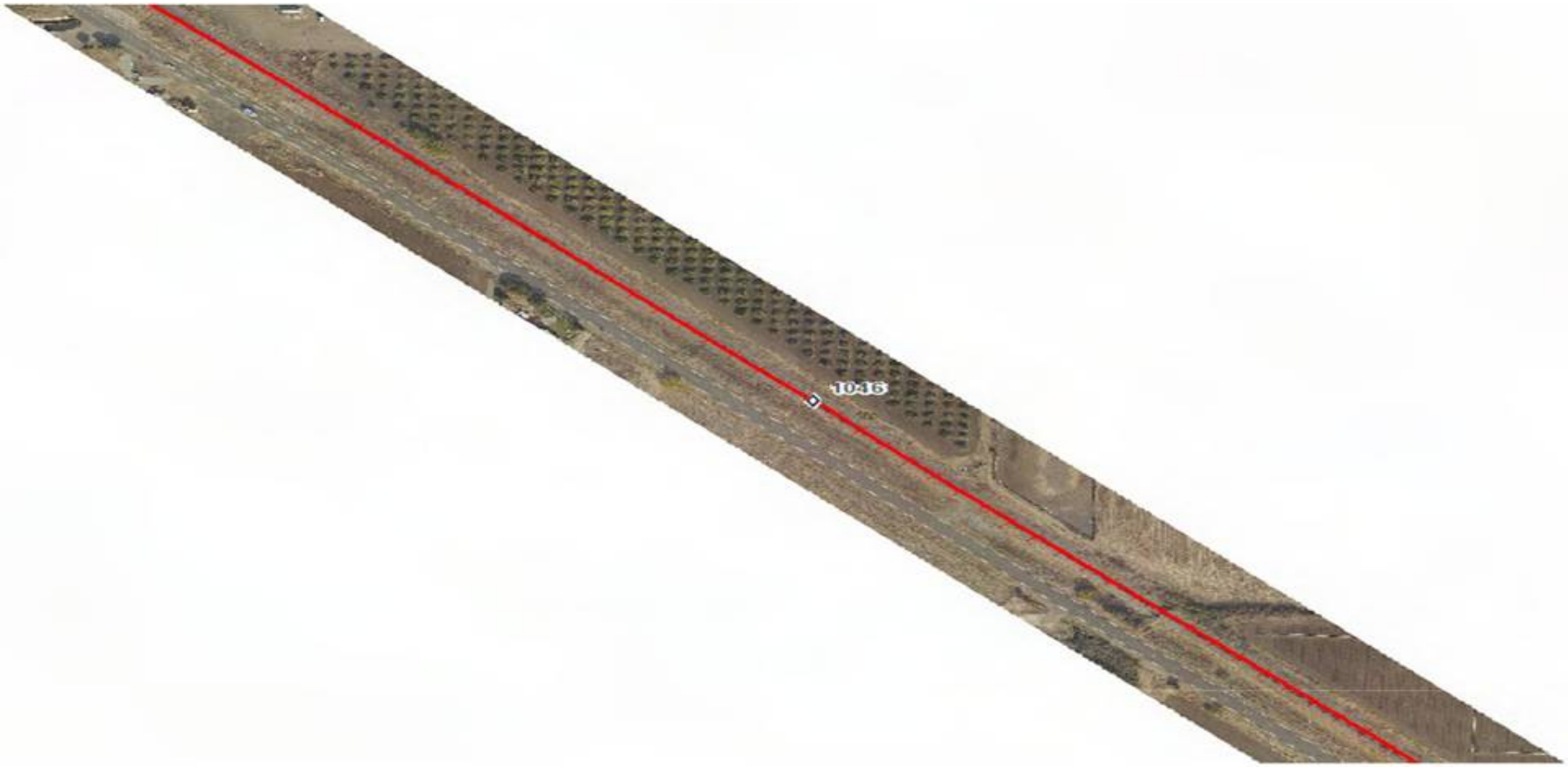


FIGURE 3-30
Aerial of LeGrand Alignment

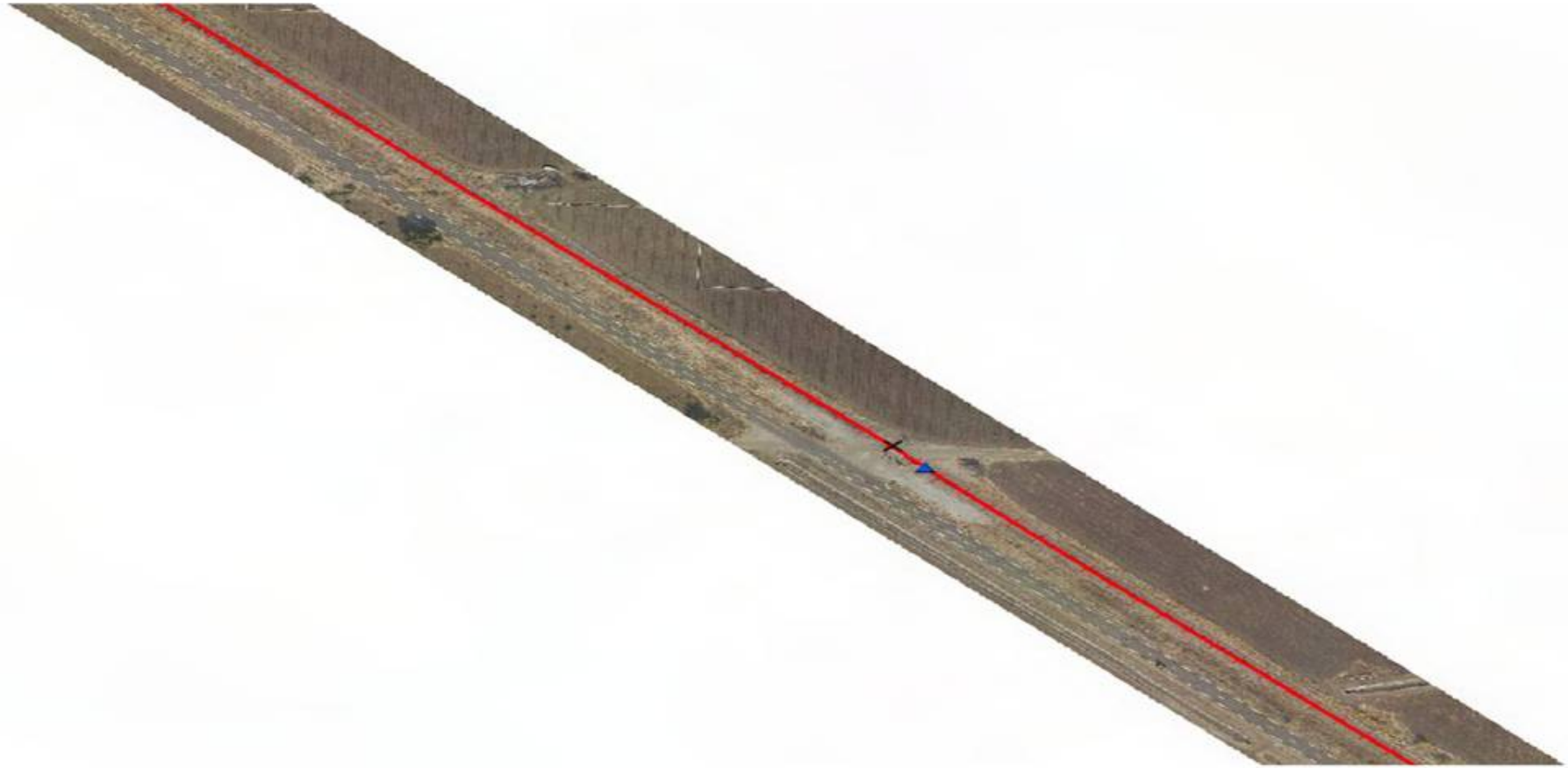


FIGURE 3-31
Aerial of LeGrand Alignment

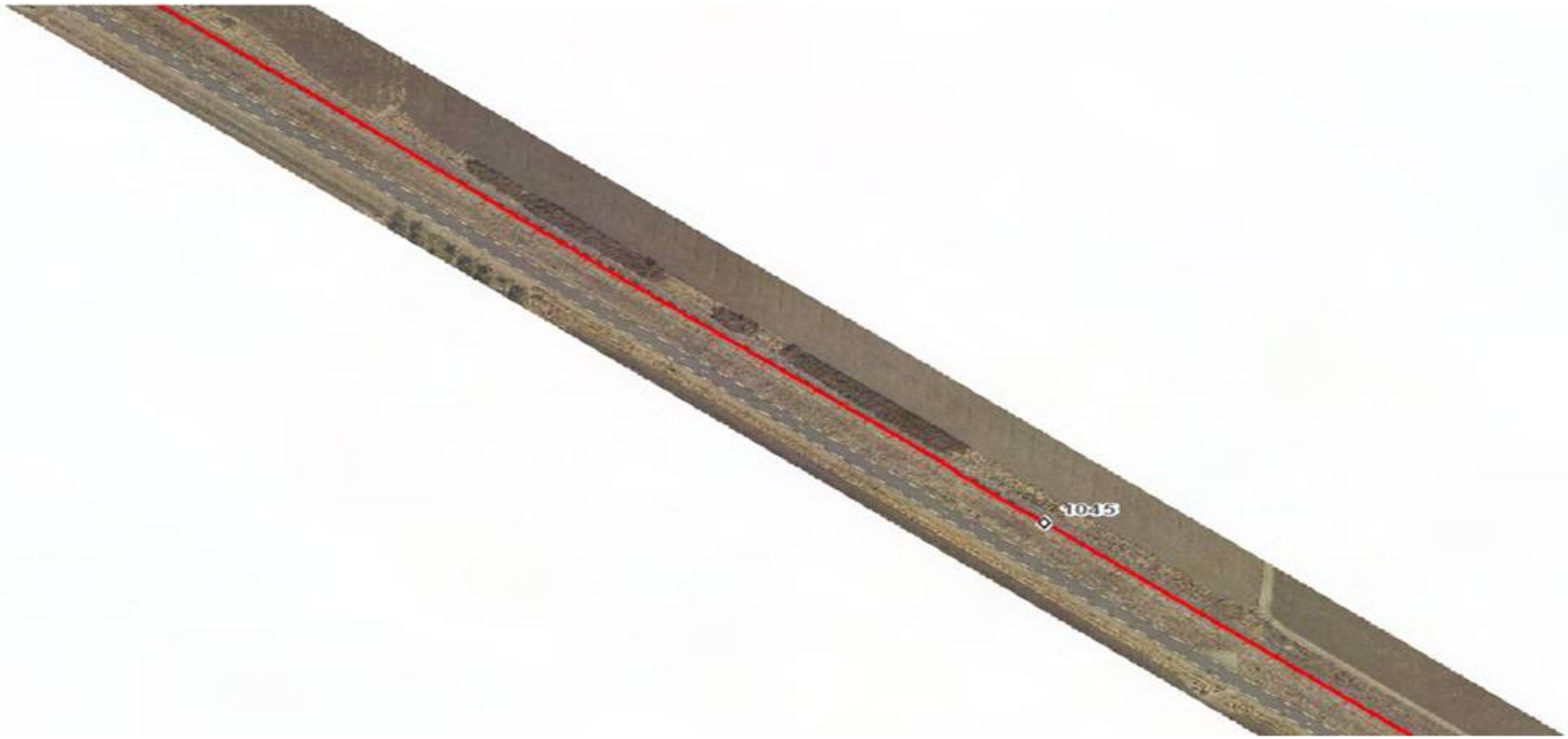


FIGURE 3-32
Aerial of LeGrand Alignment

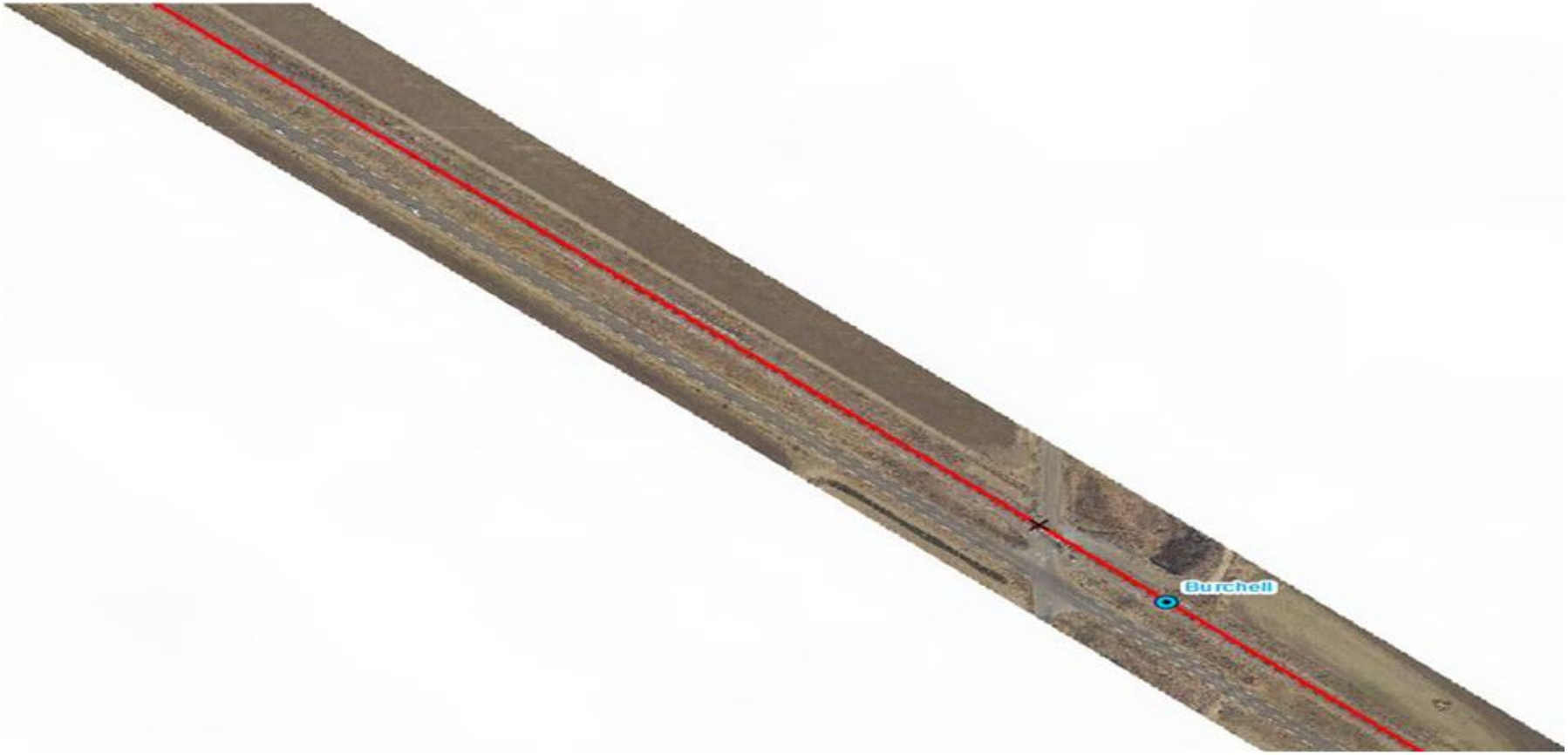


FIGURE 3-33
Aerial of LeGrand Alignment

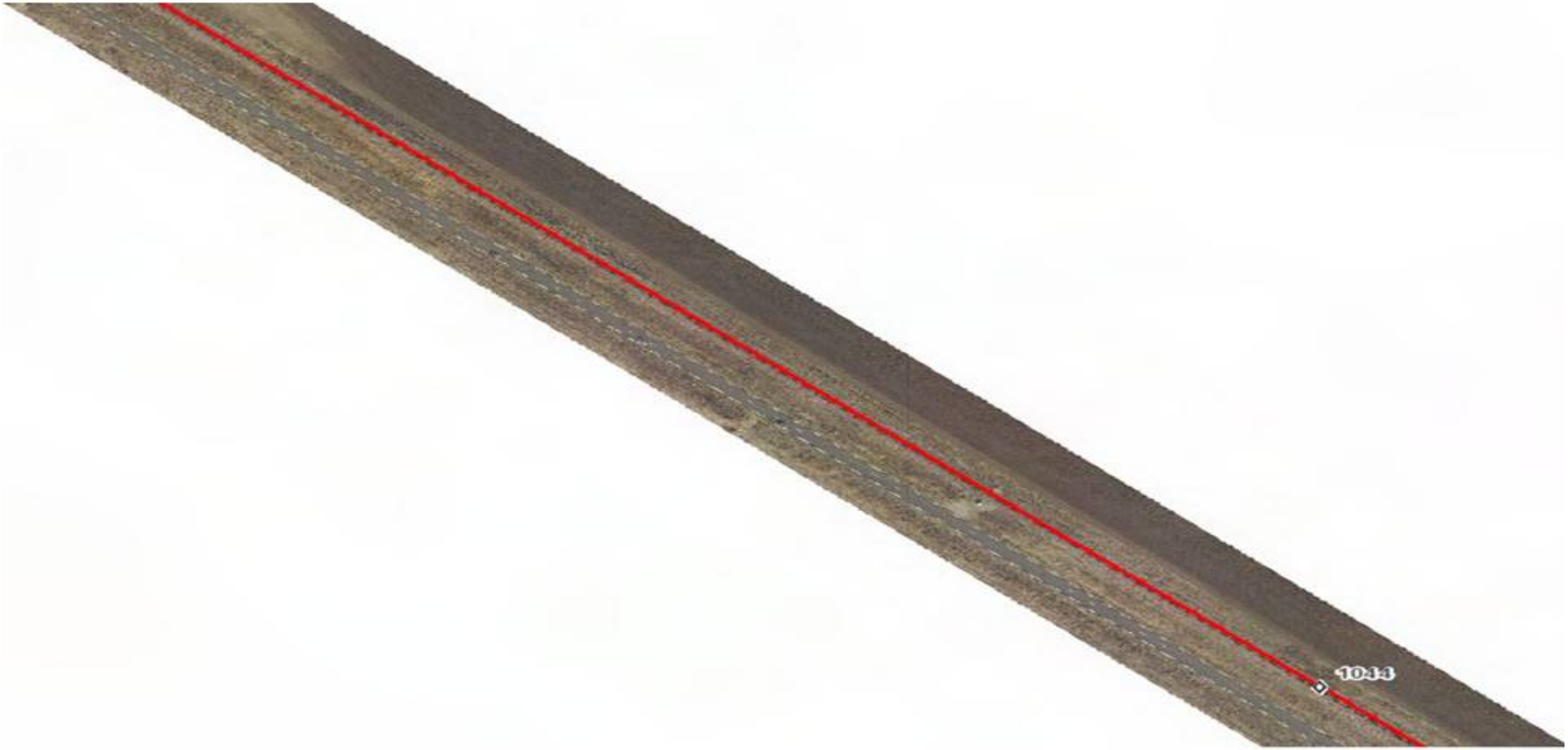


FIGURE 3-34
Aerial of LeGrand Alignment

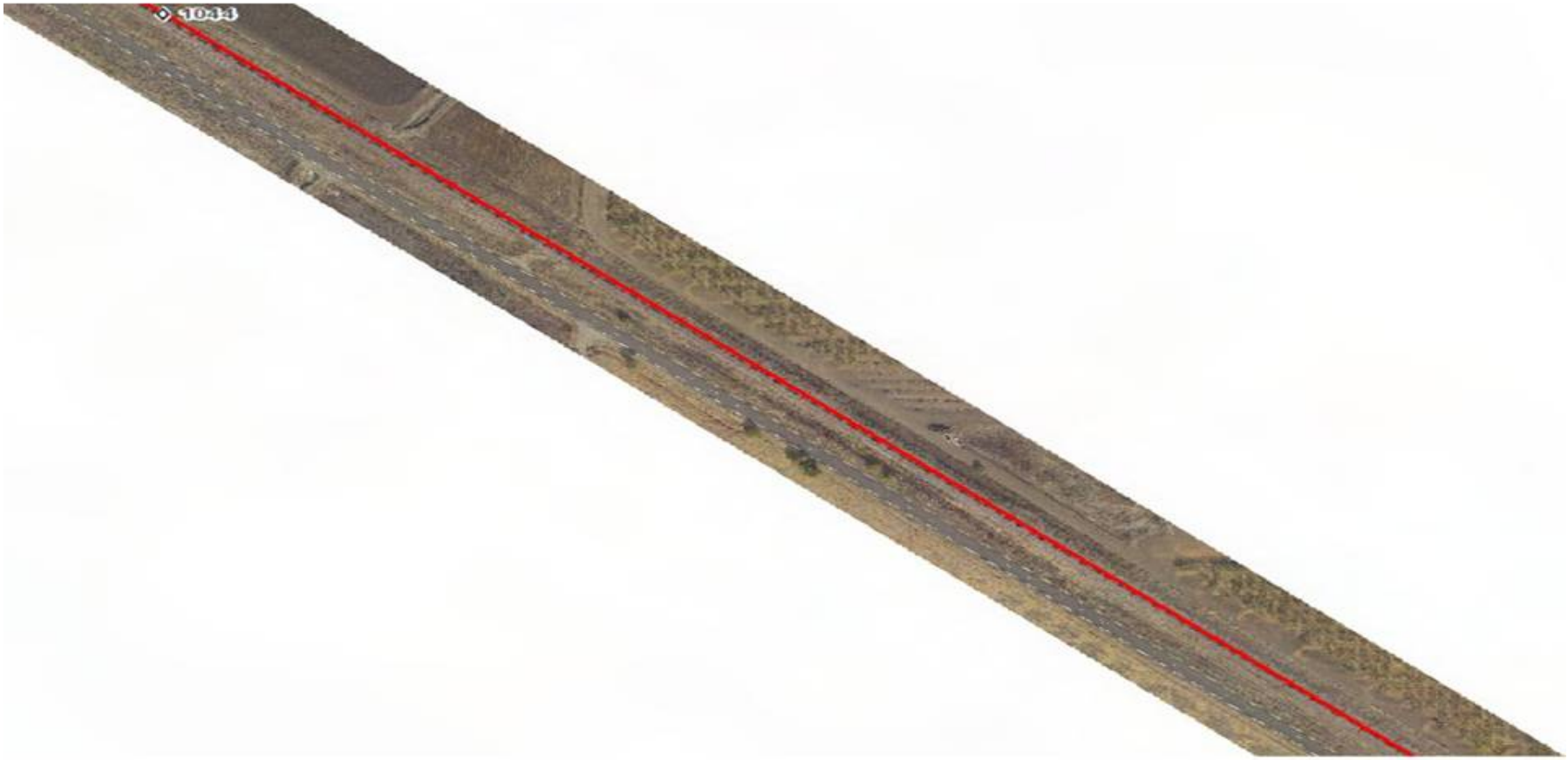


FIGURE 3-35
Aerial of LeGrand Alignment

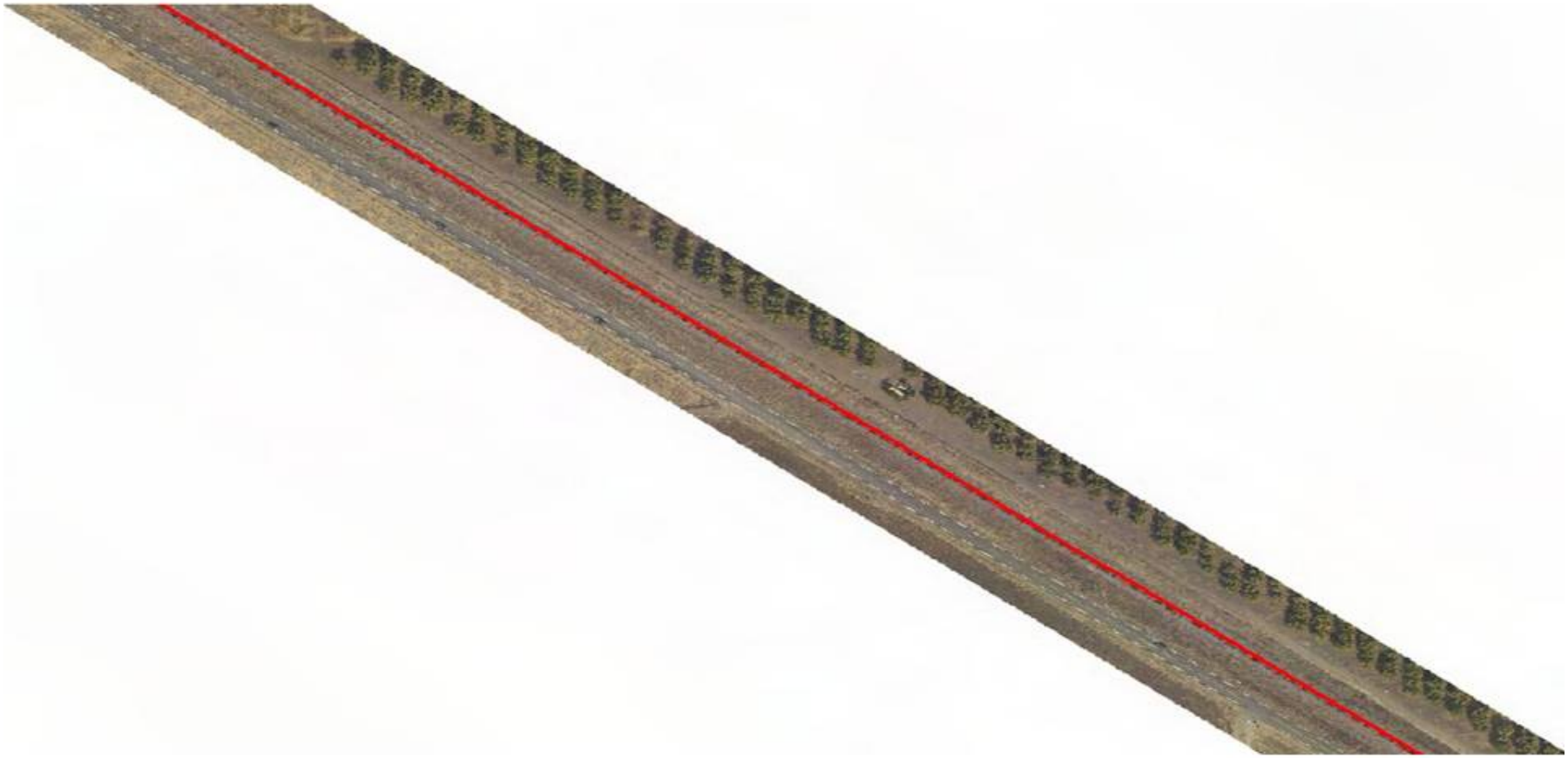


FIGURE 3-36
Aerial of LeGrand Alignment

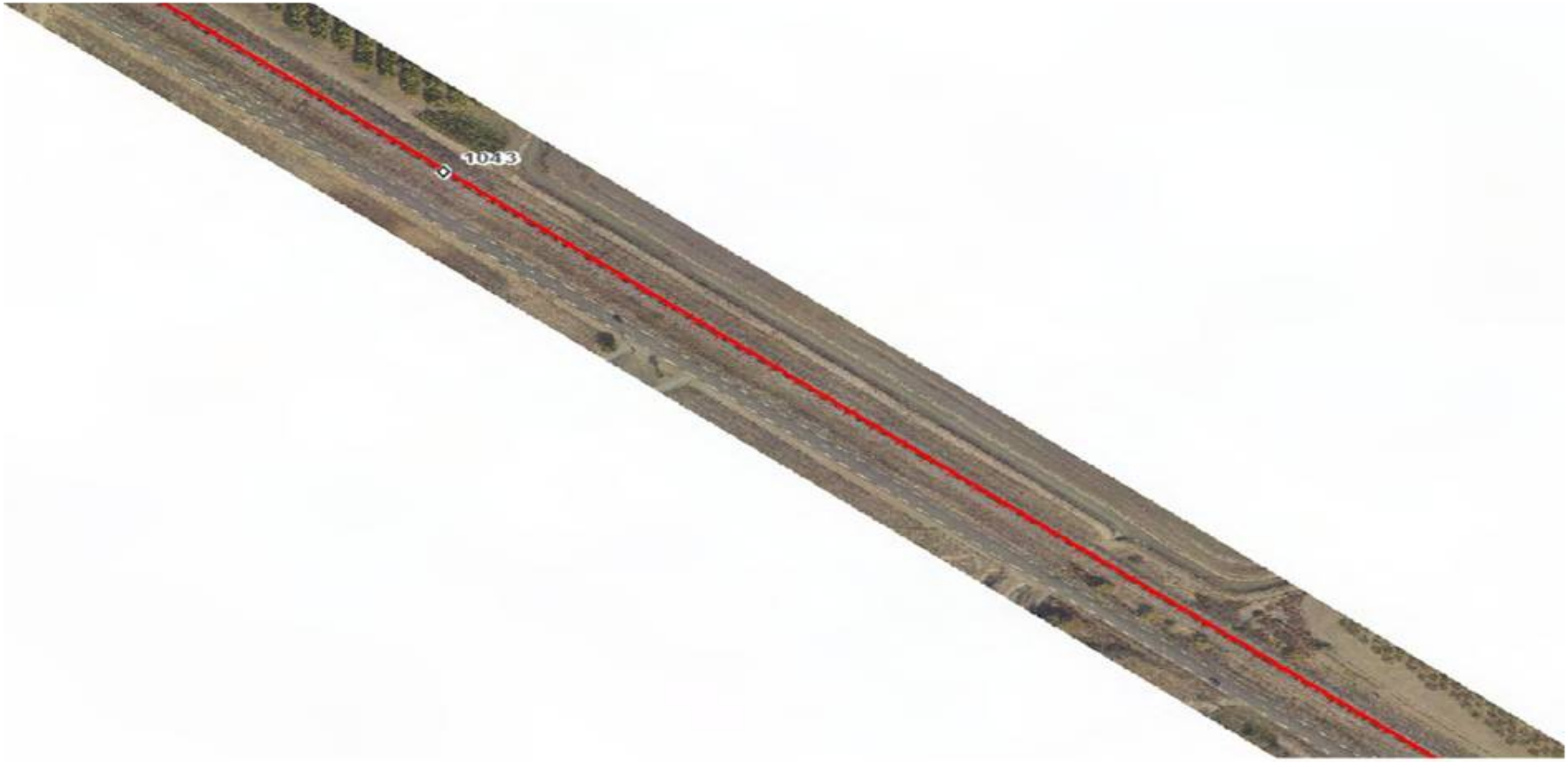


FIGURE 3-37
Aerial of LeGrand Alignment

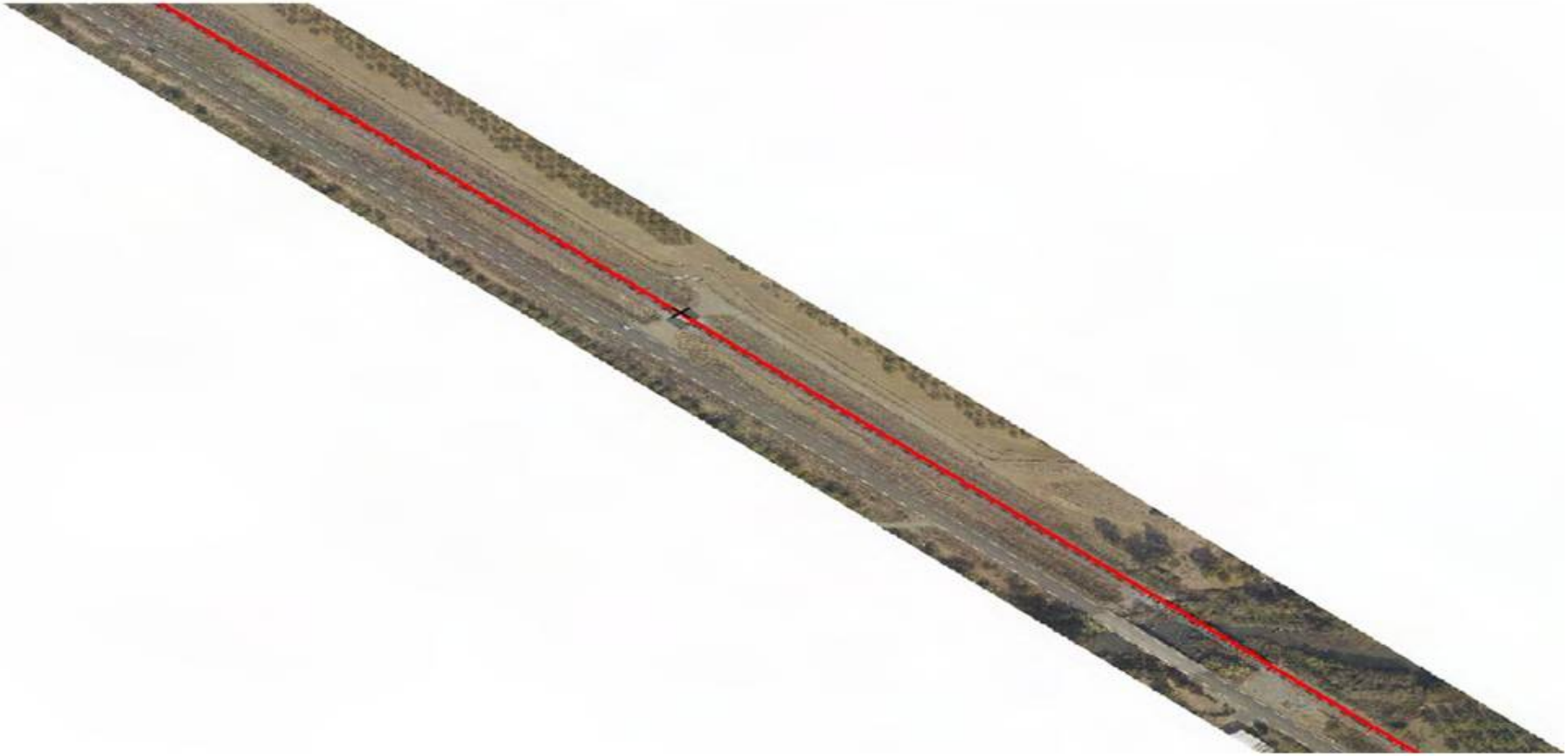


FIGURE 3-38
Aerial of LeGrand Alignment

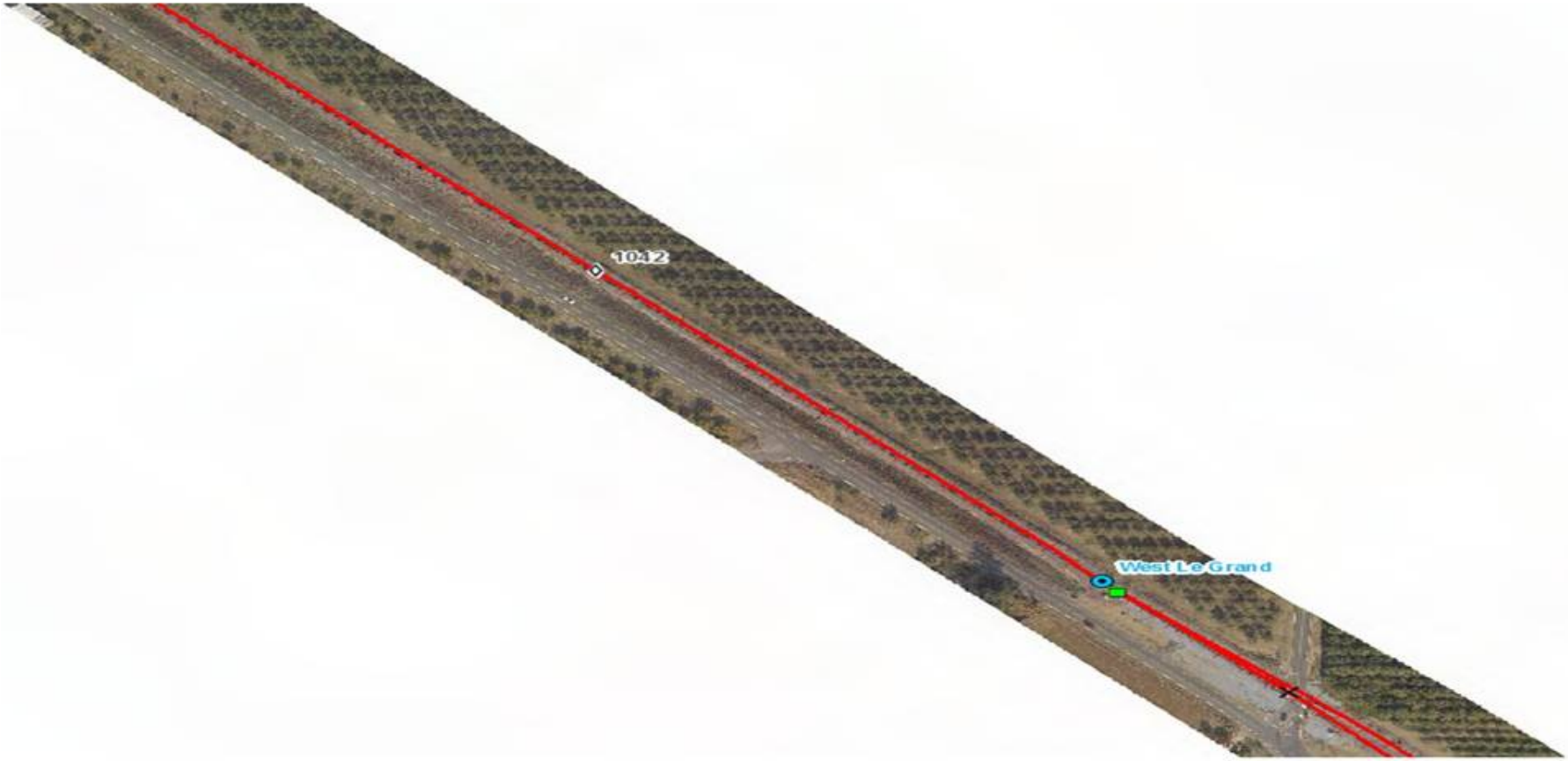


FIGURE 3-39
Aerial of LeGrand Alignment

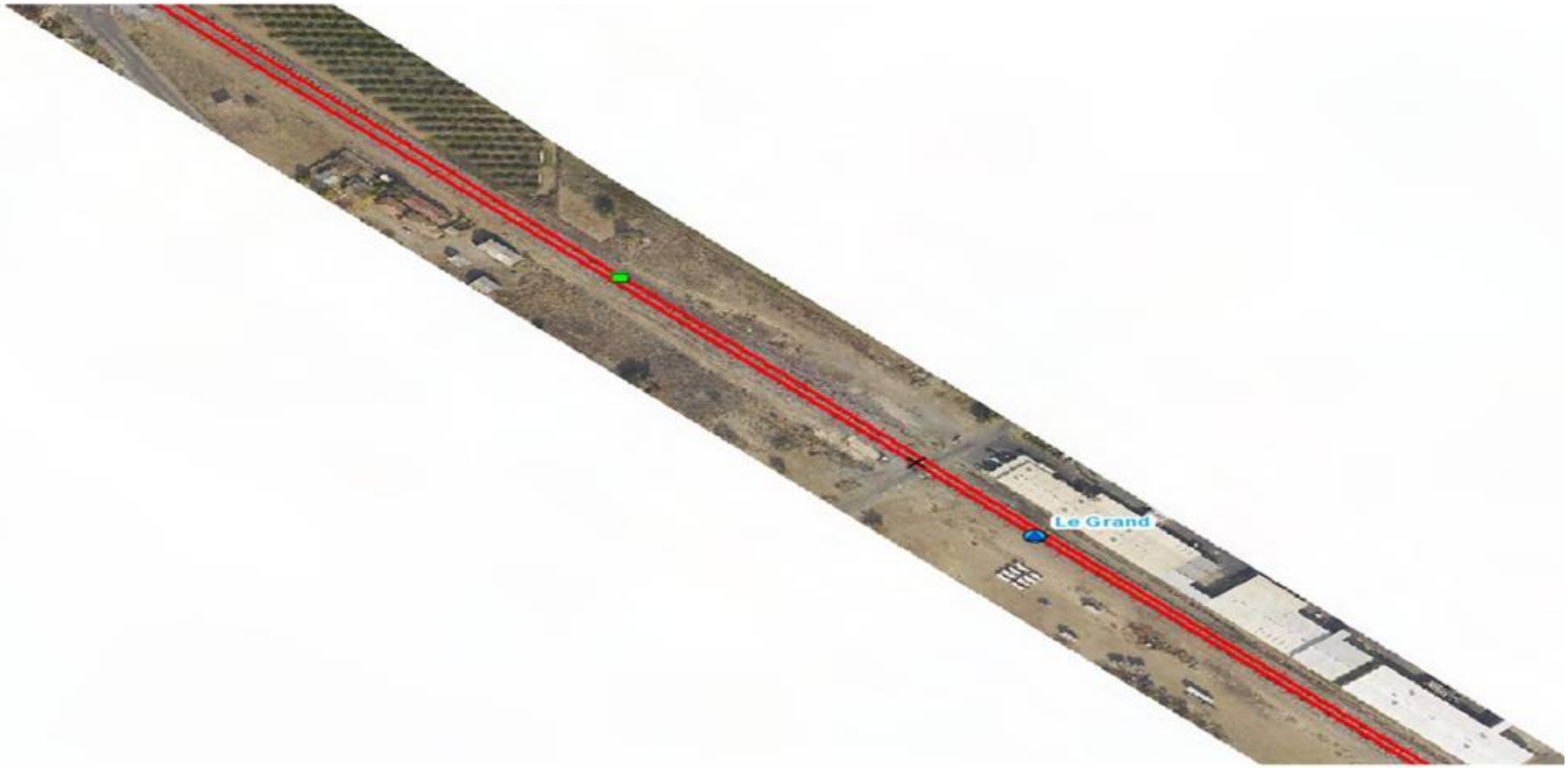


FIGURE 3-40
Aerial of LeGrand Alignment

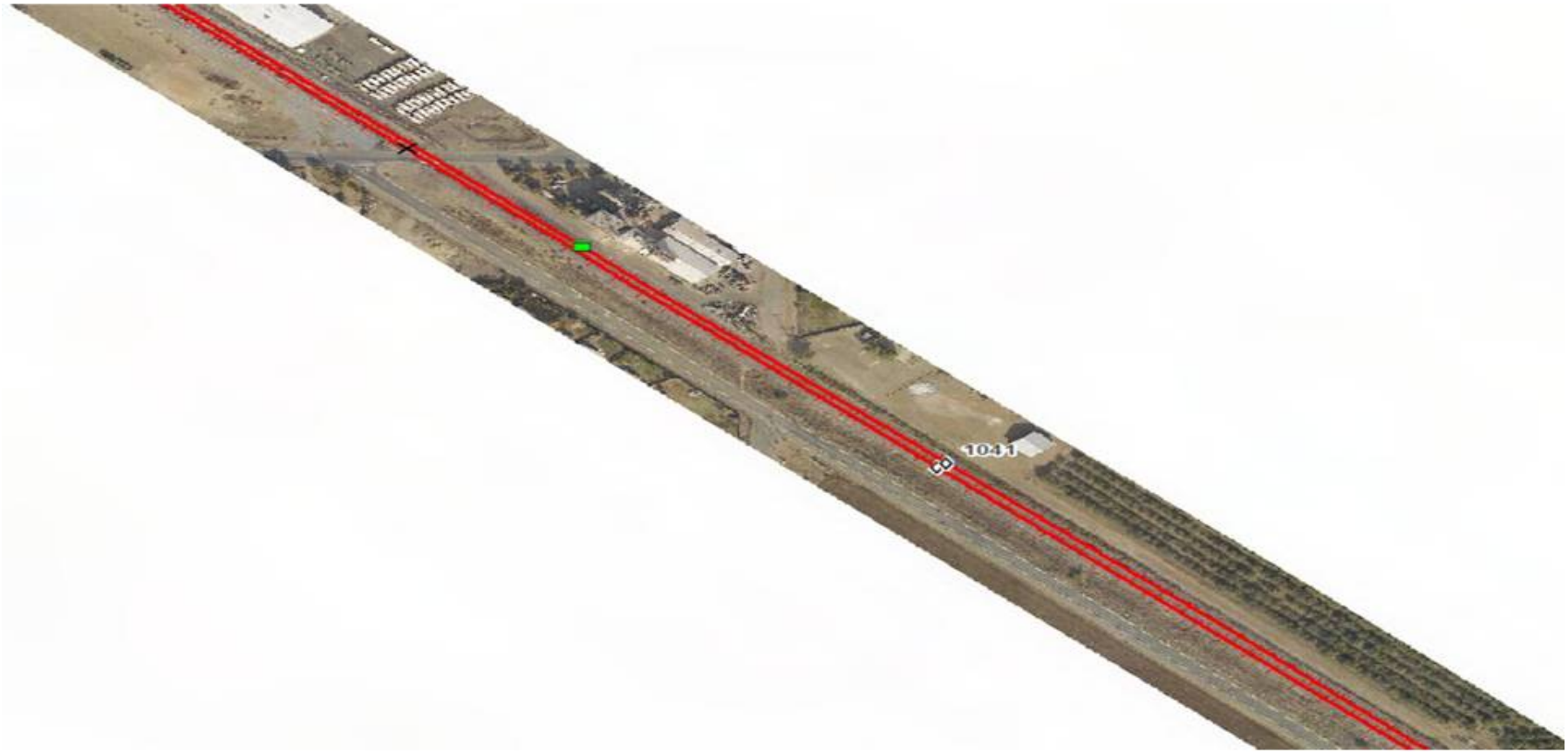


FIGURE 3-41
Aerial of LeGrand Alignment

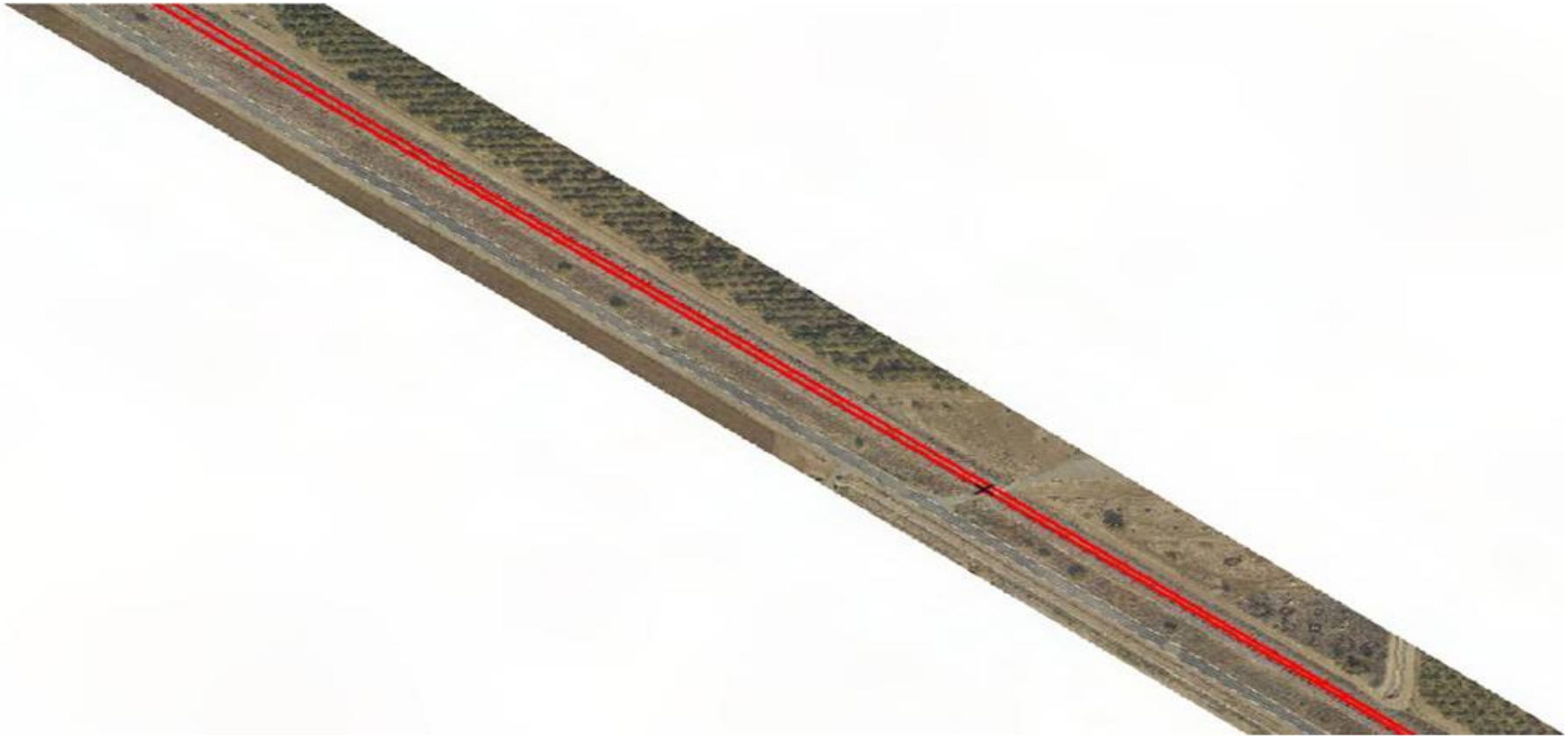


FIGURE 3-42
Aerial of LeGrand Alignment

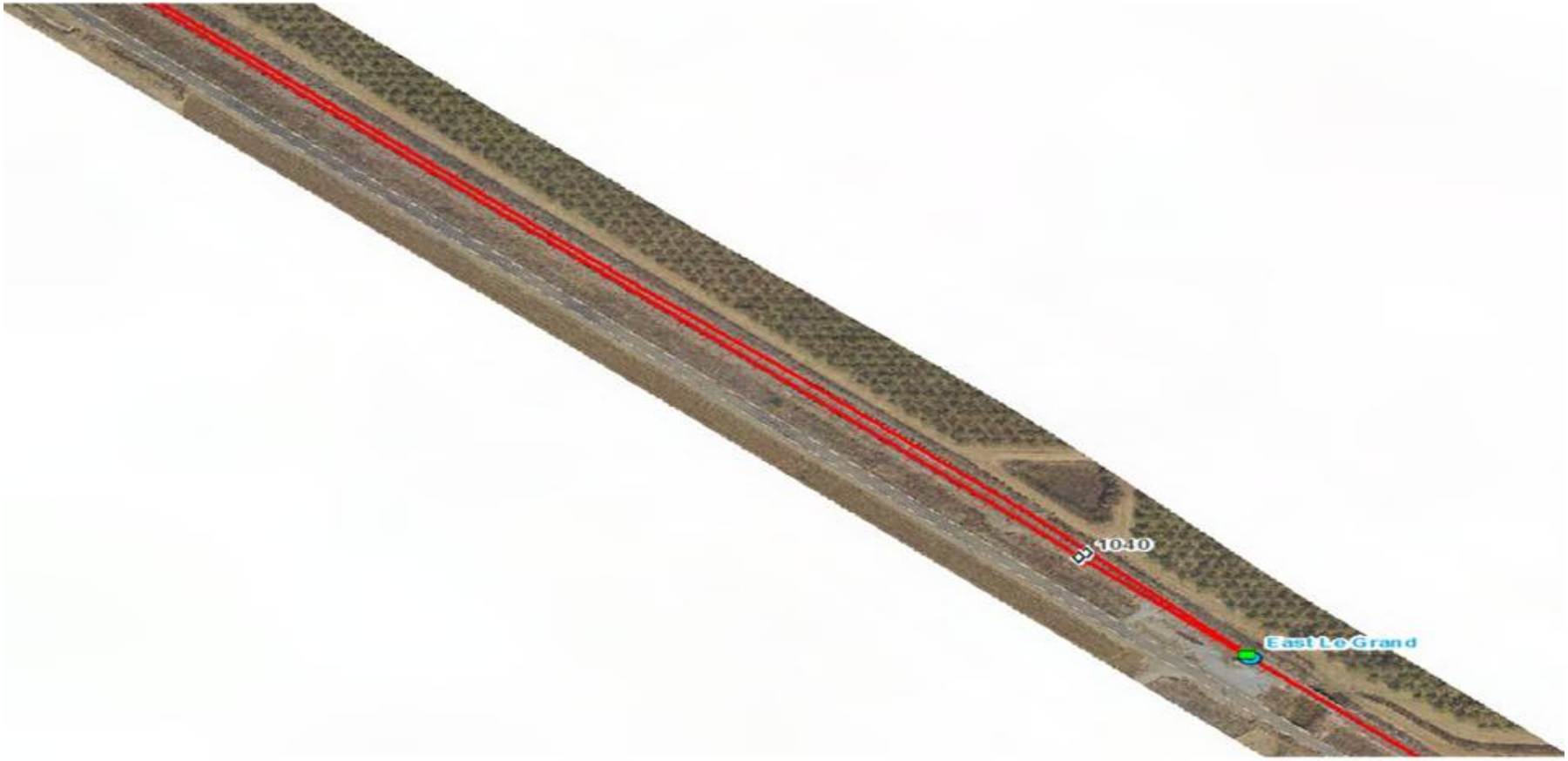


FIGURE 3-43
Aerial of LeGrand Alignment

FIGURE 3-44
Aerial of LeGrand Alignment

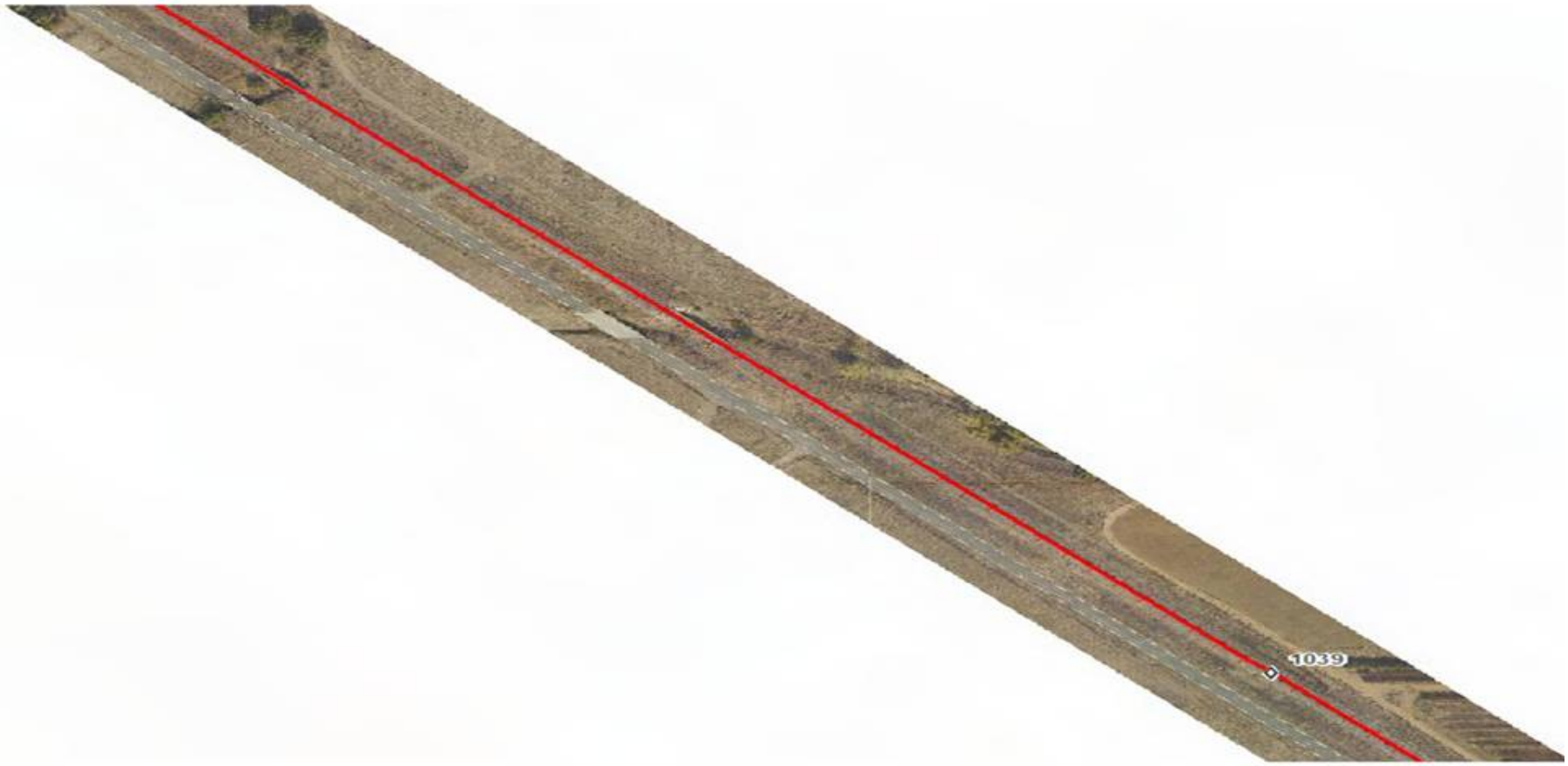


FIGURE 3-45
Aerial of LeGrand Alignment

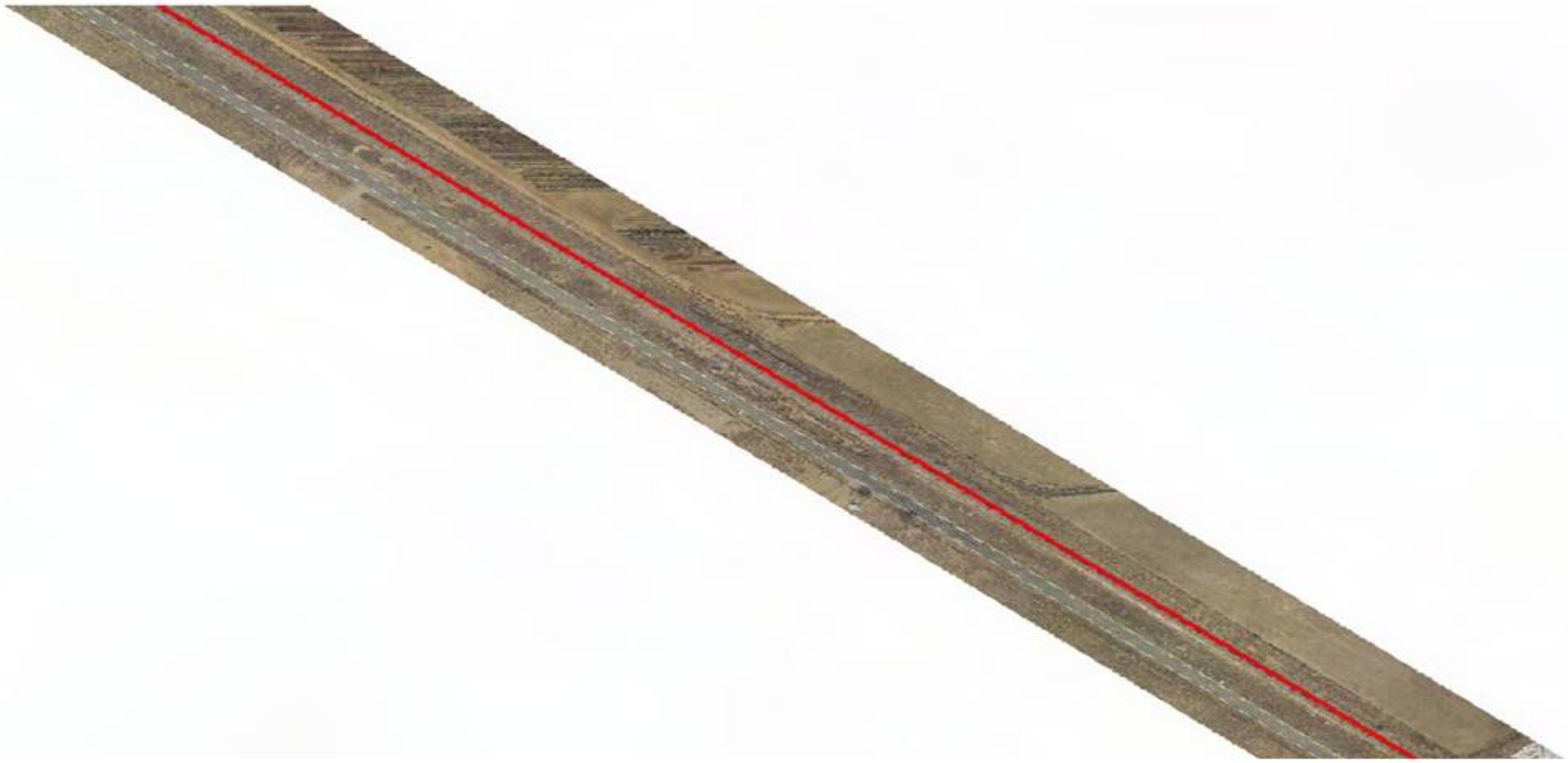


FIGURE 3-46
Aerial of LeGrand Alignment

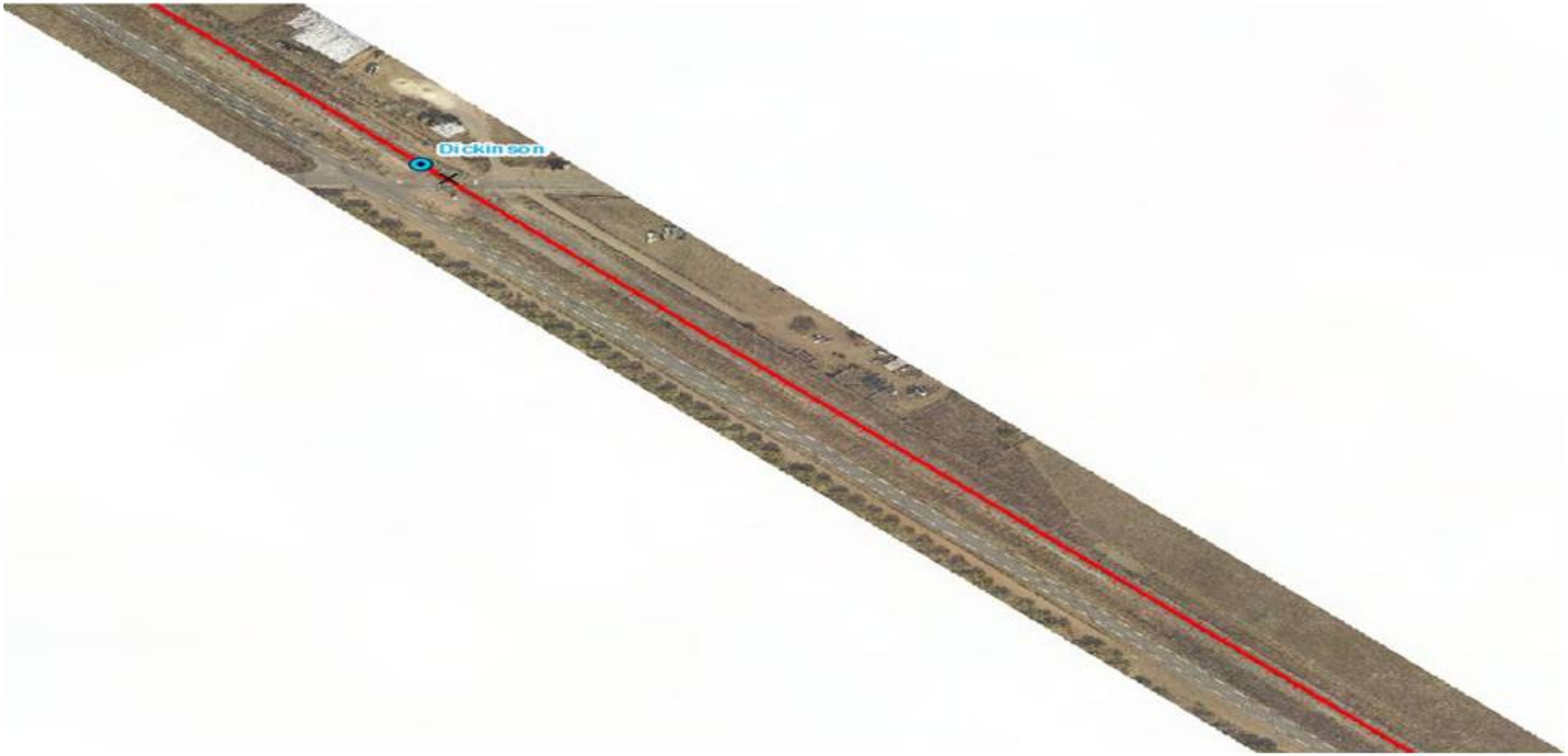


FIGURE 3-47
Aerial of LeGrand Alignment

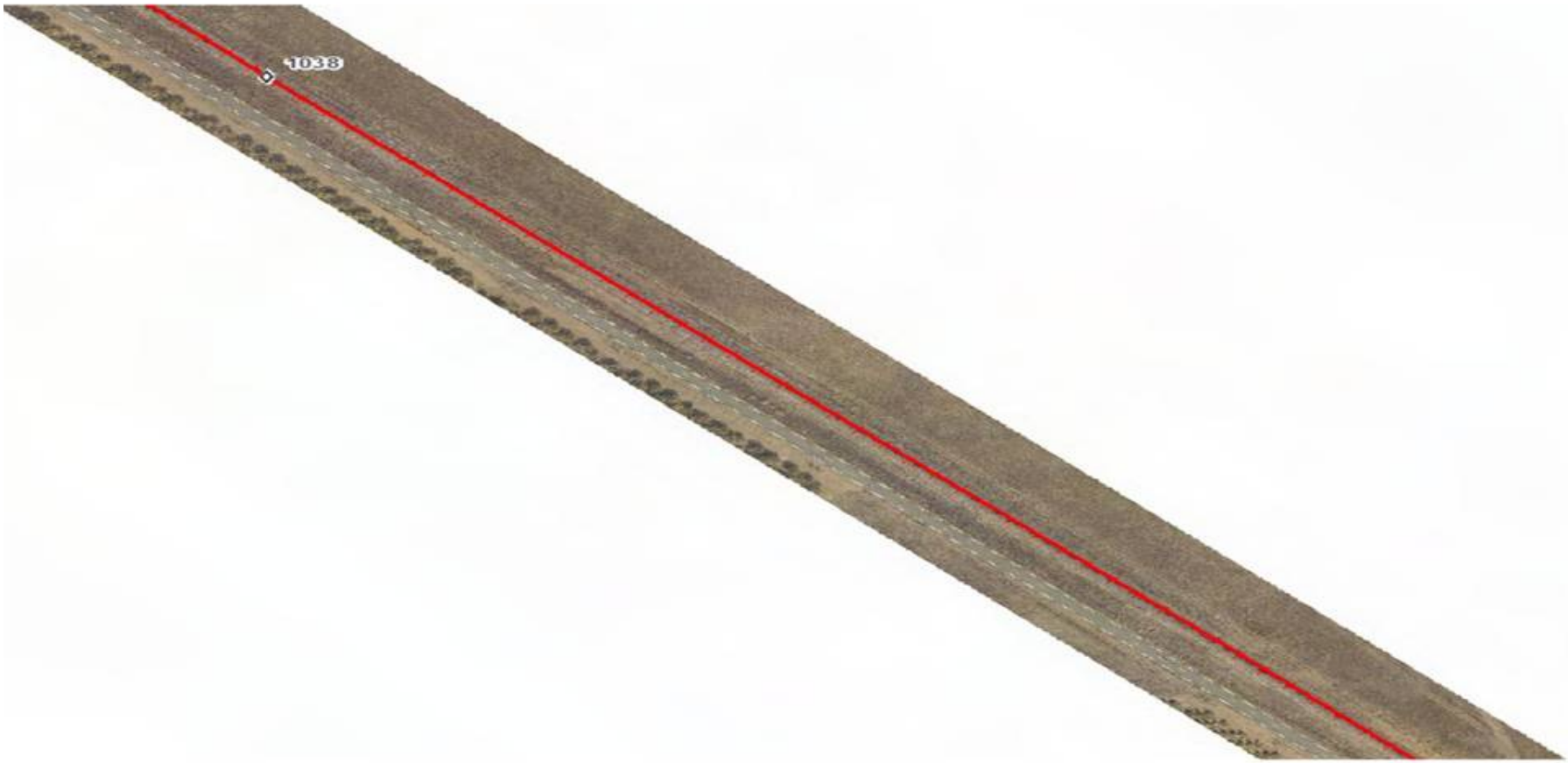


FIGURE 3-48
Aerial of LeGrand Alignment

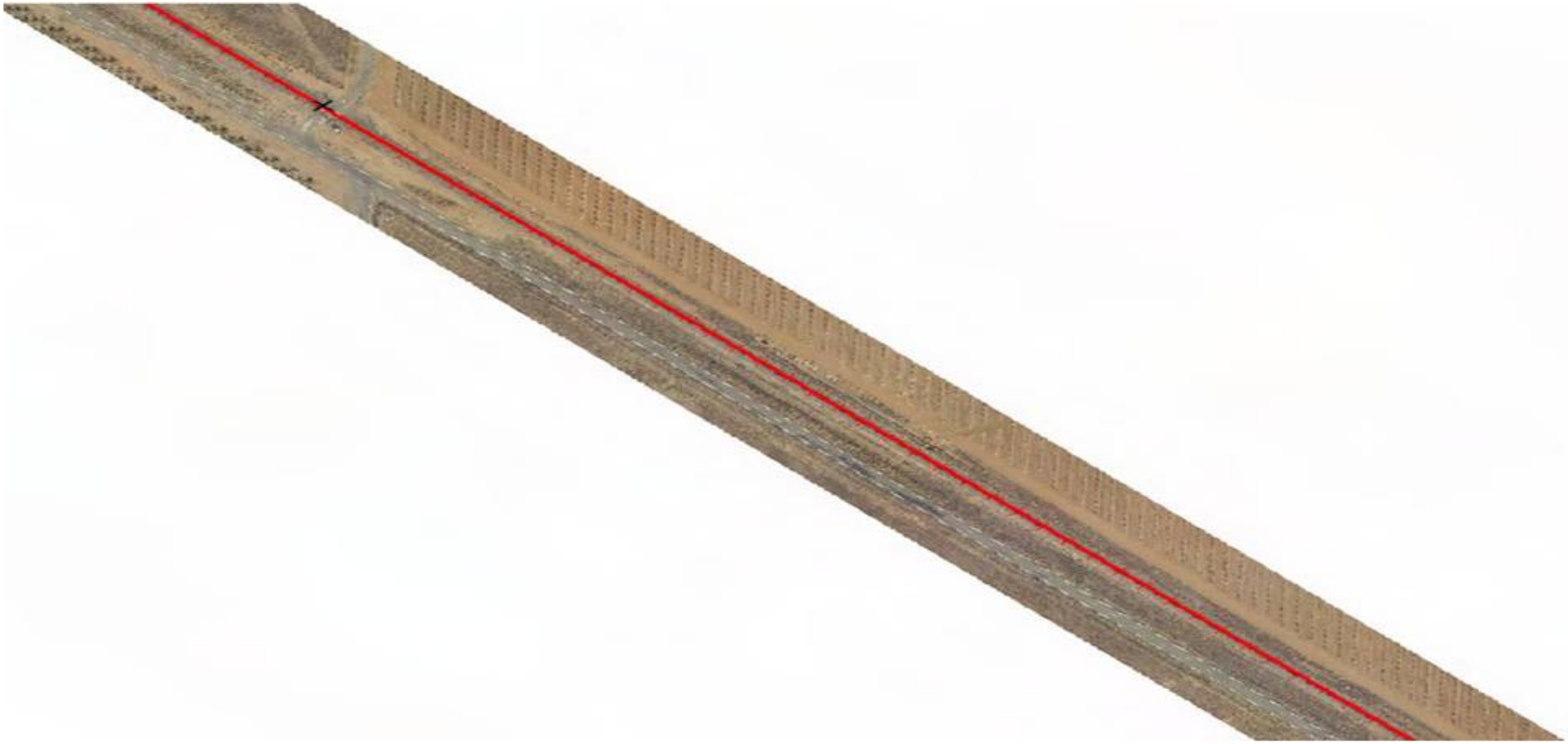


FIGURE 3-49
Aerial of LeGrand Alignment

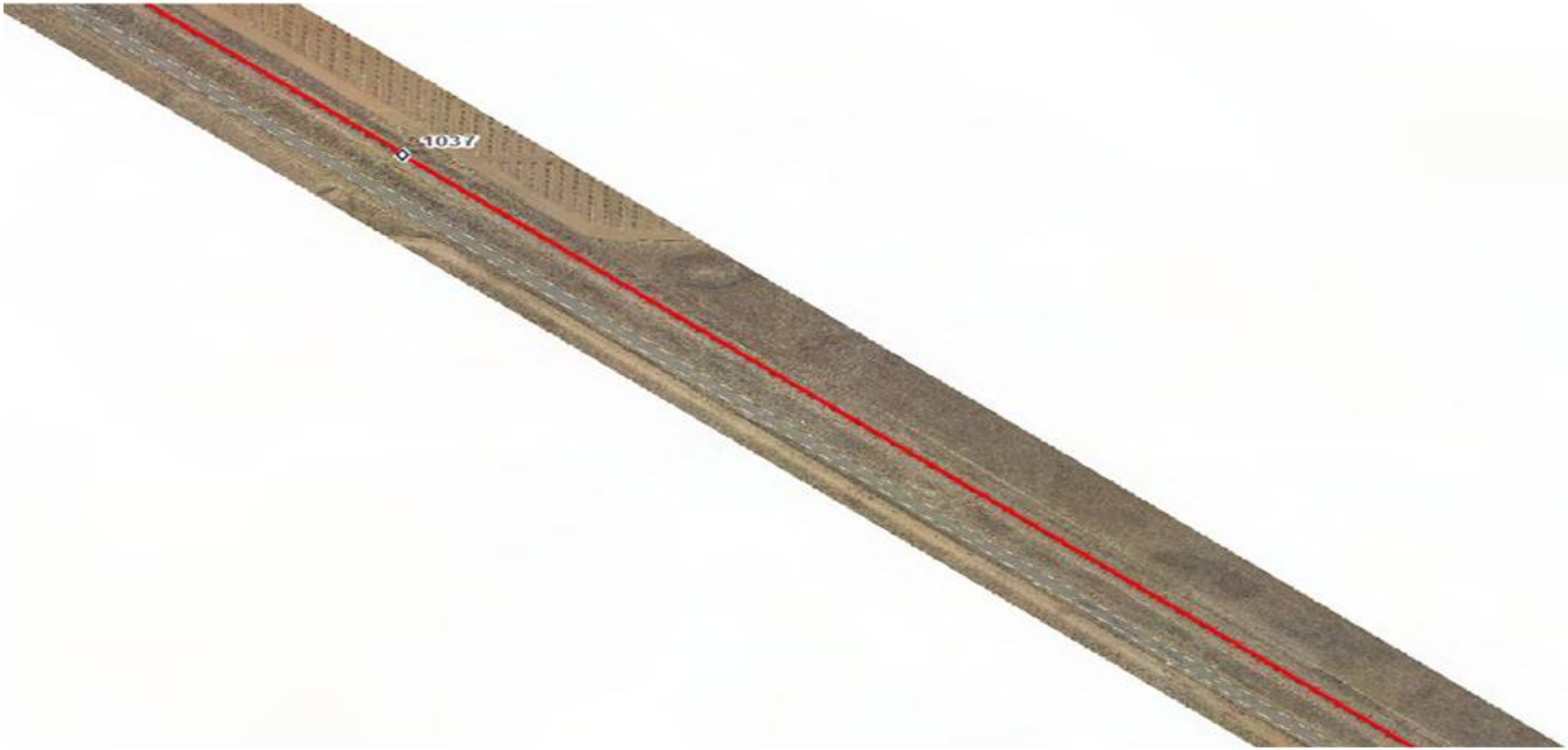


FIGURE 3-50
Aerial of LeGrand Alignment

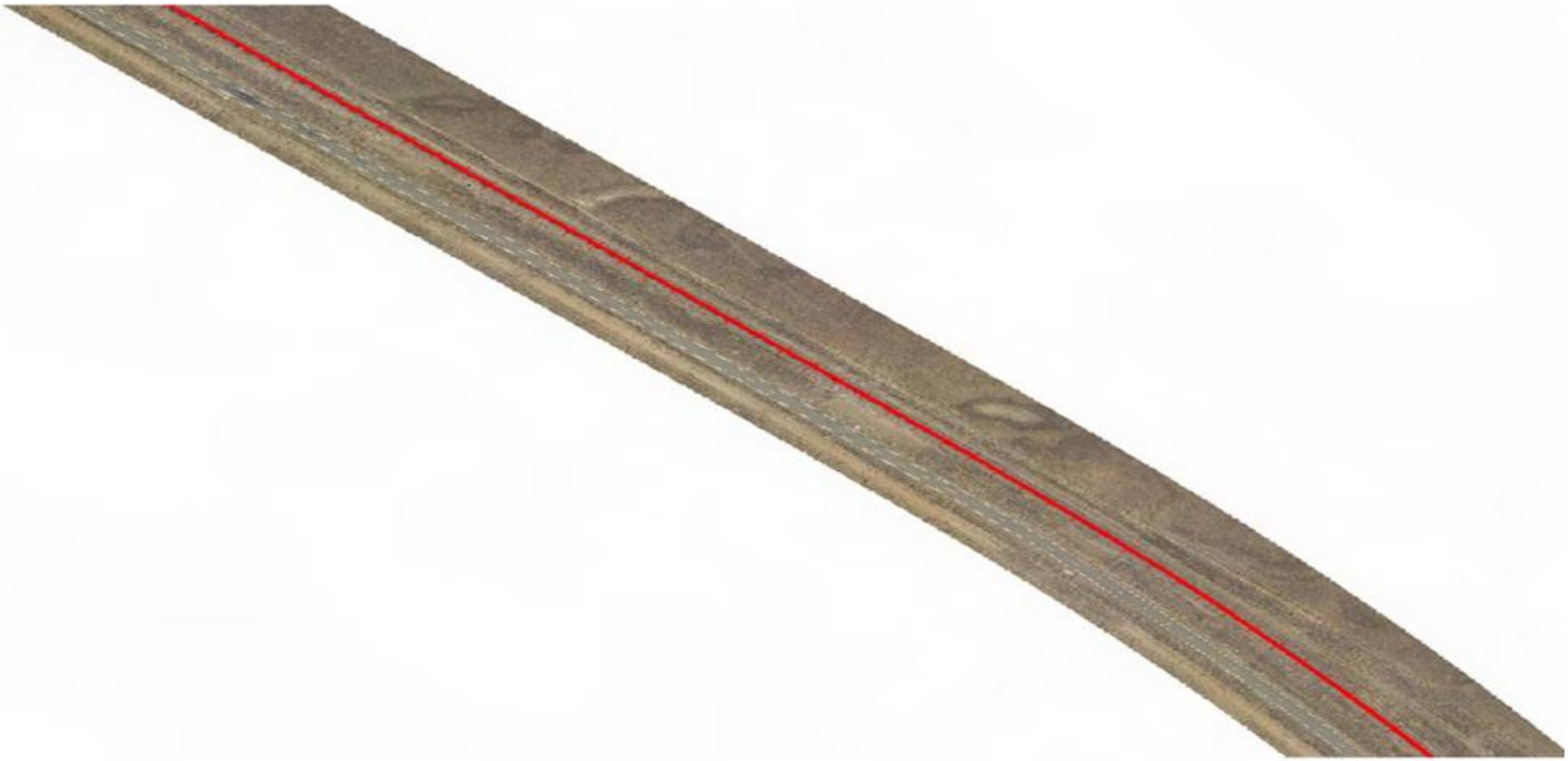
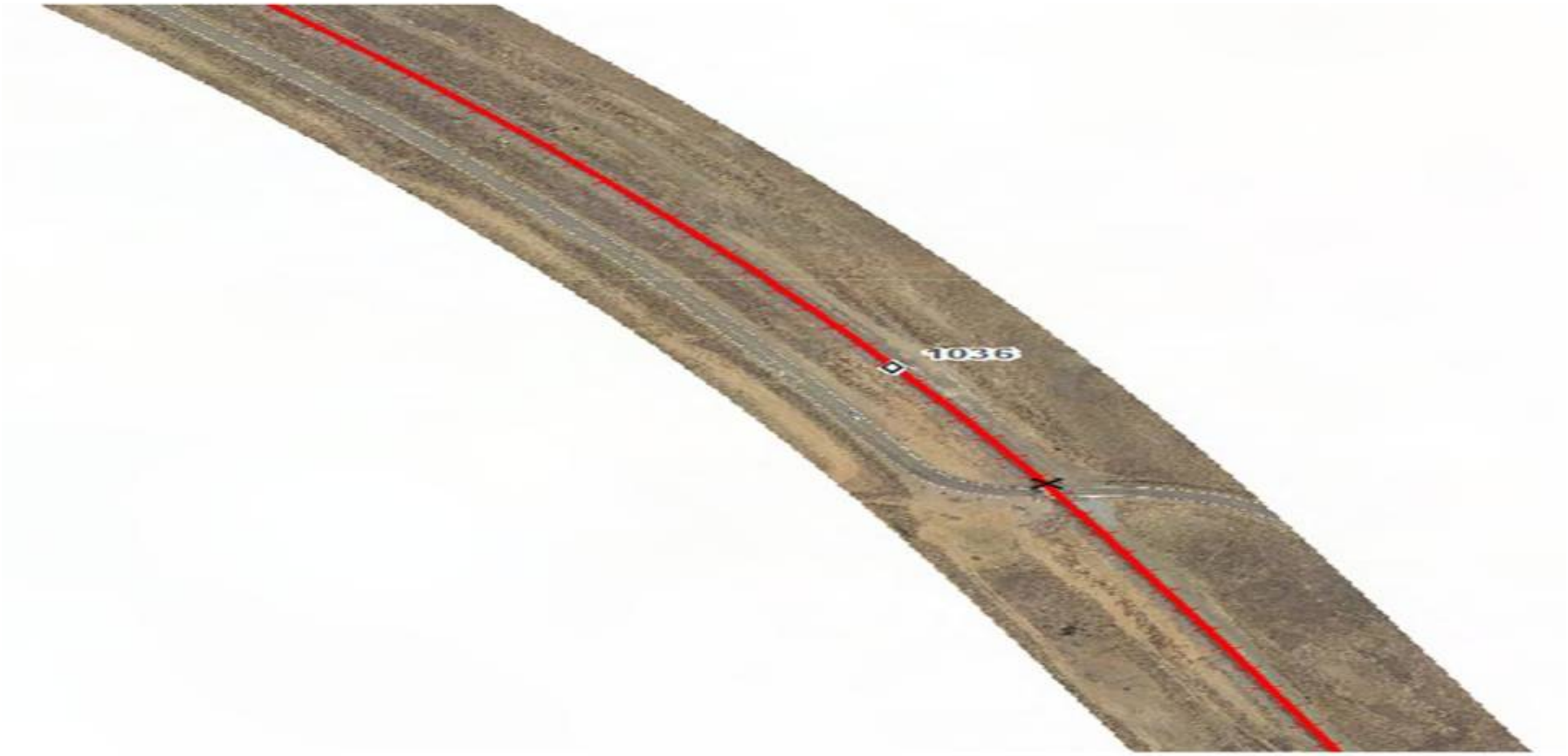


FIGURE 3-51
Aerial of LeGrand Alignment



APPENDIX 4

CULTURAL RESOURCES

HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	County	Route *(Local Agency)*	Kilo Posts *(Project prefix)*	Post Miles *(Project No.)*	Charge Unit *(Agreement)*	Expenditure Authorization *(Location)*
10	Merced	BNSF RR		1039.9 to 1056.4		Le Grand to Merced

(Both kilometer posts and post miles must be completed above. For Local Assistance projects off the highway system, use headers in italics)

Project Description: (*Insert project description below; refer reader to location and vicinity maps in HPSR)*

As part of its program to improve rail transportation services, the State of California Department of Transportation, Division of Rail, proposes an undertaking to upgrade the capacity of the Burlington Northern Santa Fe (BNSF) Railway's Central Valley mainline from Milepost (MP) 1039.9 to MP 1056.4, through the towns of Le Grand, Planada, and Merced in Merced County (see Attachment A, Maps 1, 2). The undertaking entails the construction of a second mainline track, upgrades to the existing mainline, installation of power crossovers and turnouts, extension of culverts, and the removal of existing turnouts. The undertaking's Area of Potential Effects (APE) is delineated to encompass the maximum extent of ground disturbances required by the project design (see Attachment A, Maps 3a-c).

2. AREA OF POTENTIAL EFFECTS

The proposed undertaking's APE measures approximately 16.5 miles long and between 100 and 250 feet wide, within which all construction activities and ground disturbances will occur. The project vicinity, location, and APE maps are included in this report as Maps 1-3 in Attachment A. The new track will be installed parallel to and within 25 feet of the existing BNSF mainline. The APE is confined entirely within the existing BNSF right-of-way, which lies in portions of Sections 19, 20, 25, 26, 27, 28, and 29, T7S R14E; Sections 27, 28, 29, 30, 34, and 35, T7S R15E; Sections 1, 2, 12, and 29, T8S R15E; and Sections 7, 17, 18, 20, and 21, T8S R16E, Mount Diablo Base Meridian.

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

(For the following, check the appropriate line, list names, dates, and locations and results of contacts, as appropriate. List organizations/persons contacted and attach correspondence and summarize verbal comments received as appropriate.)

√ Local Government *(Head of local government, Preservation Office / Planning Department)*

- When reached by telephone on February 12, 2009, City Planner Bill King with the City of Merced expressed no immediate cultural resources concerns over the APE, but was interested in reviewing the data gathered thus far before making an official comment. Oksana Newmen of the County of Merced Planning and Community Development Department suggested CRM TECH contact the Merced County Historical Society and the Central California Information Center at California State University, Stanislaus, to find information on historical resources in the area. She stated no other concerns about the proposed undertaking. (See Attachment E)

√ Native American Heritage Commission (NAHC)

- The NAHC responded by fax on February 24, 2009, stating that the sacred land files failed to indicate the presence of Native American cultural resources within the APE. The commission provided a list of five local Native American representatives to contact regarding the proposed undertaking. (See Attachment F)

√ Native American Tribes, Groups and Individuals

- Between February 25 and March 4, 2009, each of the five Native American representatives recommended by the NAHC was contacted in writing, e-mails, and by telephone. In a telephone conversation on February 25, 2009, Katherine Perez of the North Valley Yokuts Tribe informed CRM TECH that the tribe did not have any specific concerns regarding the APE, but requested to be notified

of any Native American cultural resource discoveries in the APE. In e-mails dated February 25 and 27, 2009, Edward Ketchum of the AmahMutsum Tribal Band requests that ethnographic information regarding the indigenous people of the Merced area be included in the cultural resources report. No responses have been received from any of the other three representatives. (See Attachment F)

√ Local Historical Society / Historic Preservation Group *(also if applicable, city archives, etc.)*

- An e-mail describing the proposed undertaking was sent to the Merced County Historical Society on February 12, 2009. The representative of the society, Sarah Lim, was contacted by telephone on February 16. She said she received the e-mail and would review the project before responding with comments. She was contacted through e-mail again on March 2, and has since responded with no concerns. (See Attachment E)

_ Public Information Meetings *(list locations, dates below and attach copies of notices)*

-

_ Other

-

4. SUMMARY OF IDENTIFICATION EFFORTS

√ National Register of Historic Places 1979-2002 and supplements
√ California Register of Historical Resources 1992 and supplemental information to date
√ California Historic Resources Inventory Updated to 2009
√ California Historical Landmarks 1997 and supplemental information to date
√ California Points of Historical Interest 1992 and supplemental information to date
_ State Historic Resources Commission
√ Caltrans Historic Highway Bridge Inventory 2001 and supplemental information to date
√ Archaeological Site Records [*List names of Institutions & date below*]

- The Central California Information Center (CCIC), California State University, Stanislaus; January 14, 2009.

√ Other sources consulted *[e.g., historical societies, city archives, etc. List names and dates below]*

- Published literature in local, regional, and railroad history
- U.S. Geological Survey: Merced, Calif., quadrangle, 1:31,680, 1917; Planada, Calif., quadrangle, 1:31,680, 1918; Plainsburg, Calif., quadrangle, 1:31,680, 1919; Le Grand, Calif., 7.5' quadrangle, 1:24,000, 1947; Plainsburg, Calif., 7.5' quadrangle, 1:24,000, 1947; Merced, Calif., 7.5' quadrangle, 1:24,000, 1948; Planada, Calif., 7.5' quadrangle, 1:24,000, 1948; Plainsburg, Calif., 7.5' quadrangle, 1:24,000, 1960; Le Grand, Calif., 7.5' quadrangle, 1:24,000, 1961; Merced, Calif., 7.5' quadrangle, 1:24,000, 1961; Planada, Calif., 7.5' quadrangle, 1:24,000, 1961.

√ **Results:** *(provide a brief summary of records search and research results, as well as inventory findings)*

- The CCIC reports that the BNSF railroad line within the APE has not been previously recorded or evaluated for significance. The Bradley Overhead (Bridge No. 39-0044; Site 24-000648), located within the APE at Milepost 1053.9, was previously recorded and evaluated by Caltrans and is slated for demolition in 2009 as part of a future grade-separation project (see Attachment D). During its evaluation, the bridge was considered to have good historical integrity and determined historically significant under Criteria A and C of the National Register of Historic Places. Two canals dating to the mid-20th century, known as the Fairfield and the Hartley/Doane (Sites 24-000606 and 24-000607), have been recorded along State Route 140 within close proximity to, but apparently outside the APE. Further discussion on the Bradley Overhead is presented in Attachment D.
- Historical sources indicate that the rail line at this location was originally built in 1895-1897 as part of the San Francisco and San Joaquin Valley (SF&SJV) Railroad, which was acquired by the Atchison, Topeka and Santa Fe Railroad (ATSF) in 1899 and became a part of the second transcontinental railway system to reach California. The County of Merced was established in 1855, and the City of Merced, the county seat, was founded in 1872, and incorporated in 1889. The nearby communities of Plainsburg, Planada, and Le Grand originated and grew around sidings along the railroad. They were

rural in character throughout the historic period and have remained so to the present day.

5. PROPERTIES IDENTIFIED

(Check the appropriate category, list properties, or refer reader to appropriate technical study attached, according to their National Register status. Provide, as appropriate, complete address, period and level of significance, criteria, map reference, and any existing state or local designation. Do not include properties that are not within the APE. Attach previous SHPO/THPO determinations, as applicable.)

_ **No cultural resources** in project APE.

_ *[Name]*, *[Indicate whether person is Caltrans or consultant architectural historian or archaeologist]*, who meets the Professionally Qualified Staff Standards in Section 106 Programmatic Agreement (Section 106 PA) Attachment 1 as a(n) *[Indicate applicable PQS level]*, has determined that the only other properties present within the APE meet the criteria for Section 106 PA Attachment 4 (**Properties Exempt from Evaluation**).

_ **Bridges listed as Category 5** in the Caltrans Historic Highway Bridge Inventory. Appropriate pages from the Caltrans Historic Bridge Inventory are attached.

-

_ Properties **previously determined not eligible** *(include date of determination)*:

-

√ **Caltrans** has **determined** the following properties are **not eligible**:

- 24-001877: a complex of four historic-period buildings within and immediately adjacent to the APE at BNSF MP 1041.6, including the former Le Grand Santa Fe depot moved to this location sometime after 1966.
- 24-001878: one fan palm, some concrete and brick fragments, and three concrete slab foundations found near the former location of the Le Grand station along the BNSF at MP 1041.5.
- 24-001879: two date palms, two fan palms, and three topless palms that appear to be a remnant landscape feature found at the former location of the Planada station at BNSF MP 1047.3.
- 24-001880: four date palms that appear to be a remnant landscape feature found at the former location of the Merced station at BNSF MP 1056.0.
- 24-001881: the segment of the BNSF Railway in the APE (MP 1039.9 to 1056.4) along with some associated features.

_ Caltrans has determined that the following **archaeological sites** shall be considered eligible for the National Register without conducting subsurface testing or surface collection within the APE, for which the **establishment of an ESA** will protect the sites from any potential effects, in accordance with Section 106 PA Stipulation VIII.C. See attached documentation.

-

_ Properties **previously listed or determined eligible** *(include date of listing or determination)*:

- 24-000648: the Bradley Overhead, Bridge No. 39-0044; February 1, 2001

_ Caltrans has determined the following properties are **eligible**:

-

_ **State-owned** historical buildings and structures **to be added to the Master List**, per PRC §5024(d):

-

_ **State-owned** buildings and structures that are **not eligible** for the National Register or as a State Historical Landmark:

HISTORIC PROPERTY SURVEY REPORT

6. LIST OF ATTACHED DOCUMENTATION

(Provide the author/date and peer reviewer/date of the technical report)

√ Project Vicinity, Location, and APE Maps (Attachment A)

_ California Historic Bridge Inventory sheet

√ Historical Resources Evaluation Report (HRER) (Attachment B)

√ Archaeological Survey Report (ASR) (Attachment C)

_ Archaeological Evaluation Report (CARIDAP, XPI, PII, PIII)

√ Other *(Specify below)*

- Correspondences with representatives of the local community and Native American groups (Attachments E, F)
- DPR 523 forms (Appendix 2 to Attachment B)

7. FINDINGS – HPSR to File

(Check all that apply. Do not transmit to SHPO/THPO; file copy to CCSO)

√ Not applicable.

_ **No properties requiring evaluation** are present within the project's APE.

_ Properties **previously determined not eligible** in consultation with the SHPO/THPO, or formally determined not eligible by the Keeper of the National Register are present within the project's APE. Copy of SHPO/THPO/Keeper correspondence is attached.

_ Properties **previously determined eligible** in consultation with the SHPO/THPO, or formally determined eligible by the Keeper of the National Register are present within the project's APE, but **will not be affected** by the undertaking. Copy of SHPO/THPO/Keeper correspondence is attached.

_ Caltrans has determined a Finding of **No Historic Properties Affected**, according to Section 106 PA Stipulation IX.A and 36 CFR 800.4(d)(1), is appropriate for this undertaking.

8. FINDINGS – HPSR to SHPO/THPO

(Check all that apply. Transmit to SHPO/THPO, copy to FHWA and CCSO)

_ Not applicable.

√ Caltrans has determined that there are properties evaluated as a result of the project that are **not eligible** for inclusion in the National Register within the project's APE. Under Section 106 PA Stipulation VIII.C, Caltrans requests SHPO/THPO's concurrence in this determination.

√ Caltrans has determined that there are properties evaluated as a result of the project that are **eligible** for inclusion in the National Register within the project's APE. Under Section 106 PA Stipulation VIII.C, Caltrans requests SHPO/THPO's concurrence in this determination.

√ Caltrans has determined a Finding of **No Historic Properties Affected**, according to Section 106 PA Stipulation IX.A and 36 CFR 800.4(d)(1), is appropriate for this undertaking.

_ Caltrans has determined a **Finding of No Adverse Effect with Standard Conditions - ESAs**, according to Section 106 PA Stipulation X.B(2) and 36 CFR 800.5(b), is appropriate for this undertaking. *(Include description of ESAs and enforcement measures below; attach ESA Action Plan as appropriate.)*

_ Caltrans has determined a **Finding of No Adverse Effect with Standard Conditions – Rehabilitation**, according to Section 106 PA Stipulation X.B(2) and 36 CFR 800.5(b), is

appropriate for this undertaking. *[Name]*, who meets the Professionally Qualified Staff Standards in Section 106 PA Attachment 1 as Principal Architectural Historian, and has the appropriate education and experience, has reviewed the rehabilitation documentation and determined that the rehabilitation meets the Secretary of the Interior's Standards for the Treatment of Historic Properties. *(Include description of rehabilitation below or indicate below the title of the HPSR attachment that contains the description.)*

Findings for State-Owned Properties

_ Not applicable.

_ Caltrans has determined that there are **state-owned buildings and structures** within the project limits that meet **National Register and/or the State Historical Landmarks eligibility criteria** and requests that SHPO add such resources to the Master List of Historical Resources pursuant to PRC §5024(d).

_ Caltrans has determined that this project will have **no effect/no adverse effect** to **state-owned archaeological sites, objects, districts, landscapes** within the project limits that meet National Register and/or State Historical Landmarks eligibility criteria and is providing notice and summary to SHPO pursuant to PRC §5024(f). *(Indicate reference to Standard Conditions – ESA above, or include description of proposed treatments, ESAs, protective covenants, etc., below or indicate below which HPSR attachment contains the description.)*

√ Caltrans has determined that this project will have **no effect** on **state-owned buildings and structures** within the project limits that meet National Register and/or State Historical Landmarks eligibility criteria and is providing notice and summary to SHPO pursuant to PRC §5024(f).

_ Caltrans has determined that this project will have n**o adverse effect** on **state-owned buildings and structures** within the project limits that meet National Register and/or State Historical Landmarks eligibility criteria. *[Name of Caltrans PQS]*, *[applicable PQS discipline/level]* has reviewed the documentation and determined that it meets the Secretary of the Interior's Standards for the Treatment of Historic Properties. Caltrans is providing notice and summary to SHPO pursuant to PRC §5024.5. *(Indicate reference to Standard Conditions – Rehabilitation above, or include description of proposed repairs, rehabilitation, ESAs, protective covenants, etc., below or indicate below, which HPSR attachment contains the description.)*

_ Caltrans has determined that this project will have an **adverse effect** to **state-owned archaeological sites, objects, districts, landscapes** within the project limits that meet National Register and/or State Historical Landmarks eligibility criteria and is providing notice and summary to SHPO pursuant to PRC §5024(f). *(Include below a description of alternatives considered and proposed mitigation measures, or indicate below which HPSR attachment contains the description.)*

_ Caltrans has determined that this project will have an **adverse effect** on **state-owned buildings and structures** within the project limits that meet National Register and/or State Historical Landmarks eligibility criteria. Caltrans is providing notice and summary to SHPO pursuant to PRC §5024.5. *(Include below a description of alternatives considered and proposed mitigation measures, or indicate below which HPSR attachment contains the description.)*

_ For **state-owned qualified historical buildings and properties** within the project limits, Caltrans has **applied the California Historical Building Code** (CHBC) to relevant sections of the current code(s) and/or standards and, if applicable, has consulted with the State Historical Building Safety Board (SHBSB) through its Executive Director pursuant to Health and Safety Code Section 18961 and its implementing regulations at California Code of Regulations Title 24 Part 8 Section8-103.2. [*Indicate below whether use of current code(s) and standards adversely affected character-defining features of the property and describe the alternative solutions under the CHBC, or indicate below which HPSR attachment contains the description. If applicable, attach copies of correspondence with the SHBSB or its Executive Director.)*

HISTORIC PROPERTY SURVEY REPORT

9. HPSR PREPARATION AND DEPARTMENT APPROVAL

Prepared by: *(sign on line)*

Consultant / discipline:	Bai "Tom" Tang, M.A., Architectural Historian	Date
Affiliation	CRM TECH, 1016 E. Cooley Drive, Suite A/B, Colton, CA 92324	

Reviewed for approval by: *(sign on line)*

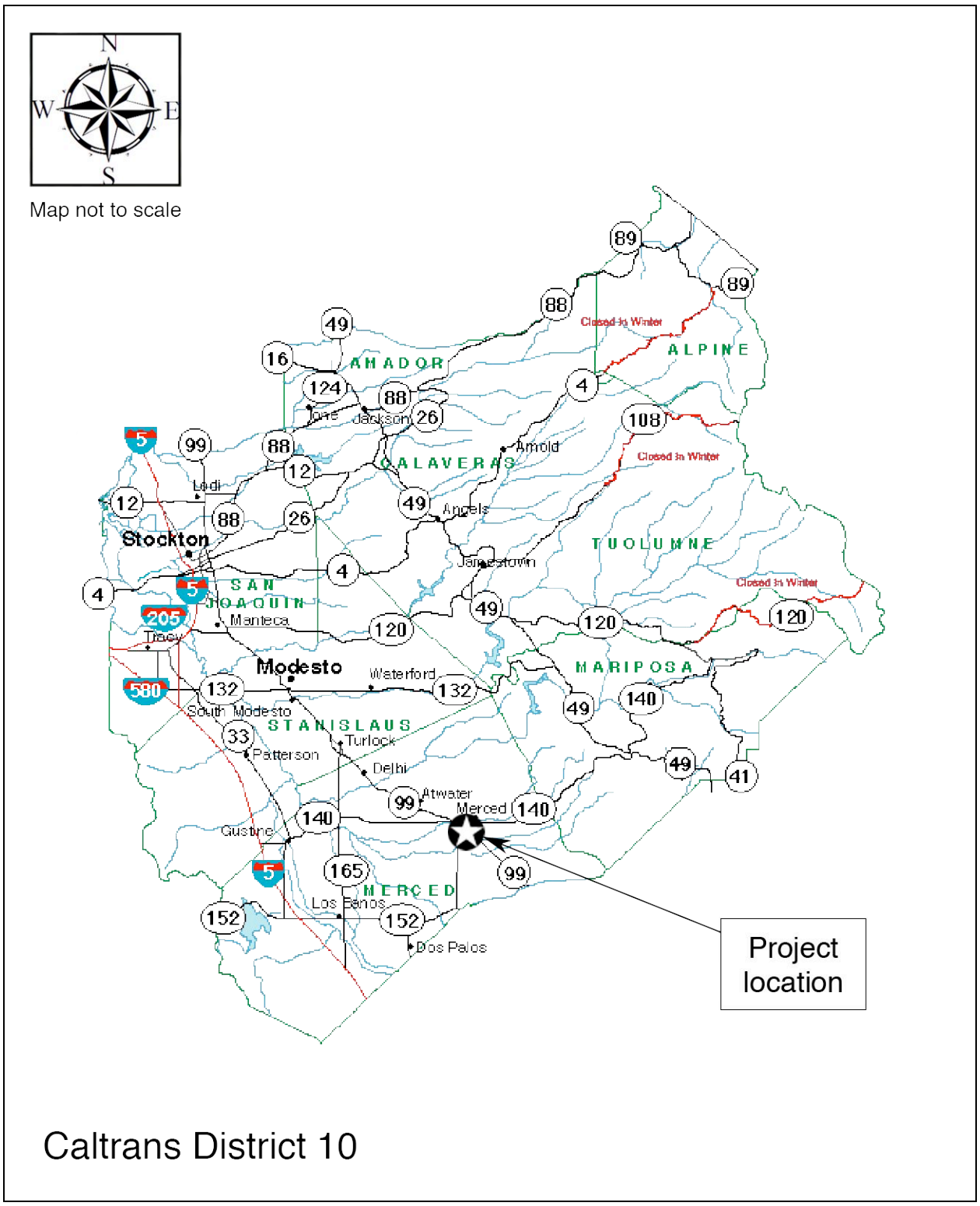
Division of Rail discipline/level:		Date

Approved by: *(sign on line)*

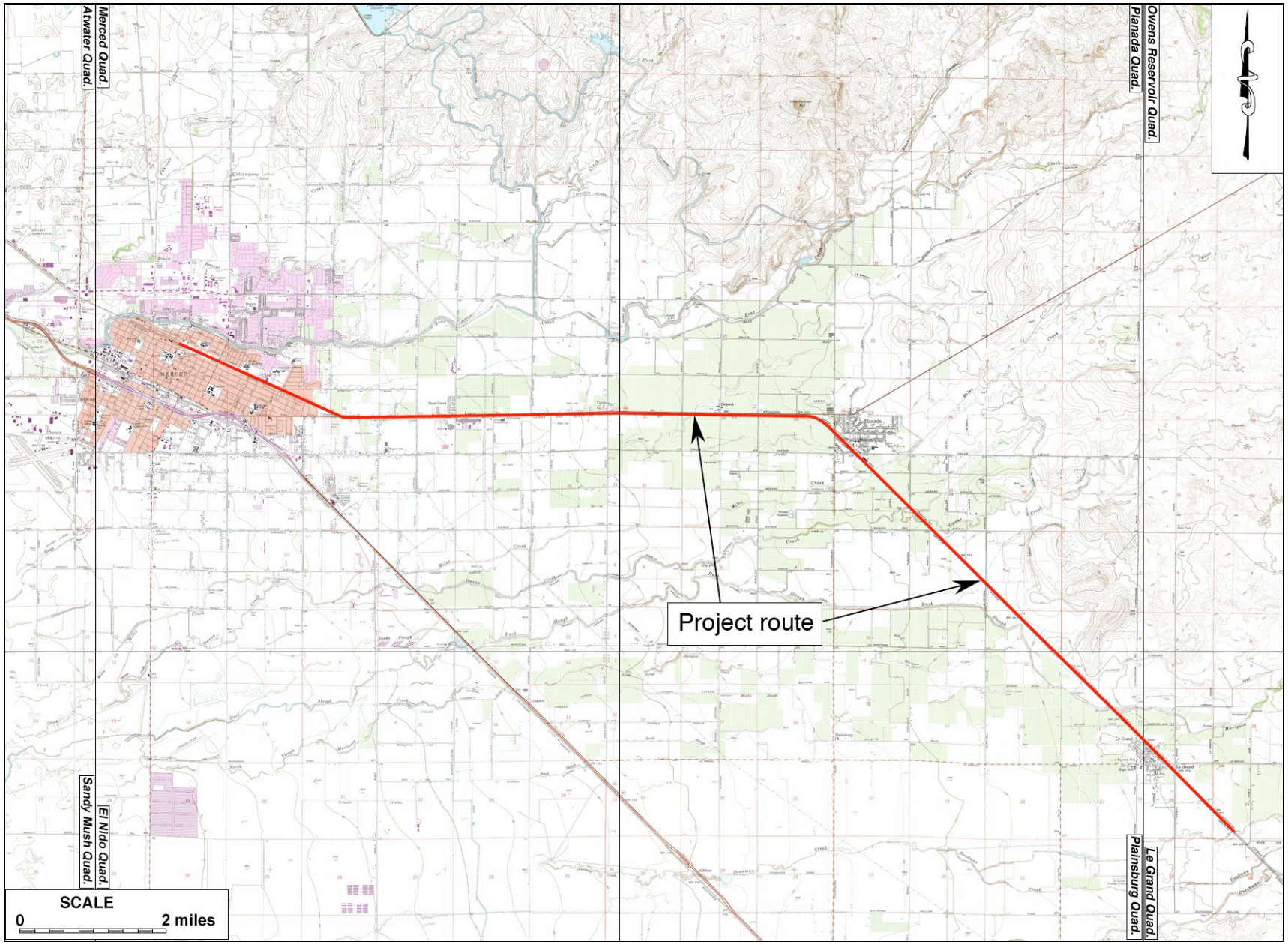
Division of Rail EBC:	Rick Deming	Date

ATTACHMENT A

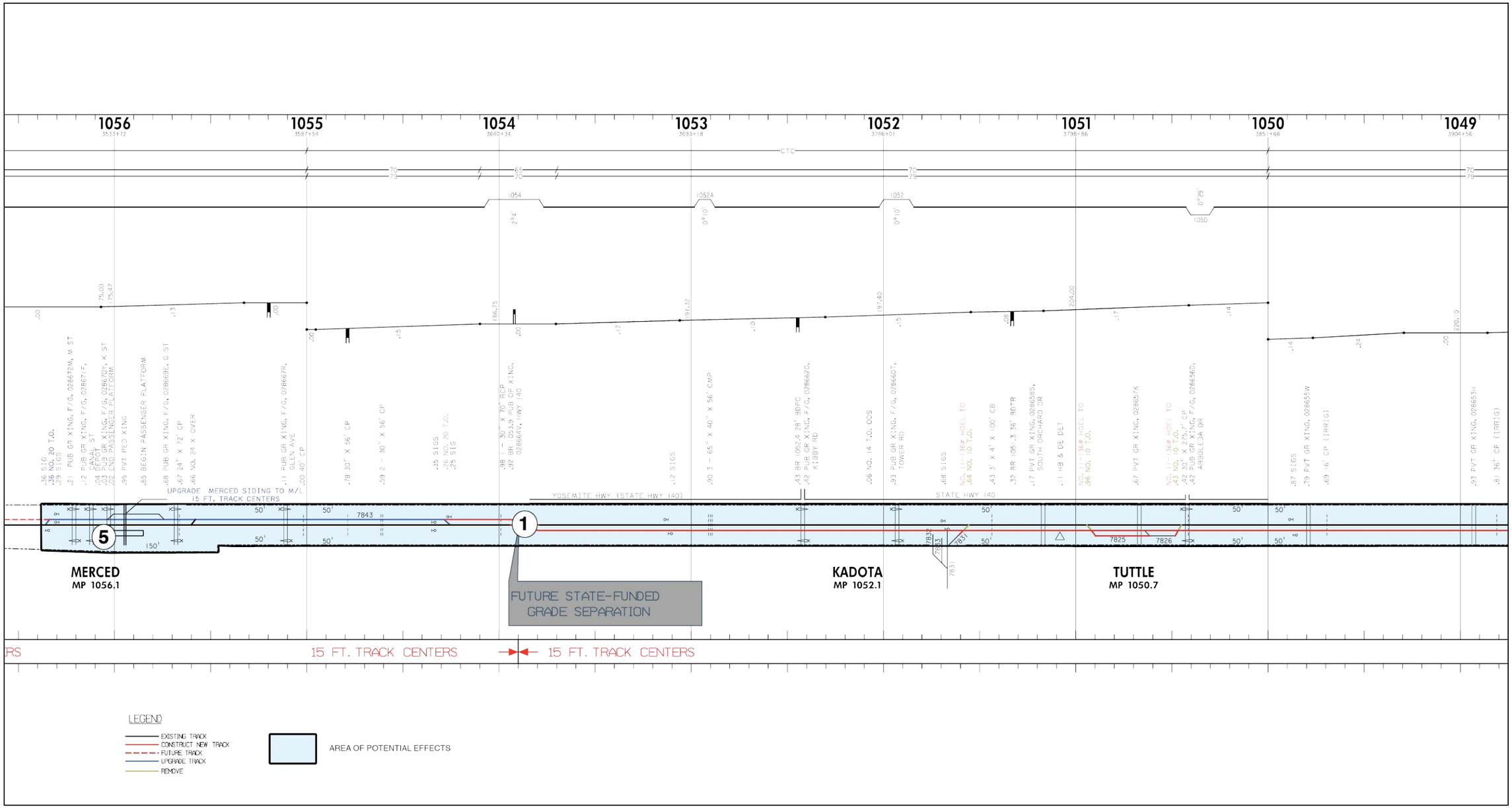
PROJECT MAPS



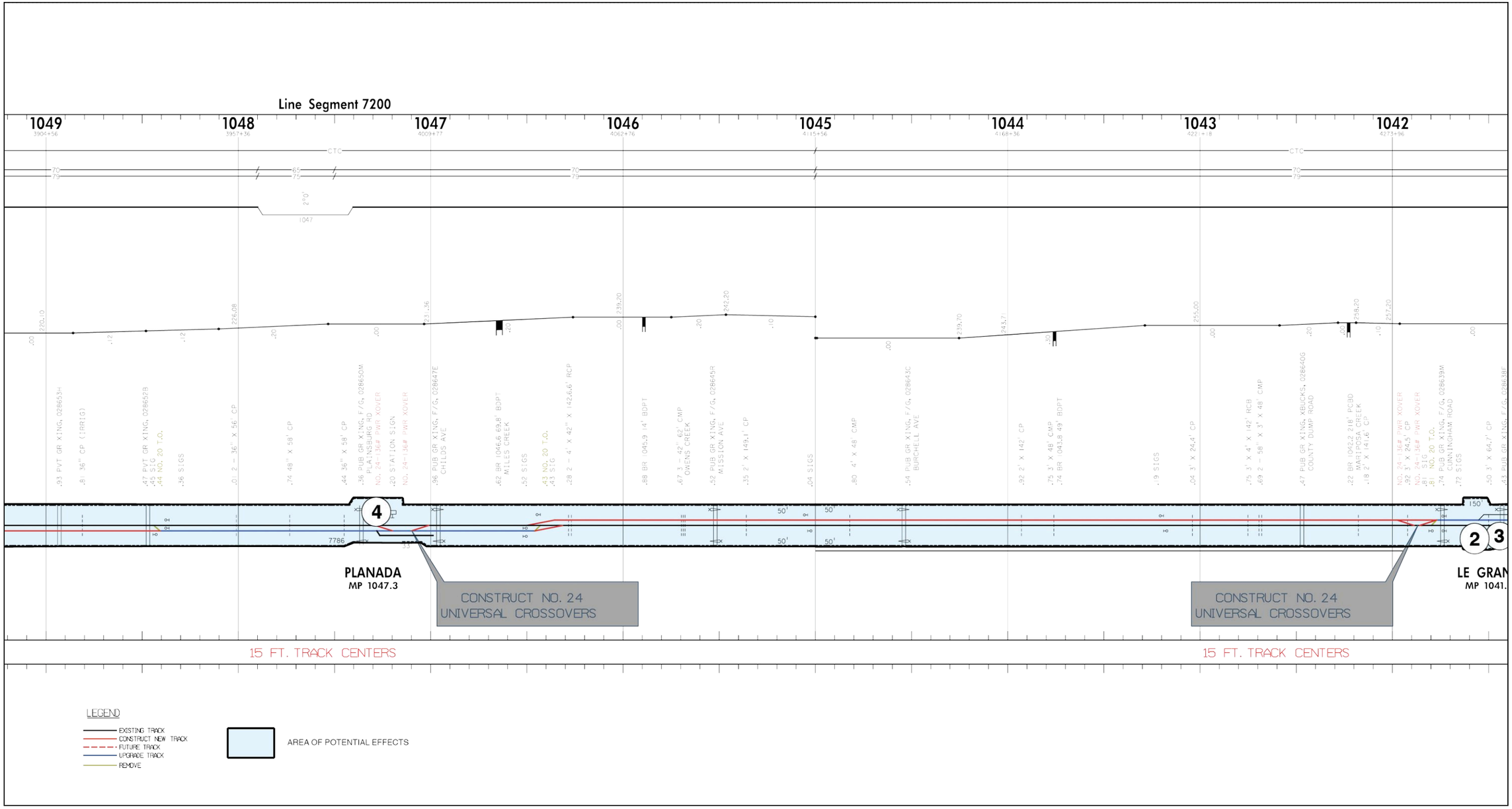
Map 1. Project vicinity.



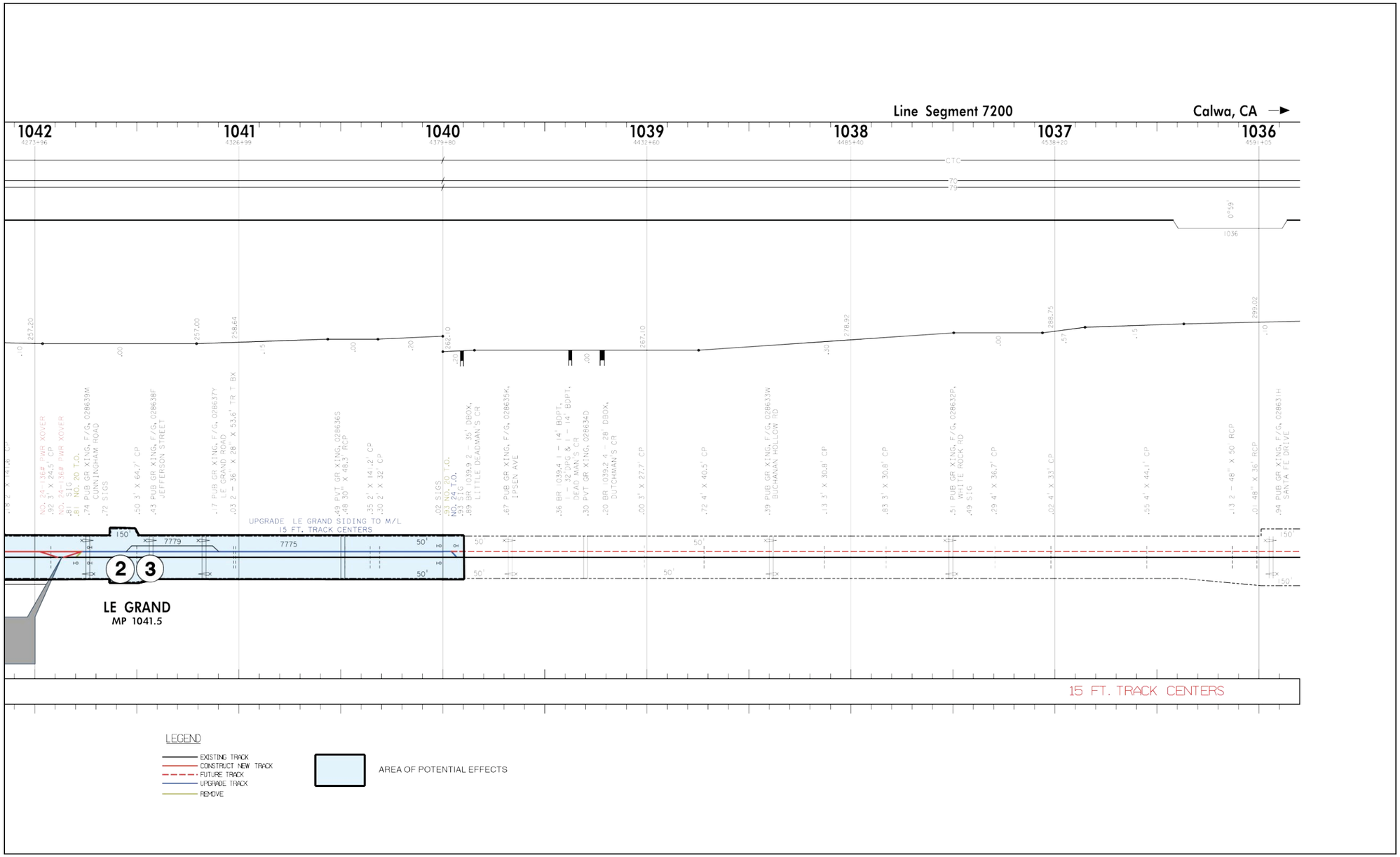
Map 2. Project location.



Map 3a. Area of Potential Effects (northwestern portion).



Map 3b. Area of Potential Effects (central portion).



Map 3c. Area of Potential Effects (southeastern portion).

ATTACHMENT B

HISTORICAL RESOURCE EVALUATION REPORT

ATTACHMENT B

HISTORICAL RESOURCES EVALUATION REPORT

Le Grand to Merced, CA Double Track Project
BNSF Railway Company Mainline Track (MP 1039.9 to MP 1056.4)
Merced County, California
Caltrans District 10

Prepared by:

Bai "Tom" Tang, M.A., Principal Investigator
Josh Smallwood, M.A., Historical Archaeologist
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Prepared for:

Rick Deming, Environmental Branch Chief
Caltrans Division of Rail-MS 74
1120 N. Street, Room 3400
Sacramento, CA 95814

CRM TECH Contract #2312
Approximately 16.5 linear miles
USGS Merced, Planada, Plainsburg, and Le Grand, Calif., 7.5' Quadrangles
T7S R14-15E, T8S R15-16E, MDBM
Sites 24-001877 to -001881

March 13, 2009

SUMMARY OF FINDINGS

The present Historical Resources Evaluation Report (HRER), as a component of the Historic Property Survey Report (HPSR), covers the Area of Potential Effects (APE) for a proposed project to upgrade the capacity of the Burlington Northern Santa Fe (BNSF) Railway's main line, from Milepost (MP) 1039.9 to MP 1056.4, through the towns of Le Grand, Planada, and Merced in Merced County, California. It is prepared in compliance with Section 106 of the National Historic Preservation Act, as implemented through federal regulations outlined in 36 CFR 800, and with the California Environmental Quality Act (CEQA).

The purpose of the report is to identify and, if possible, evaluate any historical resources that may exist within the APE, which is delineated to encompass the maximum extent of ground disturbances as required by the project design. The scope of the study included a standard records search, historical background research, consultation with the local government and historical society, and a systematic field survey. The field survey of the APE was conducted on February 2, 2009.

As a result of these research procedures, six historic-period sites were identified within or partially within the APE. One of these, 24-000648, represents the Bradley Overhead bridge (Bridge No. 39-0044), which was previously determined to be eligible for listing in the National Register of Historic Places. In light of that determination, the site meets Section 106 definition of a "historic property" and CEQA definition of a "historical resource." An MOA for its demolition and replacement as part of another project has been approved by the Federal Highway Administration and the California State Historic Preservation Officer, and has been accepted by the Advisory Council on Historic Preservation. Mitigation of project effects has been fulfilled with the extensive documentation of the historic structure in a Historic American Engineering Record. Therefore, the proposed undertaking will not have an unmitigated effect on the Bradley Overhead bridge.

Site 24-001877 encompasses a group of buildings located within and adjacent to the APE near Le Grand, including the 1896 Le Grand depot and three ancillary buildings. Due to the loss of historic integrity, it does not appear eligible for the National Register of Historic Places but appears eligible for the California Register of Historical Resources. Consequently, it does not qualify as a "historic property" under Section 106 but qualifies as a "historical resource" under CEQA. While the ancillary buildings at Site 24-001877 are located within the boundaries of the APE, none of these ancillary buildings is closely associated with, or contributes to, the historic significance of the former depot building, which was moved to its current location just outside the APE sometime after 1966. Furthermore, current project plans do not include the alteration, destruction, demolition, or removal of any of the buildings at Site 24-001877. Therefore, the proposed undertaking will have no effect on this "historical resource."

Among the other four sites in the APE, 24-001881 consists of the existing BNSF railroad line that runs through the APE, originally built in 1895-1897, and 24-001878 to -001880 consist of the former locations of the railroad stations at Le Grand, Planada, and Merced, exhibiting remnant features such as palm trees, concrete foundations, and station signs. None of these four sites appears eligible for listing in the National Register or the California Register, and thus none of them constitutes a "historic property" or a "historical resource."

Based on the research results summarized above, a finding of *No Historic Properties/Historical Resources Affected* appears to be appropriate for the proposed undertaking, pursuant to 36 CFR 800.4(d)(1) and Calif. PRC §21084.1. No further cultural resources studies are mandated by Section 106 and CEQA provisions on the APE unless project plans change to include potential impact on the former Le Grand depot building at Site 24-001877. It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.

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PROJECT DESCRIPTION

The present Historical Resources Evaluation Report (HRER), as a component of the Historic Property Survey Report (HPSR), covers the Area of Potential Effects (APE) for a proposed project to upgrade the capacity of the Burlington Northern Santa Fe (BNSF) Railway's main line, from Milepost (MP) 1039.9 to MP 1056.4, through the towns of Le Grand, Planada, and Merced in Merced County, California (see HPSR Attachment A, Maps 1, 2. It is prepared in compliance with Section 106 of the National Historic Preservation Act, as implemented through federal regulations outlined in 36 CFR 800, and with the California Environmental Quality Act (CEQA).

As currently proposed, the undertaking entails the construction of a second mainline track, upgrades to the existing mainline, installation of power crossovers and turnouts, extension of culverts, and the removal of existing turnouts. The undertaking's APE measures approximately 16.5 miles long and between 100 and 250 feet wide, within which all construction activities and ground disturbances will occur (see HPSR Attachment A, Maps 3a-c). The new track will be installed parallel to and within 15 feet of the existing BNSF mainline track. The APE is confined entirely within the existing BNSF right-of-way, which lies across portions of Sections 19, 20, 25, 26, 27, 28, and 29, T7S R14E; Sections 27, 28, 29, 30, 34, and 35, T7S R15E; Sections 1, 2, 12, and 29, T8S R15E; and Sections 7, 17, 18, 20, and 21, T8S R16E, Mount Diablo Base Meridian (see HPSR Attachment A, Maps 2).

The purpose of the report is to identify and, if possible, evaluate any historical resources that may exist within the APE. The scope of the study included a standard records search, historical background research, consultation with the local government and historical society, and a systematic field survey.

RESEARCH METHODS

RECORDS SEARCH

In January 2009, Robin Hards, Assistant Research Technician at the Central California Information Center (CCIC) at California State University, Stanislaus, performed the historical/archaeological resources records search on the APE. During the records search, the following sources were consulted for a complete inventory of previously identified cultural resources in or near the APE and existing cultural resources reports pertaining to the vicinity:

- National Register of Historic Places;
- California Register of Historical Resources;
- California Historical Landmarks (1996 and updates);
- California Points of Historical Interest (May 1992 and updates);
- Historic Property Data File;
- Archaeological Determinations of Eligibility (2008);
- California Historical Resource Inventory.

The results of the records search indicate that the BNSF railroad line within the APE has not been previously recorded or evaluated for significance. However, three historic-period sites, 24-000606, -000607, and -000648, were previously recorded in or near the APE. Sites 24-000606 and -000607 represent two canals dating to the mid-20th century, known as the Fairfield and the Hartley/Doane, both recorded along State Route 140 in close proximity to the APE. Site 24-000648 represents a historic-period highway bridge across the APE, known as Bradley Overhead (Bridge No. 39-0044), which was evaluated by Caltrans in 2001 and is slated for demolition in 2009 as part of a future grade-separation project (Brewer 2001). During the 2001 evaluation, the bridge was considered to have good historical integrity and determined historically significant under Criteria A and C of the National Register of Historic Places (*ibid.*:4). Further discussion on the Bradley Overhead and the Fairfield and the Hartley/Doane Canals as they pertain to the current undertaking is presented in the sections below.

Within a one-mile radius of the APE, numerous historic-period buildings and structures have been previously recorded in the downtown portion of Merced, including properties identified as eligible for the National Register of Historic Places. Many of these buildings were located within the boundaries of designated historic districts. The types of buildings and built-environment features recorded within these districts are many, including commercial, educational, governmental, industrial, medical, residential, religious, and social buildings as well as cemeteries. They generally span in age from the 1870s to the 1940s. None of these buildings or historic districts were located within close proximity of the APE, and thus they require no further consideration during this study. The presence of so many historic buildings and districts in the Merced area, however, attests to the development and prosperity of the town since the late 19th century.

HISTORICAL BACKGROUND RESEARCH

In conjunction with the records search, CRM TECH principal investigator Bai "Tom" Tang and historical archaeologist Josh Smallwood (see Appendix 1 for qualifications) conducted a general historical background research on the basis of historic maps of the project vicinity and published literature in local/regional history and the history of the Atchison, Topeka and Santa Fe Railway (ATSF), forerunner of BNSF in California. Among maps consulted were the U.S. General Land Office's (GLO) land survey plat maps produced in the mid-19th century and the U.S. Geological Survey's (USGS) topographic maps dated 1917-1919, 1947-1948, and 1960-1961. These maps are collected at the Science Library of the University of California, Riverside, and the U.S. Bureau of Land Management located in Sacramento.

In addition to the sources listed above, on-line publications on the history of Merced County available through the Merced County Historical Society web page and online excerpts of *History of Merced County, California*, by John Outcalt (1925; see Hooper and Harris n.d.) were consulted during this phase of the research. Findings from these sources are presented in the "Historical Overview" section below, as well as in site record forms generated during this study (see Appendix 2).

CONSULTATION WITH LOCAL COMMUNITY

As part of the study, the planning departments of Merced County and the City of Merced were contacted to identify any cultural resources of local historical interest that may be

present within or adjacent to the APE, and to solicit from the local community any other comments regarding cultural resources issues (see HPSR Attachment E). When reached by telephone on February 12, 2009, City Planner Bill King expressed no immediate cultural resources concerns over the APE, but was interested in reviewing the data gathered thus far before making an official comment.

Oksana Newmen of the County of Merced Planning and Community Development Department suggested CRM TECH contact the Merced County Historical Society and the Central California Information Center at CSU, Stanislaus, to find information on historical resources in the area. She stated no other concerns about the proposed undertaking (see HPSR Attachment E).

A written request for similar information was also sent to the Merced County Historical Society (see HPSR Attachment E), the nearest local historical organization identified by the American Association for State and Local History and the California Historical Society. An e-mail describing the proposed undertaking was sent to the society on February 12, 2009. Society representative Sarah Lim was contacted by telephone on February 16. She said she received the e-mail and would review the project before responding with comments. She was contacted through e-mail again on March 2, and has since responded with no concerns.

FIELD METHODS

On February 2, 2009, CRM TECH historical archaeologist/architectural historian Josh Smallwood, and prehistoric archaeologist Daniel Ballester performed the historical and archaeological field survey of the APE (see Appendix 1 for qualifications). As mentioned above, the APE is located entirely within the existing right-of-way of the BNSF Railway, and in light of the extensive disturbances in the past, such as grading, is considered relatively low in sensitivity for archaeological resources. Therefore, the majority of the APE was surveyed at a reconnaissance level from a motor vehicle.

While driving along roads adjacent to the existing BNSF main track, Smallwood and Ballester inspected both sides of the track for any areas that may contain evidence of human activities dating to the prehistoric or historic periods (i.e., 50 years ago or older). Potentially sensitive areas and areas that were inaccessible by vehicle were inspected by walking along the route. The survey covered all areas where construction activities and/or other ground disturbances may occur during the project.

Smallwood and Ballester completed field recording procedures on buildings and built-environment features that appeared to be more than 45 years old. In order to facilitate the proper recordation and evaluation of all buildings and built-environment features in the APE, Smallwood and Ballester made detailed notations and preliminary photo-documentation of their characteristics and current conditions. The information from these procedures was used to compile DPR 523 forms to include the resources into the California Historical Resources Inventory (see Appendix 2).

HISTORICAL OVERVIEW

EARLY EXPLORATION AND SETTLEMENT IN THE SPANISH/MEXICAN PERIODS

The first European visitor to Merced County was the Spanish soldier and explorer Gabriel Moraga in 1806, leading an expedition of 25 men into the northern part of the central valley on the trail of some Indian horse-thieves. Along the way, parched from a long and arduous journey across the barren valley floor, he came across a refreshing stream and named it "the River of Our Lady of Mercy," later condensed to "Merced" (Hooper and Harris n.d.). During numerous subsequent journeys across the valley east of the Coast Range, Moraga searched for suitable sites to establish missions and presidios under direction of Governor José Joaquín de Arrillaga. A possible site was chosen at a location along the Merced River near the present town of Merced, but this plan never came to fruition.

In 1822, the newly independent Mexican government officially took over Alta California from the Spanish. Internal problems hindered much exploration of the San Joaquin Valley, except for excursions to recover stock and punish Indians. Still, plans for missions and presidios in the central valley were never completed, and no settlement of the Merced area occurred under the Mexican regime (Hooper and Harris n.d.). The American trapper, Jedediah Smith, traveled through the northern San Joaquin Valley, possibly crossing the Merced River in 1827 as he meandered his way out of California en route to Salt Lake City, fur-trapping and trading with the Indians along the way (*ibid*.). The routes established by Smith and other American explorers in Alta California near the end of Mexican rule paved the path for early settlers after American annexation of the territory.

GROWTH AND URBANIZATION SINCE THE AMERICAN ANNEXATION

After the American annexation of Alta California in 1848, Americans slowly began to migrate from the eastern states and settle in the northern San Joaquin Valley, some in search of gold in the nearby hills, and others interested in farming and ranching. Grain and cattle were the primary sources of industry through the 1870s and the population grew slowly during that time, as the whole nation was in a state of recession and California had little else but open land to offer. Still, by 1855 there was enough of a population to carve out an area from Mariposa County to create Merced County. Most of the settlement occurred along the Merced River where some of the first irrigation systems were put in place by the Crocker-Huffman Land and Water Company. Other canal systems were constructed through the 1870s, later to be bought up by Crocker-Huffman, who in turn was absorbed by the Merced Irrigation District in the 1920s (Hooper and Harris n.d.).

The completion of the San Joaquin Valley Railroad (SJVRR) Company's railway through Merced County sparked the founding of the town of Merced in January and February of 1872. The lots were sold fast, and construction of numerous commercial buildings near the train stop began immediately and rapidly. In the course of three months, the town boasted a fine four-story hotel of 175 rooms and claimed to be the most prosperous and flourishing town between Stockton and Los Angeles (Hooper and Harris n.d.). The SJVRR line was purchased the next year by the Southern Pacific Railroad Company, whose freight charges and passenger fares were too exorbitant for most farmers and severely hampered the prosperity of the agricultural region. But this would all change with the coming of a second transcontinental railroad to California, as rate wars between the railroad companies

would provide a perfect opportunity for many Easterners to move westward into California.

A second railway through Merced County, the San Francisco and San Joaquin Valley (SF&SJV) Railway, was constructed from Stockton to Bakersfield in 1895-1897 (Gustafson and Serpico 1996:159). The line was acquired by the Atchison, Topeka, and Santa Fe Railway (ATSF) in 1899 and became a part of the ATSF's first line to reach the port of San Francisco. The ATSF line, now the Burlington Northern Santa Fe Railway, has followed the same route through the APE since the late 1890s (USGS 1917; 1918; 1919; 1947a; 1947b; 1948a; 1948b). It was during this time, and as a result of the construction of the railway, that the communities of Le Grand and Planada came into being. Originally sidings along the railroad, these two communities have remained largely rural in character throughout the historic period and to the present day (*ibid.*).

In the early days, grains such as wheat, barley, and rye were the principal crop of the region, but the advent of the railroad through the valley made it possible to cultivate and transport fruits and vegetables as well (Hooper and Harris n.d.). Thus, orchards and fields of sweet potatoes began to crop up throughout the region in the 1880s (*ibid.*). Farming and cattle-raising remained a prevalent part of the economy throughout the late-19th century and majority of the 20th century.

The post-WWII era brought prosperity to the American economy and there was a population explosion throughout the urban areas of central California, assuming a dominating influence in local economical growth. In most recent years, the large stretches of farmlands in and near the City of Merced have become prime targets for tract home developers, which has had a major impact on the area's population. The estimated population of the county in 2006 was 245,000, an increase of nearly 20% since 2000, and up from 90,000 in 1960 (Census Bureau n.d.; Forstall n.d.).

THE ATCHISON, TOPEKA, AND SANTA FE RAILWAY IN THE APE

As mentioned above, the rail line through the APE was originally built in 1895-1897 as part of the SF&SJV, and has served as a part of the ATSF (now BNSF) mainline in the Central Valley since 1899. The ATSF "invasion" spelled the end of the Southern Pacific Railway Company's virtual monopoly on modern transportation in California, which left profound and far-reaching impacts on the political, economic, and social life of the state. Most directly, the coming of a competing rail system served as a major boost to the growth of the Central Valley and the entire state.

With the dawn of the automobile age, the trucking industry, and ultimately the rise of civilian airlines, the once powerful railroad companies fell rapidly from their dominant position in long-distance transportation in the U.S. during the first half of the 20th century. In particular, passenger traffic increasingly shunned the railroads in the post-WWII era, effectively relegating the glamorous passenger trains to the status of relics by the 1960s-1970s.

The 1896 Le Grand depot, one of the last survivors among them, was moved from its original location in 1966 (Gustafson and Serpico 1996:169). Today, it stands along the tracks adjacent to the APE, one-tenth of a mile to the northwest of its original location. One

by one, the railroad depots along this stretch of the ATSF line were closed and removed. Although the rail line remains active today, the demise of the depots, once the pride of the communities they served, marked unmistakably the end of the golden age for the steel rails.

As stated above, the records search results indicate that three historic-period sites, 24-000606 (Fairfield Canal), 24-000607 (Hartley/Doane Canal), and 24-000648 (Bradley Overhead), were previously recorded in or near the APE. These three sites were re-visited during the field survey.

The Bradley Overhead (Bridge No. 39-0044), located within the APE at Milepost 1053.9, is a 1931-vintage highway bridge that was previously determined to be eligible for listing in the National Register of Historic Places (Brewer 2001:4). The bridge has been extensively documented since its first recordation in 2001, including as the subject of a Historic American Engineering Record (Brewer 2001; Brewer et al. 2008). Pertinent documentation on the bridge is attached to the HPSR (see HPSR Attachment D).

At the locations where the recorded courses of Sites 24-000606 and -000607 intersect the APE, no surface manifestation of the Fairfield Canal or the Hartley/Doane Canal was found within the boundaries of the APE. In both cases, the proposed undertaking has no potential to affect the historic integrity or significance of the canals. Therefore, the Fairfield Canal and the Hartley/Doane Canal are excluded from the APE pursuant to current Caltrans policies (JRP and Caltrans 2000:1).

As a result of the field survey, five previously unrecorded historic-period sites, including the BNSF railroad line, a group of buildings, and three locations of former railroad stations, were recorded within or partially within the APE (see Appendix 2). The segment of the existing BNSF railroad line that runs through the APE has since been designated by the CCIC as Site 24-001881. The group of buildings, designated as Site 24-001877, include the relocated former Le Grand railroad depot and three ancillary buildings. The three former station locations, designated as Sites 24-001878, -001879, and -001880, exhibit remnant features such as palm trees, concrete foundations, and station signs that appear to be more than 50 years old. The five newly recorded sites are discussed in further detail in the attached DPR 523 forms (see Appendix 2).

No other historic-period buildings, structures, or landscape features, were observed anywhere in the APE, nor were any archaeological materials known or appearing to be more than 50 years of age, or that would otherwise be of any historical or archaeological interest. Likewise, no historic districts, locally designated sites, or properties of traditional cultural value were encountered within or adjacent to the APE.

FINDINGS AND CONCLUSIONS

FINDINGS

- Properties listed in the National Register: None.

- Properties previously determined eligible for the National Register:

Name	*Address/Location*	*Community*	*OHP Status Code*	*Map Reference No.*
24-000648 (Bradley Overhead)	BNSF MP 1053.9	Merced	2S2	1

- Properties previously determined ineligible for the National Register: None.

- Properties determined eligible for the National Register as a result of the current study: None.

- Properties determined ineligible for the National Register as a result of the current study:

Name	*Address/Location*	*Community*	*OHP Status Code*	*Map Reference No.*
24-001877	BNSF MP 1041.6	Le Grand	3CS	2
24-001878	BNSF MP 1041.5	Le Grand	6Z	3
24-001879	BNSF MP 1047.3	Planada	6Z	4
24-001880	BNSF MP 1056.0	Merced	6Z	5
24-001881	Across the entire APE	N/A	6Z	N/A

- Properties for which further study is needed: None.

- Properties that are historical resources for the purpose of CEQA:

Name	*Address/Location*	*Community*	*OHP Status Code*	*Map Reference No.*
24-000648 (Bradley Overhead)	BNSF MP 1053.9	Merced	2S2	1
24-001877	BNSF MP 1041.6	Le Grand	3CS	2

- Properties that are not historical resources under CEQA:

Name	*Address/Location*	*Community*	*OHP Status Code*	*Map Reference No.*
24-001878	BNSF MP 1041.5	Le Grand	6Z	3
24-001879	BNSF MP 1047.3	Planada	6Z	4
24-001880	BNSF MP 1056.0	Merced	6Z	5
24-001881	Across the entire APE	N/A	6Z	N/A

CONCLUSIONS

As a result of the present study, six historic-period sites were identified within or partially within the APE. One of these, 24-000648, represents the Bradley Overhead bridge (Bridge No. 39-0044), which was previously determined to be eligible for listing in the National Register of Historic Places. In light of that determination, the site meets Section 106 definition of a "historic property" and CEQA definition of a "historical resource." An MOA for its demolition and replacement as part of another project has been approved by the Federal Highway Administration and the California State Historic Preservation Officer,

and has been accepted by the Advisory Council on Historic Preservation (see HPSR Attachment D). Mitigation of project effects has been fulfilled with the extensive documentation of the historic structure in a Historic American Engineering Record (see HPSR Attachment D). Therefore, the proposed undertaking will not have an unmitigated effect on the Bradley Overhead bridge.

Site 24-001877 encompasses a group of buildings located within and adjacent to the APE near Le Grand, including the 1896 Le Grand depot and three ancillary buildings. Due to the loss of historic integrity, it does not appear eligible for the National Register of Historic Places but appears eligible for the California Register of Historical Resources. Consequently, it does not qualify as a "historic property" under Section 106 but qualifies as a "historical resource" under CEQA. While the ancillary buildings at Site 24-001877 are located within the boundaries of the APE, none of these ancillary buildings is closely associated with, or contributes to, the historic significance of the former depot building, which was moved to its current location just outside the APE sometime after 1966. Furthermore, current project plans do not include the alteration, destruction, demolition, or removal of any of the buildings at Site 24-001877. Therefore, the proposed undertaking will have no effect on this "historical resource."

Among the other four sites in the APE, 24-001881 consists of the existing BNSF railroad line that runs through the APE, originally built in 1895-1897, and 24-001878 to -001880 consist of the former locations of the railroad stations at Le Grand, Planada, and Merced, exhibiting remnant features such as palm trees, concrete foundations, and station signs. None of these four sites appears eligible for listing in the National Register or the California Register, and thus none of them constitutes a "historic property" or a "historical resource."

Based on the research results summarized above, a finding of No Historic Properties/Historical Resources Affected appears to be appropriate for the proposed undertaking, pursuant to 36 CFR 800.4(d)(1) and Calif. PRC §21084.1. No further cultural resources studies are mandated by Section 106 and CEQA provisions on the APE unless project plans change to include potential impact on the former Le Grand depot building at Site 24-001877. It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.

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Pierce, Wendy, R. Bethard, T. Overly, and N. Stevens
1999a California Historical Resources Inventory Record, 24-000606. On file, Central California Information Center, California State University, Stanislaus.

1999b California Historical Resources Inventory Record, 24-000607. On file, Central California Information Center, California State University, Stanislaus.

USGS (United States Geological Survey, U.S. Department of the Interior)
1917 Map: Merced, Calif. (1:31,680); surveyed in 1914.
1918 Map: Planada, Calif. (1:31,680); surveyed in 1915.
1919 Map: Plainsburg, Calif. (1:31,680); surveyed in 1916.
1947a Map: Le Grand, Calif. (7.5', 1:24,000); surveyed in 1915, culture revised 1946.
1947b Map: Plainsburg, Calif. (7.5', 1:24,000); surveyed in 1916, culture revised 1946.
1948a Map: Merced, Calif. (7.5', 1:24,000); surveyed in 1914, culture revised 1946.
1948b Map: Planada, Calif. (7.5', 1:24,000); surveyed in 1915, culture revised 1946.

Vespermann, Juergen
2008 Letter to Elizabeth Greathouse, Coordinator, Central California Information Center, dated December 21, regarding the current status of the Bradley Overhead. On file, Central California Information Center, California State University, Stanislaus.

APPENDIX 1

PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/HISTORIAN
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History/Historic Preservation, UC Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.
2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1993-2002	Project Historian/Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, UC Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, UC Riverside.
1988-1993	Research Assistant, American Social History, UC Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Honors and Awards

1988-1990	University of California Graduate Fellowship, UC Riverside.
1985-1987	Yale University Fellowship, Yale University Graduate School.
1980, 1981	President's Honor List, Northwestern University, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (With Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

Membership

California Preservation Foundation.

HISTORICAL ARCHAEOLOGIST/REPORT WRITER
Josh Smallwood, M.A.

Education

2008	M.A., Historic Preservation, Savannah College of Art and Design, Savannah, Georgia.
1998	B.A., Anthropology, Humboldt State University, Arcata, California.
1997	Archaeological Field School, Fort Ross State Historic Park, Fort Ross, California.
	Archaeological Field School, Coastal Test and Mitigation Projects, Arcata, California.
1996	Archaeological Field School, Mad River Watershed Surveys, Blue Lake, California.
1994	A.A., Anthropology, Palomar College, San Marcos, California.
1993	Archaeological Field School, San Pasqual Battlefield, San Pasqual, California.
	Archaeological Field School, Las Flores Asisténcia, Camp Pendleton, CA.
1992	Archaeological Field School, Palomar College Campus Late Prehistoric Sites, San Marcos, California.

2002	"Historical Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base.
2001	"OSHA Safety Training for Construction Monitors," presented by OSHA and City of San Diego.
2000	"HABS/HAER Recording Methods for Historic Structures," presented by Robert Case, Historic Archaeologist, Mooney & Associates, San Diego.
1998	"Unexploded Ordinance Training," presented by EOD officers, Fort Irwin National Training Center, Barstow.
1997	"Obsidian Sourcing through Characterization," presented by Thomas Origer, Sonoma State University.
1994-	Extensive study of lithic resource procurement strategies, reduction technology, tool manufacture, and reproduction.

Professional Experience

2002- Project Archaeologist/Report Writer, CRM TECH, Riverside/Colton, California.

- Writer/co-author of cultural resource reports for Section 106 and CEQA compliance.
- Field director in archaeological fieldwork, historic-period building surveys and recordation, historic-period artifact and lithic analysis.
- Historical research using published literature, historic maps, oral interviews, archival records of public agencies, internet sources, and consultation with local historical societies.

1997-2002 Archaeologist for several cultural resource management/environmental consultants, Department of Defense subcontractors, and Humboldt State University.

Cultural Resources Management Reports

Co-author of and contributor to numerous cultural resources studies since 1997.

PROJECT ARCHAEOLOGIST
Daniel Ballester, B.A.

Education

1998	B.A., Anthropology, California State University, San Bernardino.
1997	Archaeological Field School, University of Las Vegas and University of California, Riverside.
1994	University of Puerto Rico, Rio Piedras, Puerto Rico.
2007	Certificate in Geographic Information Systems (GIS), California State University, San Bernardino.
2002	"Historic Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base; presented at CRM TECH, Riverside, California.

Professional Experience

2002- Field Director, CRM TECH, Riverside/Colton, California.
- Report and site record preparation, and supervisory responsibilities over all aspects of fieldwork and field crew.

1999-2002 Project Archaeologist, CRM TECH, Riverside, California.
- Survey, testing, data recovery, monitoring, and mapping.

1998-1999 Field Crew, K.E.A. Environmental, San Diego, California.
- Two and a half months of excavations on Topomai village site, Marine Corp Air Station, Camp Pendleton.

1998 Field Crew, A.S.M. Affiliates, Encinitas, California.
- Two weeks of excavations on a site on Red Beach, Camp Pendleton, and two weeks of survey in Camp Pendleton, Otay Mesa, and Encinitas.

1998 Field Crew, Archaeological Research Unit, University of California, Riverside.
- Two weeks of survey in Anza Borrego Desert State Park and Eureka Valley, Death Valley National Park.

APPENDIX 2

CALIFORNIA HISTORICAL RESOURCE INFORMATION SYSTEM SITE RECORD FORMS

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 24-001877
HRI #
Trinomial
NRHP Status Code 3CS
Other Listings
Review Code Reviewer Date

 *Resource Name or # (Assigned by recorder) CRM TECH 2312-5H

P1. Other Identifier: Former Atchison, Topeka and Santa Fe depot at Le Grand

***P2. Location:** ____ **Not for Publication** • **Unrestricted** ***a. County** Merced
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. **USGS 7.5' Quads** Le Grand, Calif. **Date** 1961, photo-revised 1981
T8S; **R**16E; SW **1/4 of Sec** 17; M.D. **B.M.**
Elevation: Approx. 250 feet above mean sea level

c. **Address** N/A **City** Le Grand **Zip Code** 95333

d. **UTM: Zone** 10; 743,849 **mE/** 4,124,235 **mN;**
UTM Derivation: ____USGS Quad • GPS (NAD 1983)

e. **Other Locational Data:** (e.g., parcel #, directions to resource, etc., as appropriate) The former Le Grand ATSF depot is among a complex of four buildings located on the southwest side of the Burlington Northern Santa Fe Railway at Milepost 1041.6. This group of buildings is situated within and immediately adjacent to the existing railroad right-of-way, approximately one-tenth of a mile to the northwest of Jefferson Street.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The primary building within this complex is the former Le Grand depot, built by the San Francisco and San Joaquin Valley (SF&SJV) Railroad Company in 1896, and moved to this location from Milepost 1041.5 sometime after 1966. The depot is presently located immediately adjacent to the Burlington Northern Santa Fe Railway right-of-way. Within the right-of-way and adjacent to the depot are three other buildings, including a workshop, a small drying shed, and a walnut-processing shed.
(Continued on p. 3)

***P3b. Resource Attributes:** (List attributes and codes) HP6. 1-3 story commercial building; HP4. Ancillary buildings

***P4. Resources Present:** • Building ____Structure ____Object ____Site ____District ____Element of District ____Other (isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

(See pp. 8, 9)

P5b. Description of Photo: (view, date, accession #) Photos taken on February 2, 2009

***P6. Date Constructed/Age of Sources:** • Historic ____Prehistoric ____Both

***P7. Owner and Address:** Multiple

***P8. Recorded by:** (Name, affiliation, and address) Josh Smallwood, CRM TECH, 1016 E. Cooley Drive, Suite A/B, Colton, CA 92324

***P9. Date Recorded:** February 2, 2009

***P10. Survey Type:** Project-related survey for compliance with CEQA and Section 106 of the NHPA (intensive-level)

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai "Tom" Tang and Josh Smallwood (2009): Historical Resource Evaluation Report: Le Grand to Merced, CA Double Track Project, BNSF Railway Company Mainline Track (MP 1039.9 to 1056.4), Merced County, California, Caltrans District 10. On file, Central California Information Center, California State University, Stanislaus.

***Attachments:** ____None • Location Map • Continuation Sheet • Building, Structure, and Object Record
____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record
____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

B1. Historic Name: San Francisco and San Joaquin Valley Railway depot at Le Grand
B2. Common Name: Le Grand ATSF station
B3. Original Use: Railway depot B4. Present Use: Storage/furniture restoration workshop
***B5. Architectural Style:** SF&SJV Standard No. 1 design
***B6. Construction History:** (Construction date, alterations, and date of alterations) The Le Grand depot was constructed in 1896. According to sources in railroad history, the Le Grand depot was designed by William Benson Storey, Jr., the SF&SJV's engineer who later became president of the Santa Fe System. The design was "No. 1" in a quartet of standard designs used by the SF&SJV Railway for its depots, and was the predecessor to the ATSF's Standard No. 2 and No. 2A style depots. There are only three depots of this design known to have been constructed, and reportedly, Le Grand is the last one standing. The second-story agent's quarters were extended 16 feet in 1924, and the open-air passenger waiting area was evidently enclosed with board-and-batten siding sometime after it was moved in 1966.
***B7. Moved?** ___No • Yes ___Unknown **Date:** 1966 **Original Location:** BNSF MP 1041.5
***B8. Related Features:** workshop, a small drying shed, and a walnut-processing shed (see item P3a)
B9a. Architect: William Benson Storey, Jr. b. Builder: SF&SJV Railway
***B10. Significance: Theme** Railroad transportation **Area** California
Period of Significance 1890s **Property Type** Railway depot **Applicable Criteria** NRHP A/C; CRHR 1/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) The town of Le Grand was founded along the SF&SJV Railway and owes much of its early growth to the railroad, which was originally constructed along this segment in 1895-1896 by the SF&SJV Railway, and later purchased by the ATSF in 1899. Prior to the arrival of the ATSF in the late 1890s, the Southern Pacific (SP) Railway, completed through the San Joaquin Valley in 1872, enjoyed a transportation monopoly in this part of California. By to the 1870s, the San Joaquin Valley was amidst transition from a vast frontier characterized by immense ranches that produced cattle and grain, to a farming region dotted with homesteads.
(Continued on p. 4)
B11. Additional Resource Attributes: (List attributes and codes) HP4. Ancillary buildings
***B12. References:** Lee Gustafson and Philip Serpico (1996): *Santa Fe Coast Lines Depots, Valley Division* (Omni Publications, Palmdale, California).

B13. Remarks:
***B14. Evaluator:** Josh Smallwood
***Date of Evaluation:** February 2009

(Sketch Map with north arrow required.)

(See pp. 6, 7)

(This space reserved for official comments.)

***P3a. Description** (continued): The Le Grand depot is a two-story, wood-frame structure, rectangular in shape, and comprises an open-air passenger area, a ticket station, a freight house, and second-story agent's quarters. Architecturally, the depot is a slightly altered version of the SF&SJV Railway Company's Standard No. 1 plan. Evidently some of the alterations occurred in 1924 with the expansion of the second-story agent's quarters, while other alterations occurred after the station was relocated.

The ticket station and passenger area rests on what appears to be a concrete foundation, although some portions of the building were obscured from public view and others appeared to sit directly on earth and loose bricks. The building is surmounted by a medium-pitched, hip roof covered with red, diamond-pattern asbestos shingles. The exterior walls are clad with narrow drop-boards and painted yellow with yellow trim. The asymmetrical primary façade, facing southwest, features two single-width paneled wood doors, a double-width paneled wood door topped with transoms, a bay of windows, and a single window on the first floor, with a now-enclosed veranda that once served as an open-air passenger waiting area. The veranda is enclosed with board-and-batten siding. Wood braces over the doorways of the depot and on the exterior wall of the freight house support a wide eave overhang along the entire length of the building, with a projecting eave extension over the depot entrance. The exposed rafters and rafter extensions feature a scroll-cut decorative design. Windows on the first floor are wood-framed double-hungs painted white, with 12/4 glazing.

The second story was originally designed as the Railway agent's living quarters, and sports four sets of white, wood-framed double-hung windows, including a recessed bay-window, a specific feature of the SF&SJV Railway's No. 1 design. The single windows feature 6/4 glazing, the double windows 8/4 glazing, and the tripartite bay of windows 8/20 glazing. Fenestration on the rest of the second floor include wood-framed casements with 8/2 glazing.

The freight house portion of the Le Grand station rests on a raised foundation of thick redwood piers and beams supported by a low, narrow concrete perimeter footing. The exterior walls are clad with narrow drop-board siding painted yellow with yellow trim. The primary façade features a large, rolling-track door with wood panels bounded on each side by three white, wood-frame awning windows glazed with six panes of glass. None of the "Le Grand" or "Santa Fe" station signs was found on the building, and the original loading deck is gone. The colonial yellow exterior, white window sashes, and Venetian red roof all appear to be historical elements of the building based on color schemes historically used by the ATSF Railway Company.

The ancillary buildings adjacent to the Le Grand depot, as mentioned, include a workshop, a small drying shed, and a walnut-processing shed. The workshop is a rectangular, wood-frame building resting on a perimeter footing of concrete blocks. This building sits directly between the Le Grand depot and the BNSF tracks. It is surmounted by a low-pitched roof covered with ceramic

tiles, and the roof ends with narrow eaves with exposed rafters. Windows on the building include wood-framed double-hungs in groups of three or six, some of which are topped with awning-type windows.

The small drying shed located to the rear of the workshop is a wood-frame building resting on a concrete foundation and covered with a medium-pitched front-gable roof. The roof and exterior walls are clad with corrugated metal sheets. A tall, screened window is located on one side and a wood door on the other.

The walnut-processing shed is a wood-frame structure fronted by a covered open-air facility. The building rests on a raised foundation of concrete and wood pilings and is sheltered beneath a medium-pitched front-gable roof covered with corrugated metal sheets.

***B10. Significance** (continued)**:** Prior to the availability of railroad transportation there had been no practical way to take cattle and grain products to market. The early ranchers had to drive their herds to market and transport grain by wagons. Advent of the railway through this part of the valley meant that heavy loads of grain and other products could be transported to market with ease. With the progressive development of refrigerated rail cars, the railroads were also instrumental in establishing California's agricultural economy by transporting high-profit fresh fruits and other perishable produce to faraway eastern cities.

The demise of the SP's railroad monopoly was an important factor in the expansive settlement and population boom that occurred throughout California in the 1880s, mainly due to the rate wars that ensued and the resulting low cost of passenger and freight delivery. Naturally, small towns such as Le Grand developed along the railroad every few miles where freight and passengers were unloaded. The many railroad depots along the "Valley road" served as important links between these communities and the outside world, and were the centers for dissemination of news and movement of goods for residents and businesses.

With the dawn of the automobile age, the trucking industry, and ultimately the rise of civilian airlines, the once powerful railroad companies fell rapidly from their dominant position in long-distance transportation in the U.S. during the first half of the 20th century. In particular, passenger traffic increasingly shunned the railroads in the post-WWII era, effectively relegating the glamorous passenger trains to the status of relics by the 1960s-1970s. One by one, the railroad depots along this stretch of the ATSF line were closed and removed.

The first station at Le Grand was an interim agency, likely a retired boxcar located along the tracks, that opened August 2, 1896. It was replaced with the construction of the Le Grand depot later in that same year. Between 1896 and 1966 the Le Grand depot was in continuous use, but early in 1966 the station became seasonal, and later that year it was put up for sale by the ATSF Company and moved off the railroad's right-of-way.

The second-story agent's quarters were extended 16 feet in 1924, and the open-air passenger waiting area was evidently enclosed with board-and-batten siding sometime after it was moved in 1966. It is reportedly the last surviving station built to the SF&SJV Railway's No. 1 Standard plans. Today, it stands along the southwest side of the tracks adjacent to the BNSF right-of-way, one-tenth of a mile to the northwest of its original location. It is presently used as a storage building and is in a state of neglect.

The Le Grand depot appears eligible for the California Register of Historical Resources based on Criteria 1 and 3, due to its association with important events in California history and because it embodies distinctive characteristics of a type, period, region, and method of construction. It does not, however, appear to be eligible for the National Register of Historic Places due to the loss of much of its historic integrity, including primarily the elements of location and, to lesser degrees, those of materials, setting, association, and feeling. The ancillary buildings at this location are generally plain and utilitarian in appearance and do not stand out as important or notable examples of their style, type, period, region, or method of construction, and they are not directly associated with the life of an important person. Furthermore, none of these ancillary buildings is closely associated with, or contributes to, the historic significance of the former depot building.

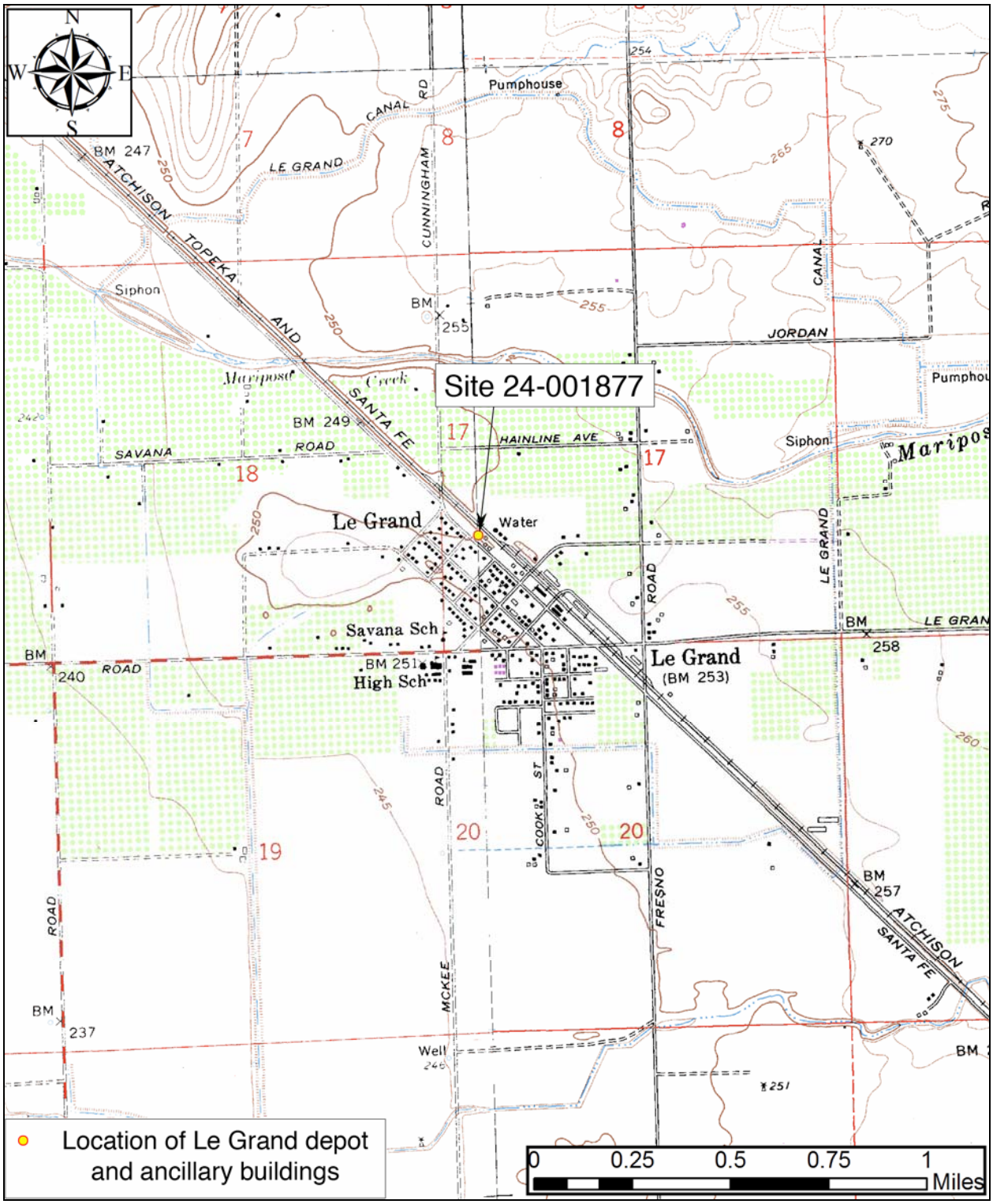
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001877
HRI #
Trinomial

Page 6 of 9 *Resource Name or # (Assigned by recorder) CRM TECH 2312-5H

*Map Name: Le Grand, Calif. *Scale: 1:24,000 *Date of Map: 1961, photo-revised 1981



State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001877
HRI #
Trinomial

*Resource Name or # (Assigned by recorder) CRM TECH 2312-5H

*Map Name: Google Earth image *Scale: As shown *Date of Map: Unknown

*Required information

Photo Taken by Josh Smallwood *Date February 2, 2009 • Continuation ___Update

Present location of the former Le Grand depot (MP 1041.6), view to the north.

Walnut processing shed at MP 1041.6, view to the east.

Photo Taken by Josh Smallwood *Date February 2, 2009 • Continuation ___Update

Workshop (foreground) and walnut processing shed (back left) at MP 1041.6, view to the south.

Drying shed (foreground), workshop (back right), and former Le Grand depot (back left) at MP 1041.6, view to the north-northwest.

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 24-001878
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

 *Resource Name or # (Assigned by recorder) CRM TECH 2312-4H

P1. Other Identifier: Former site of Le Grand ATSF station

***P2. Location:** ____ **Not for Publication** • **Unrestricted** ***a. County** Merced
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. **USGS 7.5' Quads** Le Grand, Calif. **Date** 1961, photo-revised 1981
T8S; **R**16E; SW **1/4 of Sec** 17; M.D. **B.M.**
Elevation: Approx. 250 feet above mean sea level

c. **Address** N/A **City** Le Grand **Zip Code** 95333

d. **UTM: Zone** 10; **Locus A:** 744,029 **mE/** 4,124,094 **mN;**
Locus B: 744,119 **mE/** 4,124,013 **mN;**
UTM Derivation: ____USGS Quad • GPS (NAD 1983)

e. **Other Locational Data:** (e.g., parcel #, directions to resource, etc., as appropriate) This site is located on the southwest side of the Burlington Northern Santa Fe Railway at Milepost 1041.5. It is situated within the existing railroad right-of-way at the intersection of Jefferson Street.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The site consists of one fan palm, some concrete and brick fragments, and three concrete slab foundations found near the former location of the Le Grand station along the BNSF line, historically the Atchison, Topeka and Santa Fe Railway. The foundations measure 57x15 feet, 21x15 feet, and 15x12 feet. A small metal sign next to the tracks reads, "Le Grand". Other than a few pieces of broken concrete and brick, no archaeological materials were encountered at this location, and no evidence was found to suggest that buried archaeological materials exist at this location.

***P3b. Resource Attributes:** (List attributes and codes) AH2. Foundations; AH3. Landscaping; AH16. Other (sign)

***P4. Resources Present:** ____Building ____Structure ____Object • Site ____District ____Element of District ____Other (isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

(See pp. 5, 6)

P5b. Description of Photo: (view, date, accession #) Photos taken on February 2, 2009

***P6. Date Constructed/Age of Sources:** • Historic ____Prehistoric ____Both

***P7. Owner and Address:** Burlington Northern Santa Fe Railway Company, 2650 Lou Menk Drive, Fort Worth, TX 76131

***P8. Recorded by:** (Name, affiliation, and address) Josh Smallwood, CRM TECH, 1016 E. Cooley Drive, Suite A/B, Colton, CA 92324

***P9. Date Recorded:** February 2, 2009

***P10. Survey Type:** Project-related survey for compliance with CEQA and Section 106 of the NHPA (intensive-level)

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai "Tom" Tang and Josh Smallwood (2009): Historical Resource Evaluation Report: Le Grand to Merced, CA Double Track Project, BNSF Railway Company Mainline Track (MP 1039.9 to 1056.4), Merced County, California. On file, Central California Information Center, California State University, Stanislaus.

***Attachments:** ____None • Location Map • Continuation Sheet • Building, Structure, and Object Record
____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record
____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z
*Resource Name or # (Assigned by recorder) CRM TECH 2312-4H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Le Grand ATSF station site B4. Present Use: Vacant
*B5. Architectural Style: N/A
*B6. Construction History: (Construction date, alterations, and date of alterations) The foundations at this location are remnants of several buildings once located at the former Le Grand ATSF station. It is unknown what these buildings were, but it is presumed they were related to the operations of the railway system. The original Le Grand depot was constructed at this location in 1896 by the San Francisco and San Joaquin Valley Railway Company, but was moved to a new location (Milepost 1041.6) approximately one-tenth of a mile to the northwest in 1966. It has been recorded into the California Historical Resource Inventory as Site 24-001877.
*B7. Moved? • No ____Yes _____Unknown Date:_____ Original Location:_____
*B8. Related Features: None
B9a. Architect: N/A b. Builder: N/A
*B10. Significance: Theme Railroad transportation Area California
Period of Significance 1890s Property Type Foundations Applicable Criteria N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) The foundations at this site are considered associated features of the ATSF railway and former Le Grand station, and are relatively minor and fragmentary components, with no design merits, no historic integrity, and no archaeological research potential. Based on these considerations, Site 24-001878 does not appear to meet any of the criteria for listing in the National Register of Historic Places or the California Register of Historical Resources.

B11. Additional Resource Attributes: (List attributes and codes)_____
*B12. References: Lee Gustafson and Philip Serpico (1996): *Santa Fe Coast Lines Depots, Valley Division* (Omni Publications, Palmdale, California).

B13. Remarks:_____
*B14. Evaluator: Josh Smallwood
*Date of Evaluation: February 2009

(Sketch Map with north arrow required.)

(See pp. 3, 4)

(This space reserved for official comments.)

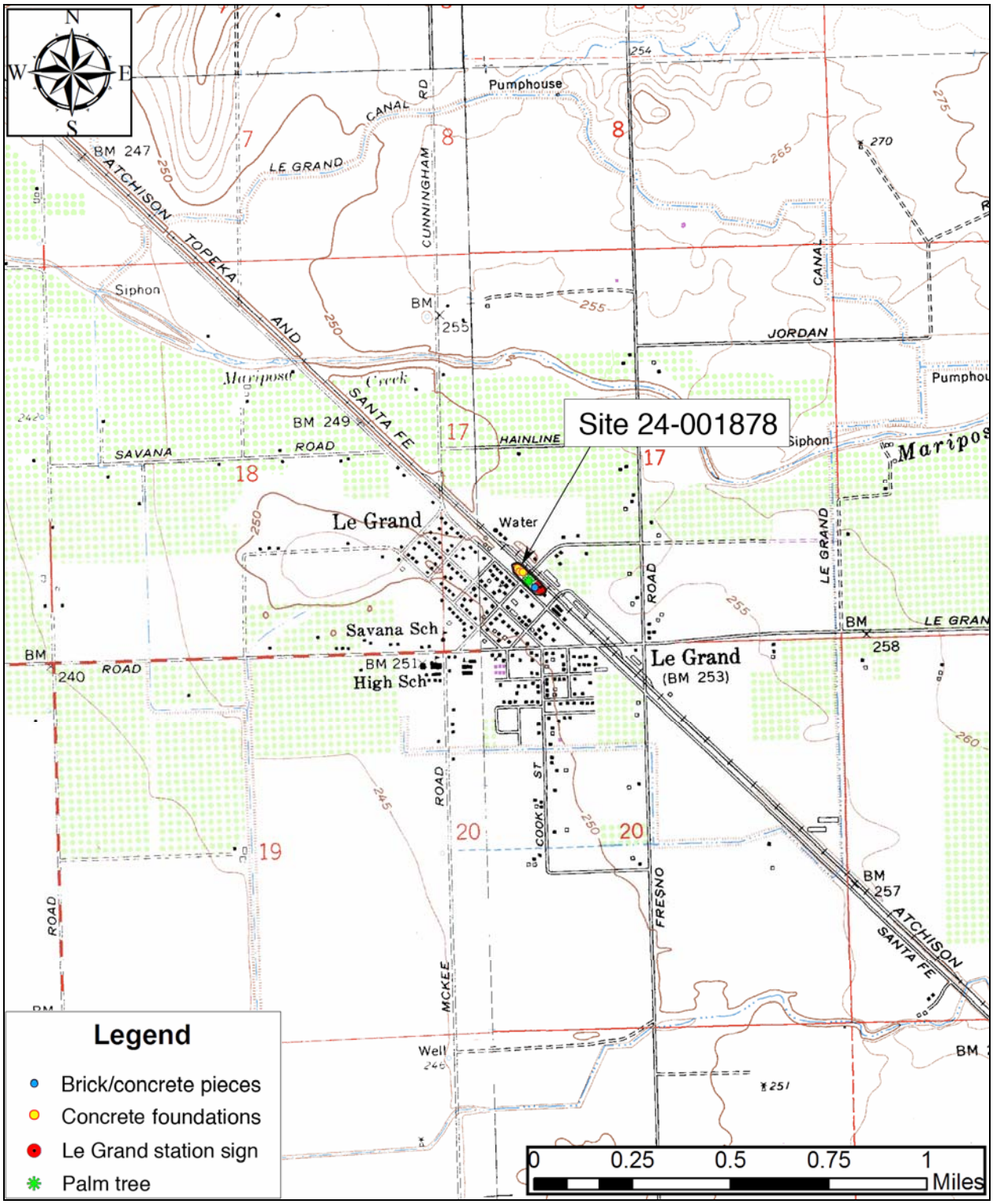
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001878
HRI #
Trinomial

Page 3 of 6 *Resource Name or # (Assigned by recorder) CRM TECH 2312-4H

*Map Name: Le Grand, Calif. *Scale: 1:24,000 *Date of Map: 1961, photo-revised 1981



DPR 523J (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001878
HRI #
Trinomial

*Resource Name or # (Assigned by recorder) CRM TECH 2312-4H

*Map Name: Google Earth image *Scale: As shown *Date of Map: Unknown

*Required information

Photo Taken by Josh Smallwood *Date February 2, 2009 • Continuation ___Update

Concrete foundations found near the location of the former Le Grand station (Locus A; MP 1041.5), view to the southeast

Photo Taken by Josh Smallwood *Date February 2, 2009 • Continuation ___Update

Palm and sign found near the location of the former Le Grand station (Locus B; MP 1041.5), view to the northwest

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 24-001879
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 2312-3H

P1. Other Identifier: Former site of Planada ATSF station

***P2.** Location: ____ Not for Publication • Unrestricted *a. County Merced
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quads Planada, Calif. Date 1961, photo-inspected 1973
T7S; R15E; SW 1/4 of Sec 27; M.D. B.M.
Elevation: Approx. 220 feet above mean sea level

c. Address N/A City Planada Zip Code 95365

d. UTM: Zone 10; A: 737,213 mE/ 4,130,593 mN;
B: 737,340 mE/ 4,130,463 mN;
UTM Derivation: ____USGS Quad • GPS (NAD 1983)

e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) This site is located on the northeast side of the Burlington Northern Santa Fe (BNSF) Railway at Milepost 1047.3. The site is situated within the existing railroad right-of-way.

***P3a.** Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The site consists of two date palms, two fan palms, and three topless palms that are presumably remnant landscape features of the former Planada station along the BNSF line, historically the Atchison Topeka Santa Fe Railway. The trees measure approximately 40-50 feet tall and two feet in diameter. A small metal sign next to the tracks reads, "Planada". Other than a few pieces of broken concrete, no archaeological materials were encountered at this location, and no evidence was found to suggest that buried archaeological materials exist at this location.

***P3b.** Resource Attributes: (List attributes and codes) AH3. Landscaping; AH16. Other (sign)

***P4.** Resources Present: ____Building ____Structure ____Object • Site ____District ____Element of District ____Other (isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

(See pg. 5)

P5b. Description of Photo: (view, date, accession #) Photo taken on February 2, 2009

***P6.** Date Constructed/Age of Sources:
• Historic ____Prehistoric ____Both

***P7.** Owner and Address:
Burlington Northern Santa Fe Railway Company, 2650 Lou Menk Drive, Fort Worth, TX 76131

***P8.** Recorded by: (Name, affiliation, and address)
Josh Smallwood, CRM TECH, 1016 E. Cooley Drive, Suite A/B, Colton, CA 92324

***P9.** Date Recorded: February 2, 2009

***P10.** Survey Type: Project-related survey for compliance with CEQA and Section 106 of the NHPA (intensive-level)

***P11.** Report Citation: (Cite survey report and other sources, or enter "none.") Bai "Tom" Tang and Josh Smallwood (2009): Historical Resource Evaluation Report: Le Grand to Merced, CA Double Track Project, BNSF Railway Company Mainline Track (MP 1039.9 to 1056.4), Merced County, California. On file, Central California Information Center, California State University, Stanislaus.

***Attachments:** ____None • Location Map • Continuation Sheet • Building, Structure, and Object Record
____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record
____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

Primary # 24-001879
HRI #

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z
*Resource Name or # (Assigned by recorder) CRM TECH 2312-3H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Landscaping B4. Present Use: Abandoned
*B5. Architectural Style: N/A
*B6. Construction History: (Construction date, alterations, and date of alterations) The palms at this location are presumed to be remnant landscape features associated with the former Planada ATSF station once located here and since removed. Palms were at one time a typical landscape tree found at many stations throughout central and southern California. It is unknown how old the trees are, but they look to be more than 50 years old. The original Planada depot was constructed at this location in 1897 by the San Francisco and San Joaquin Valley Railway Company, but was destroyed by fire in 1906 and replaced in 1907. The 1907 station was moved to Plainsburg in 1966 and later condemned and burned as a training exercise for the fire department.
*B7. Moved? • No ____Yes _____Unknown Date:_____ Original Location:_____
*B8. Related Features: None
B9a. Architect: N/A b. Builder: N/A
*B10. Significance: Theme Railroad transportation Area California
Period of Significance 1890s Property Type Landscaping Applicable Criteria N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) These palm trees are considered associated features of the ATSF railway and former Planada station, and are relatively minor and fragmentary components, with no design merits, no historic integrity, and no archaeological research potential. Based on these considerations, Site 24-001879 does not appear to meet any of the criteria for listing in the National Register of Historic Places or the California Register of Historical Resources.

B11. Additional Resource Attributes: (List attributes and codes)_____
*B12. References: Lee Gustafson and Philip Serpico (1996): *Santa Fe Coast Lines Depots, Valley Division* (Omni Publications, Palmdale, California).

B13. Remarks:_____
*B14. Evaluator: Josh Smallwood
*Date of Evaluation: February 2009

(This space reserved for official comments.)

(Sketch Map with north arrow required.)

(See pp. 3, 4)

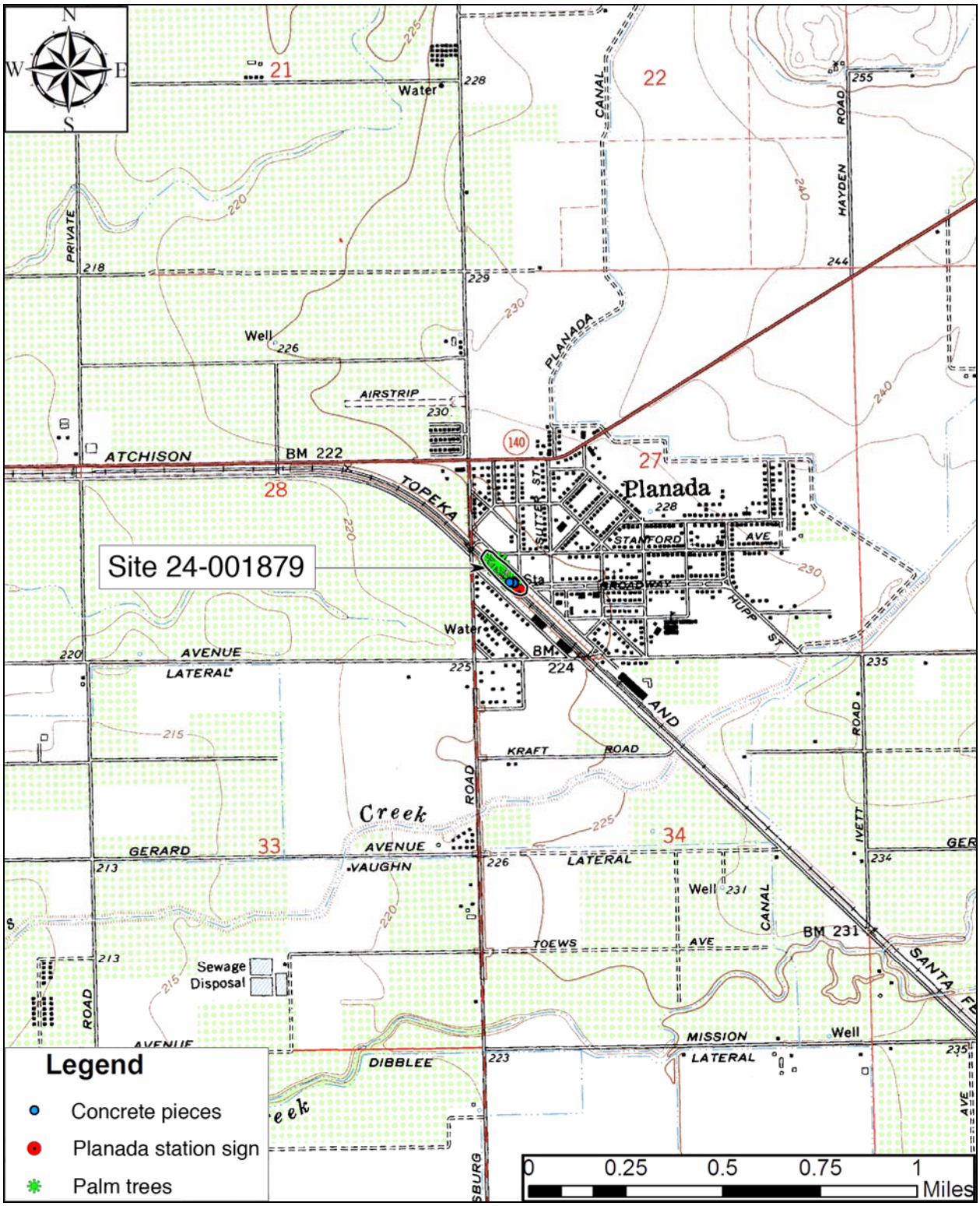
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001879
HRI #
Trinomial

Page 3 of 5 *Resource Name or # (Assigned by recorder) CRM TECH 2312-3H

*Map Name: Planada, Calif. *Scale: 1:24,000 *Date of Map: 1961, photo-inspected 1973



DPR 523J (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001879
HRI #
Trinomial

*Resource Name or # (Assigned by recorder) CRM TECH 2312-3H

*Map Name: Google Earth image *Scale: As shown *Date of Map: Unknown

*Required information

Photo Taken by Josh Smallwood *Date February 2, 2009 • Continuation ___Update

Palms found near the location of the former Planada station (MP 1047.3), view to the northwest.

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 24-001880
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 2312-2H

P1. Other Identifier: Date palms near former Merced ATSF station

***P2. Location:** ____ **Not for Publication** • **Unrestricted** ***a. County** Merced
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. **USGS 7.5' Quads** Merced, Calif. **Date** 1961, photo-revised 1987
T 7S; **R** 14E; NW **1/4 of** SE **1/4 of Sec** 19; M.D. **B.M.**
Elevation: Approx. 170 feet above mean sea level

c. **Address** N/A **City** Merced **Zip Code** 95340

d. **UTM: Zone** 10; 723,507 **mE/** 4,132,007 **mN;**
UTM Derivation: ____USGS Quad • GPS (NAD 1983)

e. **Other Locational Data:** (e.g., parcel #, directions to resource, etc., as appropriate) These four palms are located at the intersection of K Street and the Burlington Northern Santa Fe Railway at BNSF Milepost 1056.0, near the original location of the Merced ATSF station. They are situated within the existing railroad right-of-way and approximately 150 feet to the northwest of the Amtrak station located at 324 West 24th Street.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The site consists of four date palms that appear to be a remnant landscape feature found near the former location of the Merced station along the BNSF line, historically the Atchison Topeka and Santa Fe Railway. The trees measure approximately 40-50 feet tall and 2.5 feet in diameter. No archaeological materials were encountered at this location, and no evidence was found to suggest that buried archaeological materials exist at this location.

***P3b. Resource Attributes:** (List attributes and codes) AH3. Landscaping

***P4. Resources Present:** ____Building ____Structure ____Object • Site ____District ____Element of District ____Other (isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

(See pg. 5)

P5b. Description of Photo: (view, date, accession #) Photo taken on February 2, 2009

***P6. Date Constructed/Age of Sources:** • Historic ____Prehistoric ____Both

***P7. Owner and Address:** Burlington Northern Santa Fe Railway Company, 2650 Lou Menk Drive, Fort Worth, TX 76131

***P8. Recorded by:** (Name, affiliation, and address) Josh Smallwood, CRM TECH, 1016 E. Cooley Drive, Suite A/B, Colton, CA 92324

***P9. Date Recorded:** February 2, 2009

***P10. Survey Type:** Project-related survey for compliance with CEQA and Section 106 of the NHPA (intensive-level)

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai "Tom" Tang and Josh Smallwood (2009): Historical Resource Evaluation Report: Le Grand to Merced, CA Double Track Project, BNSF Railway Company Mainline Track (MP 1039.9 to 1056.4), Merced County, California. On file, Central California Information Center, California State University, Stanislaus.

***Attachments:** ____None • Location Map • Continuation Sheet • Building, Structure, and Object Record
____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record
____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

Primary # 24-001880
HRI #

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z
*Resource Name or # (Assigned by recorder) CRM TECH 2312-2H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Landscaping B4. Present Use: Abandoned
*B5. Architectural Style: N/A
*B6. Construction History: (Construction date, alterations, and date of alterations) The row of palms at this location are presumed to be remnant landscape features associated with the former Merced ATSF station once located nearby and since removed and replaced with a completely modern Amtrak station. Palms were at one time a typical landscape tree found at many stations throughout central and southern California. It is unknown how old the trees are, but they look to be more than 50 years old. The original Merced depot was constructed in 1897 by the San Francisco and San Joaquin Valley Railway Company, but was partially destroyed by fire in 1913 and restored soon after. It was completely destroyed by fire in 1916 and rebuilt in 1917-1918. The 1918 station was removed in 1996 as part of a new construction project for the Amtrak station built in 1997. The 1997 Amtrak station building was closely modeled after the 1918 station, and features the original Merced-Santa Fe station sign on the west-facing elevation.
*B7. Moved? • No ____Yes _____Unknown Date:_____ Original Location:_____
*B8. Related Features: None
B9a. Architect: N/A b. Builder: N/A
*B10. Significance: Theme Railroad transportation Area California
Period of Significance 1890s Property Type Landscaping Applicable Criteria N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) These palm trees are considered associated features of the ATSF railway and former Merced station, and are relatively minor and fragmentary components, with no design merits, no historic integrity, and no archaeological research potential. Based on these considerations, Site 24-001880 does not appear to meet any of the criteria for listing in the National Register of Historic Places or the California Register of Historical Resources.

B11. Additional Resource Attributes: (List attributes and codes)_____
*B12. References: Craig Scott, AIA, Derivi Construction Architecture (2009): Personal communication; Lee Gustafson and Philip Serpico (1996): *Santa Fe Coast Lines Depots, Valley Division* (Omni Publications, Palmdale, California).

B13. Remarks:_____
*B14. Evaluator: Josh Smallwood
*Date of Evaluation: February 2009

(Sketch Map with north arrow required.)

(See pp. 3, 4)

(This space reserved for official comments.)

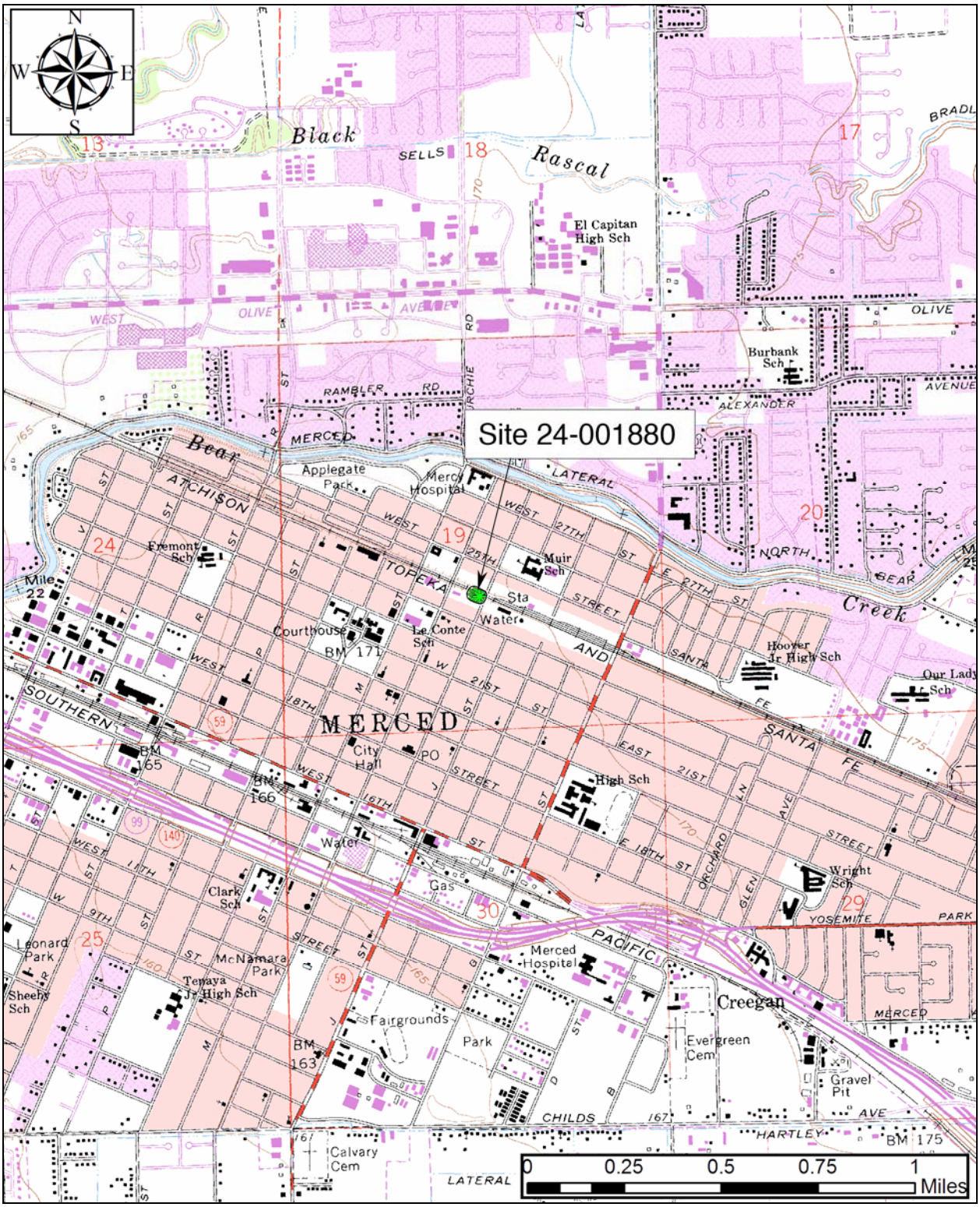
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001880
HRI #
Trinomial

Page 3 of 5 *Resource Name or # (Assigned by recorder) CRM TECH 2312-2H

*Map Name: Merced, Calif. *Scale: 1:24,000 *Date of Map: 1961, photo-revised 1987



State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001880
HRI #
Trinomial

Page 4 of 5 *Resource Name or # (Assigned by recorder) CRM TECH 2312-2H

*Map Name: Google Earth image *Scale: As shown *Date of Map: Unknown

Photo Taken by Josh Smallwood *Date February 2, 2009 • Continuation ___Update

Palm row near the location of the former Merced station, view to the southeast.

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 24-001881
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

 *Resource Name or # (Assigned by recorder) CRM TECH 2312-1H

P1. **Other Identifier:** Burlington Northern Santa Fe (BNSF, formerly Atchison, Topeka and Santa Fe) Railway

***P2.** **Location:** ____ **Not for Publication** • **Unrestricted** ***a. County** Merced
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quads** Merced, Calif. **Date** 1961, photo-revised 1987
Planada, Calif. **Date** 1961, photo-inspected 1973
Plainsburg, Calif. **Date** 1960, photo-inspected 1976
Le Grand, Calif. **Date** 1961, photo-revised 1981

T7S; **R**14E; **Sections** 19, 20, 25, 26, 27, 28, and 29; M.D. **B.M.**
T7S; **R**15E, **Sections** 27, 28, 29, 30, 34, and 35; M.D. **B.M.**
T8S; **R**15E, **Sections** 1, 2, 12, and 29; M.D. **B.M.**
T8S; **R**16E, **Sections** 7, 17, 18, 20, and 21; M.D. **B.M.**
Elevation: Approx. 170-260 feet above mean sea level

c. Address N/A **City** N/A **Zip Code** N/A

d. UTM: Zone 10; **A:** 745,878 **mE/** 4,122,346 **mN;**
B: 723,222 **mE/** 4,132,128 **mN**
UTM Derivation: ____USGS Quad • GPS (NAD 1983)

e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) The recorded segment of the railroad (BNSF Mile Post 1039.9 to 1056.4) extends from near Ipsen Avenue in the community of Le Grand northwesterly to near M Street in the City of Merced.

***P3a.** **Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The site consists of a 16-mile segment of the BNSF line situated between MP 1039.9 and MP 1056.4. This line was originally constructed by the San Francisco and San Joaquin Valley (SF&SJV) Railway *(Continued on p. 3)*

***P3b.** **Resource Attributes:** (List attributes and codes) HP37: Railroad

***P4.** **Resources Present:** ____Building • Structure ____Object ____Site ____District ____Element of District ____Other (isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

(See pp. 10-12)

P5b. Description of Photo: (view, date, accession #) Photos taken on February 2, 2009

***P6. Date Constructed/Age of Sources:** • Historic ____Prehistoric ____Both

***P7. Owner and Address:** Burlington Northern Santa Fe Railway Company, 2650 Lou Menk Drive, Fort Worth, TX 76131

***P8. Recorded by:** (Name, affiliation, and address) Josh Smallwood, CRM TECH, 1016 E. Cooley Drive, Suite A/B, Colton, CA 92324

***P9. Date Recorded:** February 2, 2009

***P10. Survey Type:** Project-related survey for compliance with CEQA and Section 106 of the NHPA (intensive-level)

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai "Tom" Tang and Josh Smallwood (2009): Historical Resource Evaluation Report: Le Grand to Merced, CA Double Track Project, BNSF Railway Company Mainline Track (MP 1039.9 to 1056.4), Merced County, California. On file, Central California Information Center, California State University, Stanislaus.

***Attachments:** ____None • Location Map • Continuation Sheet • Building, Structure, and Object Record
____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record
____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Z
***Resource Name or #** (Assigned by recorder) CRM TECH 2312-1H

B1. Historic Name: San Francisco & San Joaquin Valley Railway; Atchison, Topeka and Santa Fe Railway
B2. Common Name: Burlington Northern Santa Fe Railway
B3. Original Use: Railroad B4. Present Use: Railroad
***B5. Architectural Style:** N/A
***B6. Construction History:** (Construction date, alterations, and date of alterations) The SF&SJV Railway was constructed from Stockton to Bakersfield in 1895-1897, along with a private telegraph line that served the railroad's needs. The line was acquired by the ATSF in 1899 and became a part of the ATSF's first line to reach the port of San Francisco. The rails, ties, and ballast have been replaced numerous times as part of upgrades and maintenance since its original construction in the late 1890s.
***B7. Moved?** • No ____Yes _____Unknown **Date:**_____ **Original Location:**_____
***B8. Related Features:** Bridges, culverts, and other common railroad features (see pp. 11-12)
B9a. Architect: N/A b. Builder: San Francisco & San Joaquin Valley Railway Company
***B10. Significance: Theme** Railroad transportation **Area** California
Period of Significance 1890s **Property Type** Railroad **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This segment of railroad line appears to meet Criterion A for the National Register of Historic Places and Criterion 1 for the California Register of Historical Resources because it is closely associated with an important event in 19th-century California history, namely the arrival of a second transcontinental railroad system in the Central Valley. The ATSF "invasion" spelled the end of the Southern Pacific Railway Company's virtual monopoly on modern transportation in California, which left profound and far-reaching impacts on the political, economic, and social life of the state. Most directly, the coming of a competing rail system served as a major boost to the growth of the Central Valley and the entire state.
(Continued on p. 5)

B11. Additional Resource Attributes: (List attributes and codes) HP19: Bridges; HP20: Culverts
***B12. References:** Lee Gustafson and Philip Serpico (1996): *Santa Fe Coast Lines Depots, Valley Division* (Omni Publications, Palmdale, California).

B13. Remarks:_____
***B14. Evaluator:** Josh Smallwood
***Date of Evaluation:** February 2009

(Sketch Map with north arrow required.)

(See pp. 4-9)

(This space reserved for official comments.)

***P3a. Description** (continued)**:** Company in 1895-1897, and acquired by the Atchison Topeka-Santa Fe Railroad Company in 1899. The recorded segment is located between the community of Le Grand and the City of Merced, in Merced County. The rail line consists of a single standard gauge track laid on a raised bed of earth and crushed rock ballast. Some portions of this segment include sidings for passing trains. A single, abandoned telegraph pole was encountered near MP 1046.1.

Two historic-period concrete culverts, one stamped with a date of 1920 and the other 1923, were observed crossing beneath the track, as were a total of five minor concrete or wood bridges over small drainages. These structures are considered associated features of the railway, and are all relatively minor components of standard design and construction, with no special architectural or engineering merits to set them apart from the many similar features found along other segments of the railroad.

Since its construction in the 1890s, the physical features associated with the railway have all been replaced and upgraded over the years, and many of them are evidently modern in origin. Consequently, the existing rail line, which is the principal feature of the site, exhibits no particular historic characteristics, as can be expected from an active line that remains in use today.

***B10. Significance** (continued)**:** However, as stated above, most of the physical components of the site have since been replaced or upgraded repeatedly in order to sustain continuous service through the past 110 years. As a result, other than the aspect of location, the existing railway and its associated features, as working components of the modern transportation infrastructure, do not retain sufficient historic integrity to relate to the site's period of significance. In addition, this segment of railway is not known to be an important or notable example of a type, period, region, or method of construction, it is not directly associated with the life of an important person, and it demonstrates little potential for any important archaeological data.

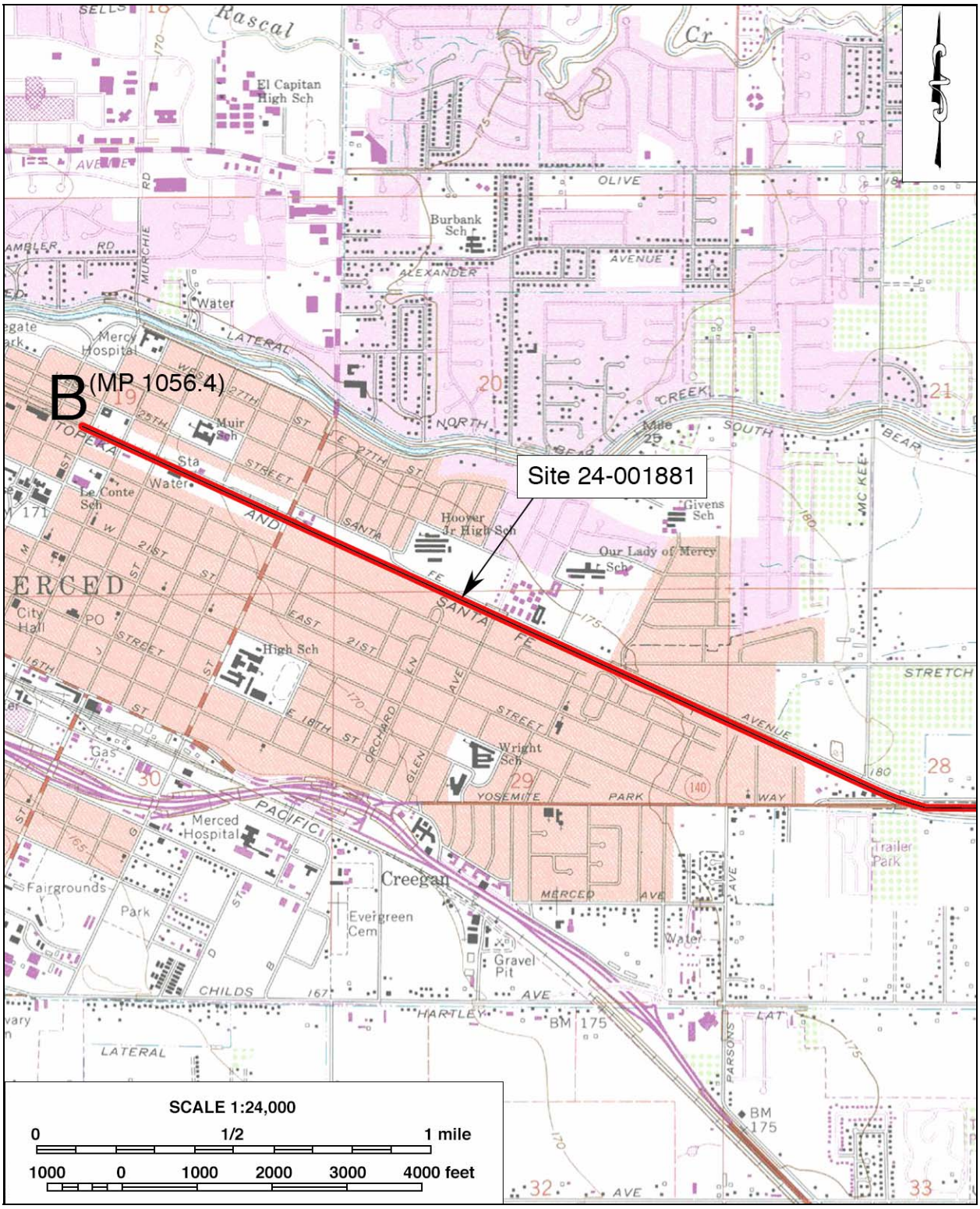
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001881
HRI #
Trinomial

Page 4 of 12 *Resource Name or # (Assigned by recorder) CRM TECH 2312-1H

*Map Name: Merced, Calif. *Scale: 1:24,000 *Date of Map: 1961, photo-revised 1987



DPR 523J (1/95) *Required information

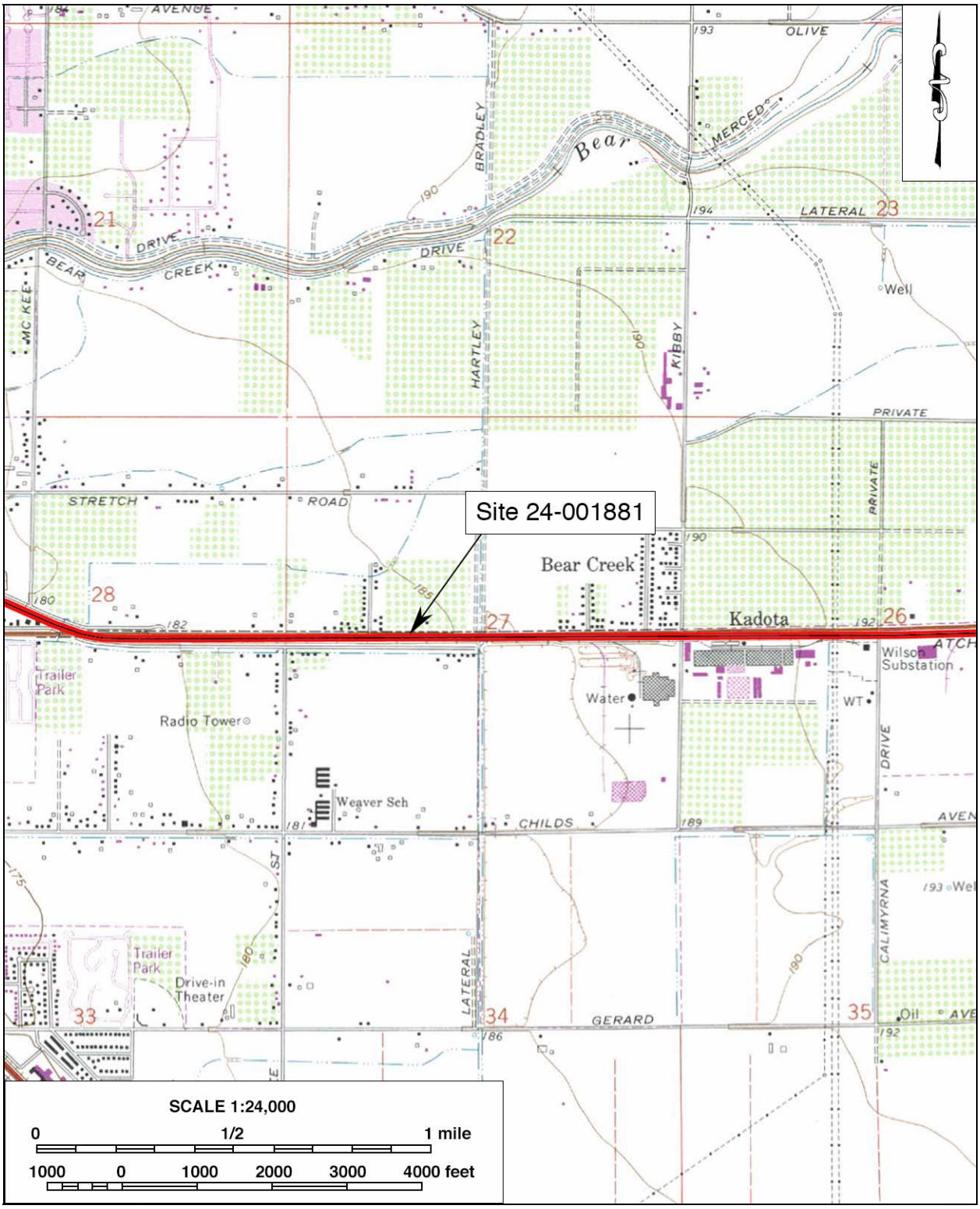
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001881
HRI #
Trinomial

Page 5 of 12 *Resource Name or # (Assigned by recorder) CRM TECH 2312-1H

*Map Name: Merced, Calif. *Scale: 1:24,000 *Date of Map: 1961, photo-revised 1987



DPR 523J (1/95) *Required information

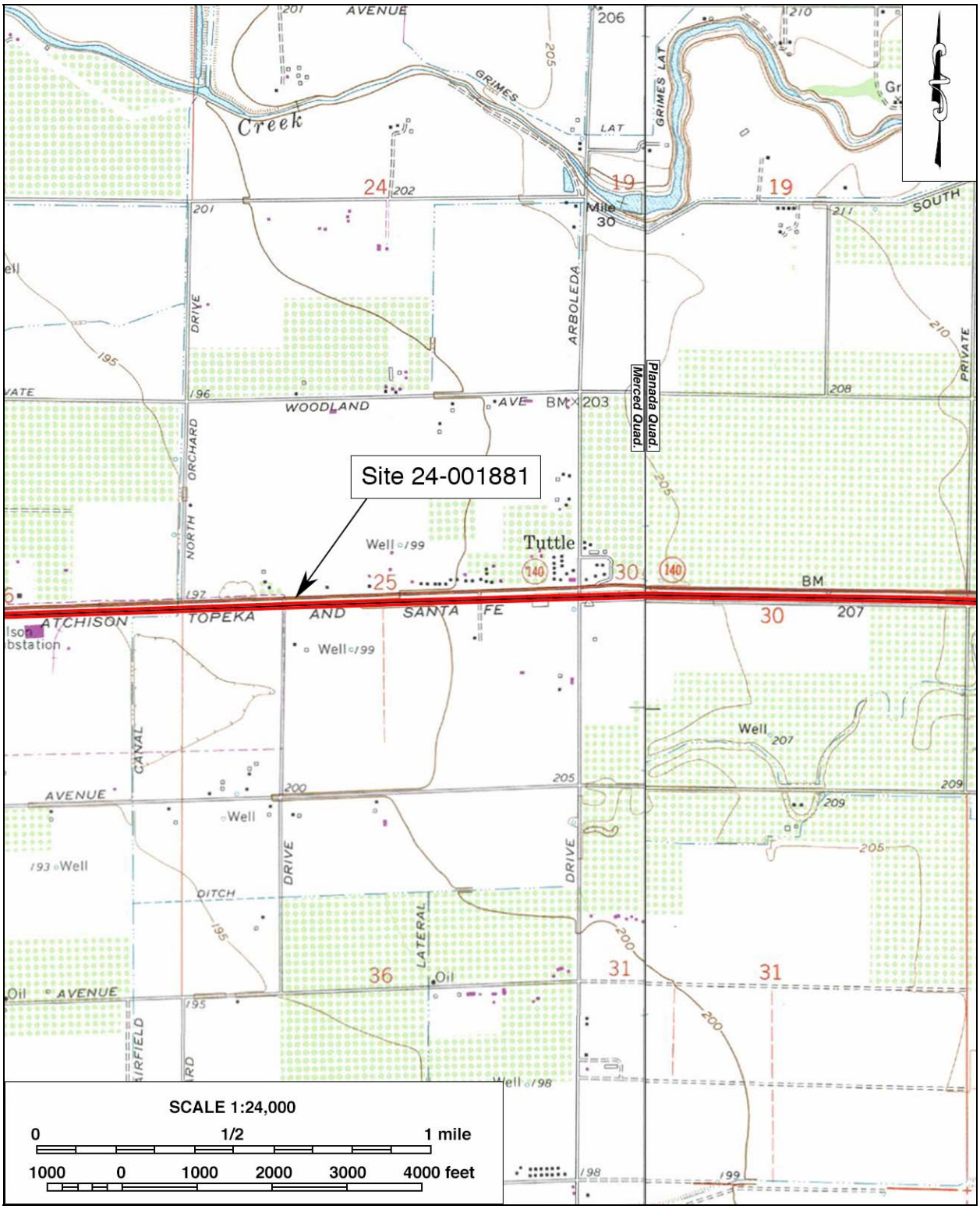
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001881
HRI #
Trinomial

*Resource Name or # (Assigned by recorder) CRM TECH 2312-1H

*Map Names: Merced, Calif./Planada, Calif.
*Scale: 1:24,000
*Date of Maps: 1973 and 1987 editions



*Required information

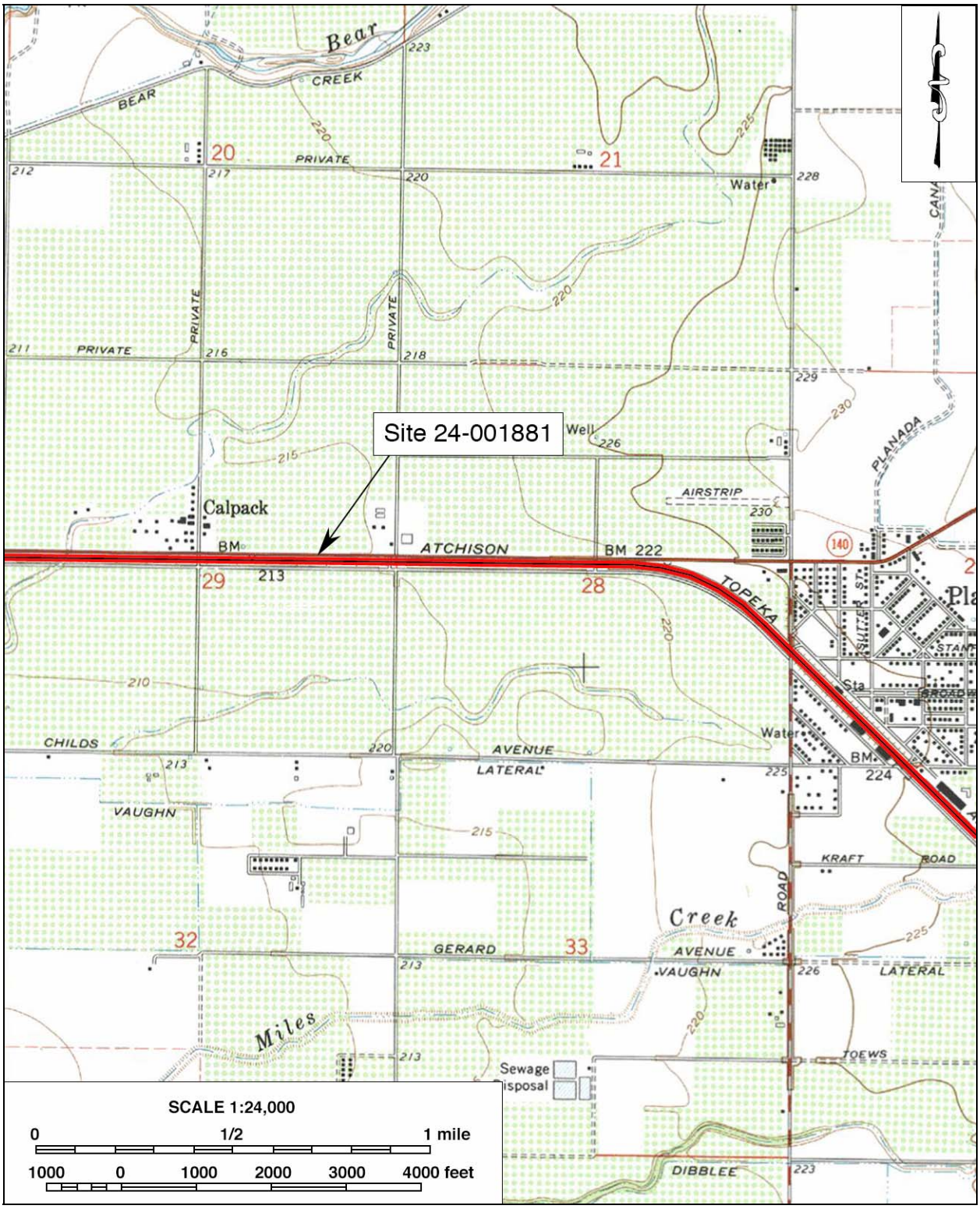
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001881
HRI #
Trinomial

*Resource Name or # (Assigned by recorder) CRM TECH 2312-1H

*Map Name: Planada, Calif. *Scale: 1:24,000 *Date of Map: 1961, photo-inspected 1973



*Required information

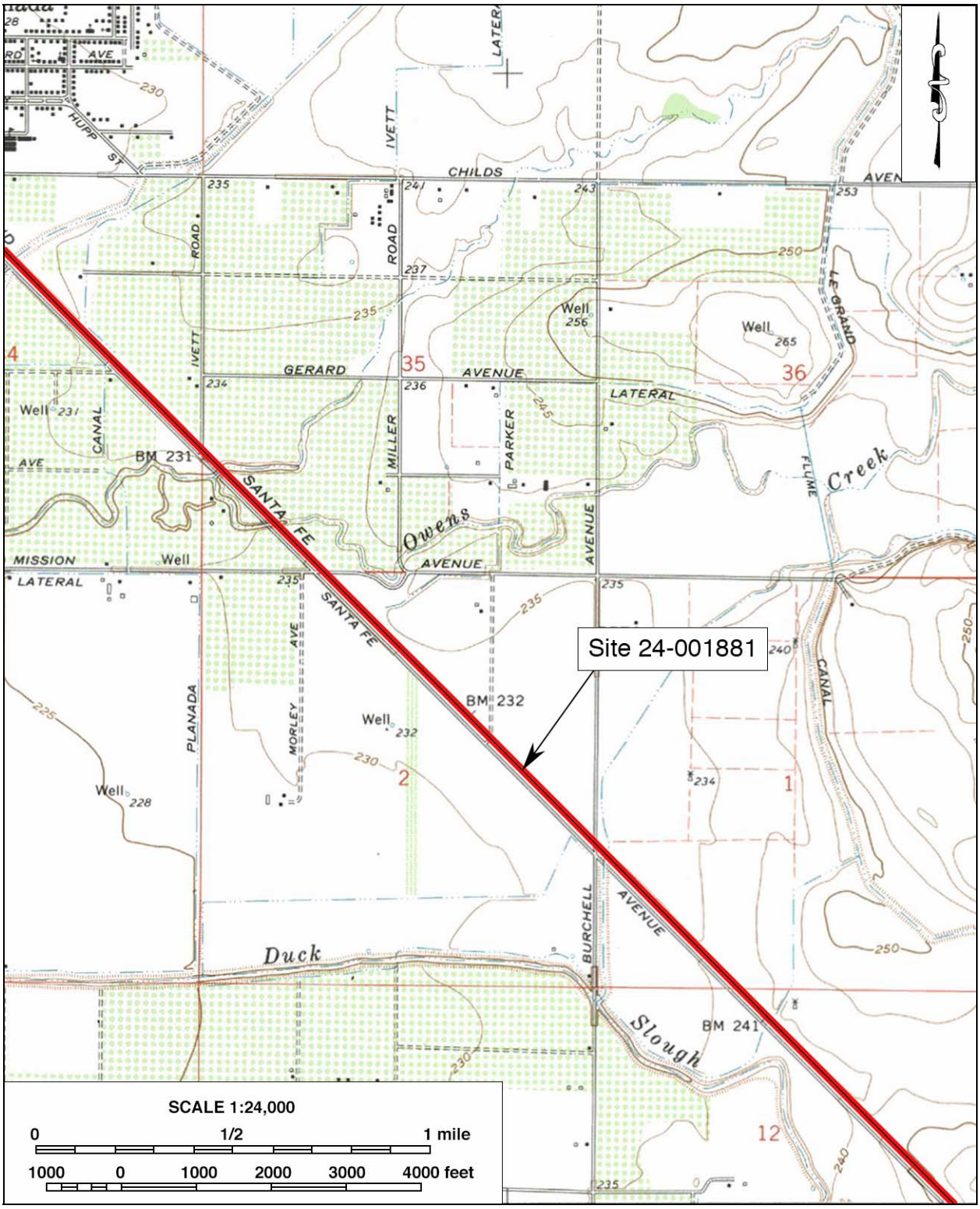
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001881
HRI #
Trinomial

*Resource Name or # (Assigned by recorder) CRM TECH 2312-1H

*Map Name: Planada, Calif. *Scale: 1:24,000 *Date of Map: 1961, photo-inspected 1973



*Required information

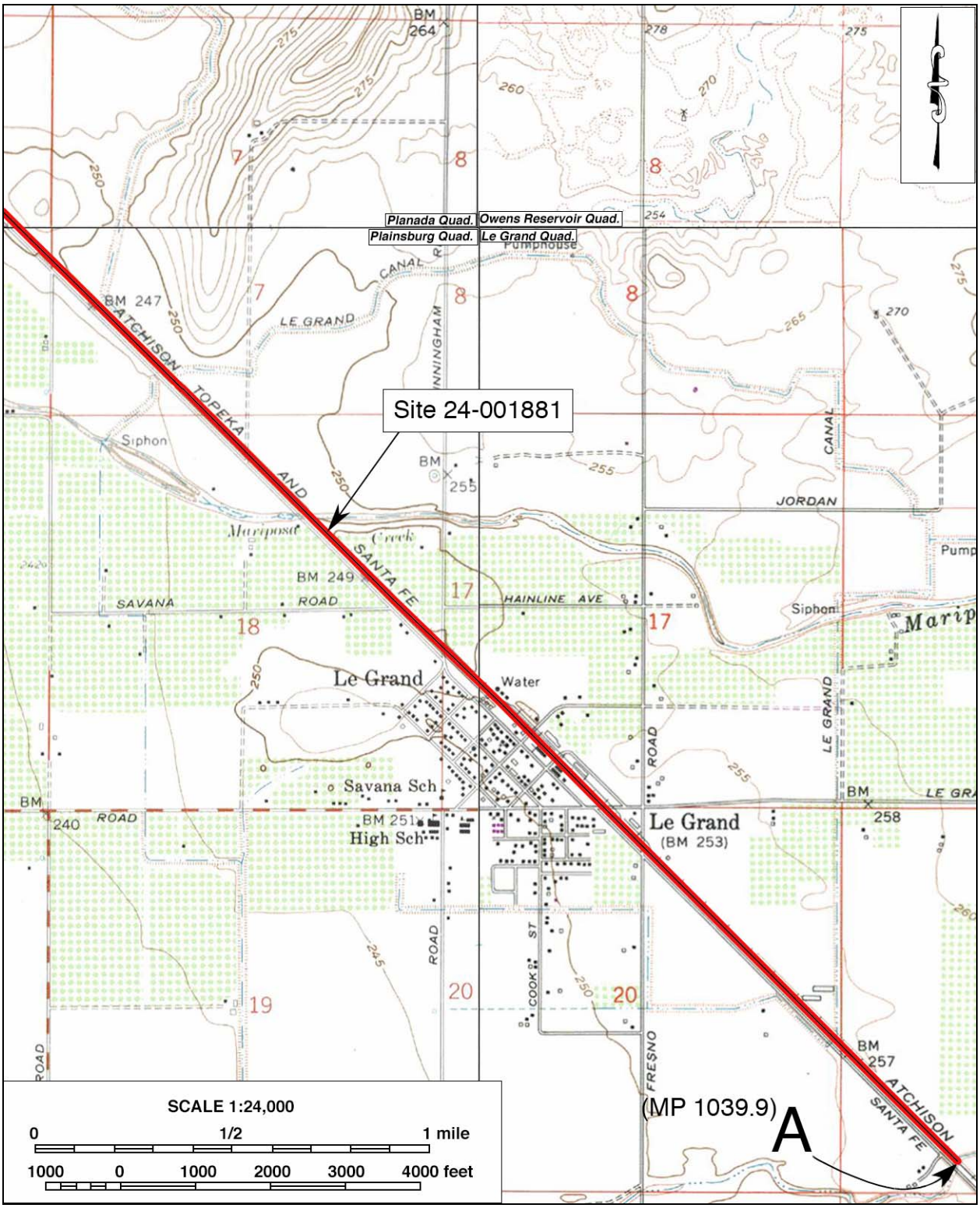
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 24-001881
HRI #
Trinomial

*Resource Name or # (Assigned by recorder) CRM TECH 2312-1H

*Map Names: Le Grand, Calif./Plainsburg, Calif./Planada, Calif. *Scale: 1:24,000
*Date of Maps: 1973, 1976, and 1981 editions



*Required information

Photo Taken by Josh Smallwood *Date February 2, 2009 • Continuation ___Update

Typical view of the existing railroad line (MP 1048.47)

Photo Taken by Josh Smallwood ***Date** February 2, 2009 • Continuation ___Update

Abandoned isolated telegraph pole along the south side of the track (MP 1046.1)

Photo Taken by Josh Smallwood *Date February 2, 2009 • Continuation ___Update

Concrete culvert with date stamp of 1923 (MP 1041.5)

ATTACHMENT C

ARCHAEOLOGICAL SURVEY REPORT

ATTACHMENT C

ARCHAEOLOGICAL SURVEY REPORT

Le Grand to Merced, CA Double Track Project
BNSF Railway Company Mainline Track (MP 1039.9 to MP 1056.4)
Merced County, California
Caltrans District 10

Prepared by:

Michael Hogan, Ph.D., Principal Investigator
Josh Smallwood, M.A., Historical Archaeologist
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Prepared for:

Rick Deming, Environmental Branch Chief
Caltrans Division of Rail-MS 74
1120 N. Street, Room 3400
Sacramento, CA 95814

CRM TECH Contract #2312
Approximately 16.5 linear miles
USGS Merced, Planada, Plainsburg, and Le Grand, Calif., 7.5' Quadrangles
T7S R14-15E, T8S R15-16E, MDBM
Sites 24-001877 to -001881

March 13, 2009

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SUMMARY OF FINDINGS

As part of its program to improve rail transportation services, the State of California Department of Transportation, Division of Rail, proposes an undertaking to upgrade the capacity of the Burlington Northern Santa Fe (BNSF) Railway's Central Valley mainline from Milepost (MP) 1039.9 to MP 1056.4, through the towns of Le Grand, Planada, and Merced in Merced County, California. The present Archaeological Survey Report (ASR), as a component of the Historic Property Survey Report (HPSR), is prepared to identify any archaeological resources within or immediately adjacent to the undertaking's Area of Potential Effects (APE), pursuant to Section 106 of the National Historic Preservation Act, as implemented through federal regulations outlined in 36 CFR 800, and with the California Environmental Quality Act (CEQA).

The purpose of the report is to identify any archaeological resources that may exist within the APE, which is delineated to encompass the maximum extent of ground disturbances as required by the project design. The scope of the study included a standard records search, historical background research, correspondence with local Native American representatives, consultation with local government agencies and the local area historical society, and a systematic field survey. The field survey of the APE was conducted on February 2, 2009. A total of six non-archaeological historic-period buildings and features of built environment were identified during the field survey, as documented in the accompanying Historical Resources Evaluation Report (HRER; see HPSR Attachment B).

Throughout the course of the survey, no archaeological resources, either prehistoric or historic in age, were encountered within or adjacent to the APE. Other than poor visibility of the ground surface, the archaeological field survey experienced no major constraints. The entire APE was previously graded for construction of the railway as early as 1895-1897, and has since been disturbed through routine maintenance and upgrades to the track and ballast over the last 100 years. Consequently, it is unlikely for any significant, intact archaeological remains dating to the prehistoric or early historic period to be encountered during the undertaking. Furthermore, no archaeological remains, other than concrete slabs and pieces of concrete, were found at or near the six non-archaeological sites identified during the survey, and no evidence was found to suggest that buried archaeological materials exist at these locations.

No further archaeological investigations will be necessary for this undertaking. However, if previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

INTRODUCTION

As part of its program to improve rail transportation services, the State of California Department of Transportation, Division of Rail, proposes an undertaking to upgrade the capacity of the Burlington Northern Santa Fe (BNSF) Railway's Central Valley mainline from Milepost (MP) 1039.9 to MP 1056.4, through the towns of Le Grand, Planada, and Merced in Merced County, California (see HPSR Attachment A, Maps 1, 2). The present Archaeological Survey Report (ASR), as a component of the Historic Property Survey Report (HPSR), is prepared to identify any archaeological resources within or immediately adjacent to the undertaking's Area of Potential Effects (APE), pursuant to Section 106 of the National Historic Preservation Act, as implemented through federal regulations outlined in 36 CFR 800, and with the California Environmental Quality Act (CEQA).

The purpose of the report is to identify any archaeological resources that may exist within the APE, which is delineated to encompass the maximum extent of ground disturbances as required by the project design (see HPSR Attachment A, Maps 3a, 3b, 3c). The scope of the study included a standard records search, historical background research, correspondence with local Native American representatives, consultation with local government agencies and the local area historical society, and a systematic field survey. The archaeological field survey of the APE was conducted on February 2, 2009 by historical archaeologist/ architectural historian Josh Smallwood, M.A., and prehistoric archaeologist Daniel Ballester, B.A., under the direction of principal investigators Michael Hogan, Ph.D., and Bai "Tom" Tang, M.A. (see Appendix 1 for qualifications).

Project archaeologist and Native American Liaison Laura H. Shaker, B.S. (see App. 1), corresponded with the Native American representatives, and Robin L. Hards, Assistant Research Technician at the Central California Information Center conducted the records search for this project (CCIC File #7292-I).

PROJECT LOCATION AND DESCRIPTION

The proposed undertaking entails the construction of a second mainline track, upgrades to the existing mainline, installation of power crossovers and turnouts, extension of culverts, and the removal of existing turnouts. The APE measures approximately 16.5 miles long and between 100 and 250 feet wide, large enough to accommodate all construction activities for the project (see HPSR Attachment A, Maps 2, 3a-c). The new track will be installed parallel to and within 15 feet of the existing BNSF main track. The APE is confined entirely within the existing BNSF right-of-way, lying within portions of Sections 19, 20, 25, 26, 27, 28, and 29, T7S R14E; Sections 27, 28, 29, 30, 34, and 35, T7S R15E; Sections 1, 2, 12, and 29, T8S R15E; and Sections 7, 17, 18, 20, and 21, T8S R16E, Mount Diablo Base Meridian. It is delineated to encompass the maximum extent of ground disturbances as required by the project design (see HPSR Attachment A, Maps 3a-c).

The APE is situated in both urbanized and rural agricultural settings of southern Merced County. The natural environment of the APE has been altered in the past through grading and development of the railway's right-of-way with track, ballast, and service roads since its construction in the 1890s. The APE is bounded by commercial and residential buildings, agricultural and undeveloped land, and paved roads.

SOURCES CONSULTED

RECORDS SEARCH

In January 2009, the Central California Information Center (CCIC) at California State University, Stanislaus, performed a historical/archaeological resources records search on the APE. During the records search, the following sources were consulted for a complete inventory of previously identified cultural resources in or near the APE and existing cultural resources reports pertaining to the vicinity:

- National Register of Historic Places;
- California Register of Historical Resources;
- California Historical Landmarks (1996 and updates);
- California Points of Historical Interest (May 1992 and updates);
- Historic Property Data File;
- Archaeological Determinations of Eligibility (2008);
- California Historical Resource Inventory.

The results of the records search indicate that the BNSF railroad line within the APE has not been previously recorded or evaluated for significance. The Bradley Overhead (Site 24-000648; Bridge No. 39-0044), located within the APE at Milepost 1053.9, was previously recorded and evaluated by Caltrans and is slated for demolition in 2009 as part of a future grade-separation project (Brewer 2001). During its evaluation, the bridge was considered to have good historical integrity and determined historically significant under Criteria A and C of the National Register of Historic Places (*ibid*.:4). Two canals dating to the mid-20th century, known as the Fairfield and the Hartley/Doane (Sites 24-000606 and 24-000607), have been recorded along State Route 140 within close proximity of the APE. Further discussion on the Bradley Overhead and the Fairfield and the Hartley/Doane canals as they pertain to the current undertaking is presented in the accompanying Historical Resources Evaluation Report (see HPSR Attachment B) and the Memorandum on the Bradley Overhead (see HPSR Attachment D).

Within a one-mile radius of the APE, numerous historic-period buildings and structures have been previously recorded in the downtown portion of Merced, including properties identified as eligible for the National Register of Historic Places. Many of these buildings were located within the boundaries of designated historic districts. The types of buildings and built-environment features recorded within these districts are many, including commercial, educational, governmental, industrial, medical, residential, religious, and social buildings as well as cemeteries. They generally span in age from the 1870s to the 1940s. None of these buildings or historic districts were located within close proximity of the APE, and thus they require no further consideration during this study. The presence of so many historic buildings and districts in the Merced area, however, attests to the development and prosperity of the town since the late 19th century.

HISTORICAL BACKGROUND RESEARCH

In conjunction with the records search, Bai "Tom" Tang and Josh Smallwood conducted a general historical background research on the basis of historic maps of the project vicinity and published literature in local/regional history and the history of the Atchison, Topeka and Santa Fe Railway (ATSF), forerunner of BNSF in California. Among maps consulted were the U.S. General Land Office's (GLO) land survey plat maps produced in the mid-19th century and the U.S. Geological Survey's (USGS) topographic maps dated 1917-1919, 1947-1948, and 1960-1961. These maps are collected at the Science Library of the University of California, Riverside, and the U.S. Bureau of Land Management located in Sacramento.

In addition to the sources listed above, on-line publications on the history of Merced County available through the Merced County Historical Society web page and online excerpts of *History of Merced County, California*, by John Outcalt (1925), were consulted during this phase of the research. Findings from these sources are presented in the "Background" section below.

CONSULTATION WITH LOCAL COMMUNITY

As part of the study, the planning departments of Merced County and the City of Merced were contacted to identify any cultural resources of local historical interest that may be present within or adjacent to the APE, and to solicit from the local community any other comments regarding cultural resources issues (see HPSR Attachment E). When reached by telephone on February 12, 2009, City Planner Bill King expressed no immediate cultural resources concerns over the APE, but was interested in reviewing the data gathered thus far before making an official comment.

Oksana Newmen of the County of Merced Planning and Community Development Department suggested CRM TECH contact the Merced County Historical Society and the Central California Information Center at CSU, Stanislaus, to find information on historical resources in the area. She stated no other concerns about the proposed undertaking.

A written request for similar information was also sent to the Merced County Historical Society (see HPSR Attachment E), the nearest local historical organization identified by the American Association for State and Local History and the California Historical Society. An e-mail describing the proposed undertaking was sent to the society on February 12, 2009. Society representative Sarah Lim was contacted by telephone on February 16. She said she received the e-mail and would review the project before responding with comments. She was contacted through e-mail again on March 2, and has since responded with no concerns.

NATIVE AMERICAN PARTICIPATION

On January 13, 2009, the State of California's Native American Heritage Commission (NAHC) was contacted in writing to request a records search in the commission's sacred lands file (see HPSR Attachment F). In response, the NAHC reports in a letter dated February 24, 2009, that the sacred lands records indicate no Native American cultural resources in the immediate vicinity of the APE (see HPSR Attachment F). However, noting that "the absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area," the NAHC suggested that

local Native American representatives be consulted, and provided a list of potential contacts in the region.

Following the NAHC's recommendation, CRM TECH contacted all five Native American representatives on the reference list, both in writing and by telephone, between February 24 and March 2, 2009, to solicit their input regarding any possible cultural resources concerns over the proposed undertaking (see HPSR Attachment F). As of this time, Katherine Perez of the North Valley Yokuts Tribe and Edward Ketchum of the Amah Mutsun Tribal Band have responded to the inquiries (see HPSR Attachment F).

In a telephone conversation on February 25, 2009, Ms. Perez informed CRM TECH that the North Valley Yokuts Tribe does not have any specific concerns regarding the APE, but requested to be notified of any Native American cultural resource discoveries in the APE. In e-mails dated February 25 and 27, 2009, Mr. Ketchum requests that ethnographic information regarding the indigenous people of the Merced area be included in the cultural resources report (see HPSR Attachment F). No specific properties of Native American traditional cultural value were identified by any of the individuals or organizations that have responded.

BACKGROUND

ENVIRONMENT

Merced County is located to the southeast of San Francisco and northwest of Fresno in the northern portion of the San Joaquin Valley. It is intersected by the Merced River, a major waterway that winds its way down from the western Sierra Nevada and empties into the principal watercourse of the region, the San Joaquin River. The county seat, Merced, has a population of more than 80,000 (City of Merced n.d.). The city lies a short distance to the west of Yosemite and is one of the principal gateways for tourists to reach the national park. It is also home to the newest addition to the California State University system, the campus of CSU Merced, opened in 2005.

Merced County has an area of 1,972 square miles, stretching from the foothills of the Sierra Nevada, across the low, wide open plains, westward to the summit of the Coast Range (Hooper and Harris n.d.). The climate and environment of the county are typical of the Central Valley region, characterized by temperate summers nearing 90 degrees Fahrenheit and cool, wet winters that dip to near freezing in temperature. Average annual precipitation in the county is 8-12 inches.

The APE traverses urban, rural, and agricultural areas of southern Merced County, across an environment that has been greatly altered in the past. The existing BNSF railroad track rests on a raised berm of earth and crushed rock. Also noted within the APE were numerous concrete culverts that cross beneath the tracks and wood truss bridges that cross over minor waterways, each of which apparently date to the historic period.

ARCHAEOLOGY

In order to facilitate a better understanding and discussion of ancient history, anthropologists and archaeologists have divided the Holocene (roughly the last 10,000

years) into several periods, each distinguished from the others by its cultural remains discovered in archaeological sites. A possible chronological framework for the San Joaquin Valley has been developed on the basis of archaeological studies conducted by Hewes and Wedel in the 1930s-1940s, Olsen and Payen in the 1960s, and Fredrickson and Grossman in 1977 (Moratto 1984:185-191). It consists of six periods that mark changes in the archaeological record reflecting different ways that the Native peoples adapted to their environment as well as influences on their culture from groups located in adjacent regions.

Early Man (10,000 years ago to 8,000 years ago) At a site dating to this period near Tranquility in Fresno County, Hewes noted similarities between the artifacts in the San Joaquin Valley and those found in the Delta region. There, he found highly permineralized human skeletons and a possible—but debated—association with bones of extinct bison, camel, and horse (Moratto 1984:65). *Olivella* beads, stemmed and concave-base stone points, quartz crystals, and pestles were among the artifacts found at the site (*ibid*.). In most culture regions, stones for grinding food products, known as millingstones, are rarely found at sites dating to this early period. This is partly why the date of this site is debated. Furthermore, inconsistencies in stratigraphic layering lead most archaeologists to believe that the site was occupied much later and that the artifacts are not associated with the fossilized extinct mammals found there. Known cultural sites of this age are rare in the San Joaquin Valley.

Western Pluvial Lakes Tradition (8,000 years ago to 5,000 years ago) Wedel, and later Fredrickson and Grossman, excavated middens in the southern part of the San Joaquin Valley and found that the deepest buried component dated to 8,000 years ago, associated with habitation along or near pluvial lakes (Moratto 1984:186). The earliest stratum yielded fragments of large points, crescents, a scraper, knife fragments, a stone atlatl engaging spur, and burned and unburned fragments of *Anodonta* (freshwater mussel) shell (*ibid*.:99). Conversely, artifacts from the upper strata, representing later periods, included hearths, manos, millingstones, heavy stemmed points, a mortar, red ochre, and extended caliche-encrusted burials.

Positas Complex (5,000 years ago to 4,000 years ago) Based on Olsen and Payen's excavations in Merced County in the 1960s, this complex is distinguished by small, shaped mortars, short, cylindrical pestles, millingstones for food grinding, perforated flat cobbles, and spire-lopped *Olivella* beads (Moratto 1984:191).

Pacheco Complex (4,500 years ago to 2,000 years ago) This complex is recognized by extended and flexed burials, bowl mortars and shaped pestles, squared and tapered stemmed projectile points, bone awls and grass saws, and distinctive styles of *Olivella* and *Haliotis* beads and ornaments, similar to the assemblage of the Delta region's Late Horizon and thus providing a correlation between the groups.

Gonzaga Complex (2,000 years ago to 1,000 years ago) This period is marked by foliate bifaces, several different styles of *Olivella* beads and *Haliotis* ornaments, bone awls, whistles, and grass saws, large stemmed and side-notched points, and abundant millingstones, mortars, and pestles (Moratto 1984:192). The evidence suggests that heavy trade occurred with the coastal groups at that time, probably via tribal groups in the Delta region.

Panoche Complex (1,000 years ago to 1850 A.D.) Evidenced at many sites in the western portion of the San Joaquin Valley, this period features large circular structures, flexed burials, primary and secondary cremations, millingstones, mortars and pestles, bone awls, saws, whistles, sucking tubes, small side-notched arrow points, clamshell disk beads, *Haliotis* disk beads, and a variety of *Olivella* bead types (Moratto 1984:192). Again, the assemblages were similar to those found in the Delta region, suggesting similar material culture, trade, and probable influence from those groups.

ETHNOGRAPHY

The region around the APE is generally acknowledged as the traditional homeland of the Northern Valley Yokuts. Very little is known about this group of Native Americans due to their almost total disappearance as a result of diseases, missionization, and the overrunning of their territory by miners and settlers in the mid- and late 19th century. Some information regarding the Northern Valley Yokuts, however, has been extracted from historical documents and archaeological records to provide a glimpse of their culture. The following ethnographic discussion of the Northern Valley Yokuts is based mainly on Wallace (1978).

The territory of the Northern Valley Yokuts lies basically within the northern San Joaquin Valley, extending from the present-day Stockton-Lodi area southward to the Madera-Fresno area. Most of the population lived near the San Joaquin River and its tributaries. Their main food staples were most likely fish, waterfowl, wild seeds, and tule roots, which were secured and processed with baskets and various tools made of stone, wood, or bone. Earthenware pots, produced by other Native American groups to the south and obtained through trade, appear to have been used infrequently. The basis of the Northern Valley Yokuts' social unit was probably the biological family, with the society divided into two totemic moieties. Tribal affiliation was based on sedentary village life, made possible by the abundance of natural resources, although travel and trade were also an important aspect of Northern Valley Yokuts culture.

The native lifeways of the Northern Valley Yokuts eroded gradually and the population declined progressively after the first casual contacts with Spanish colonizers in the late 1700s and early 1800s. Proselytizing and missionization in the area began in earnest in the early 1800s, with dramatic effects on the native society. The secularization of the missions in 1834, combined with the decline in population, resulted in the amalgamation of various tribal fragments and a further breakdown in Northern Valley Yokuts culture. During the Gold Rush years of 1848-1850, the Northern Valley Yokuts lost almost all of their traditional territory, and were eventually settled by the U.S. authorities on the Fresno and Tule River Reserve, among other reservations. Today, the few remaining survivors of Northern Valley Yokuts descent are scattered among other Native Americans or the general population.

Little is known of the Northern Valley Yokuts material culture as well. According to Wallace (1978), no ethnographic examples have survived in museums or private collections to illustrate the kinds of articles manufactured and the technical processes employed by the Northern Valley Yokuts. It is likely, based on the archaeological evidence, that the material culture was similar to those of the tribes of the Delta region, especially with regard to

clothing and adornment, structures, basketry, millingstones, chipped-stone tools, and shell and bone artifacts.

Their dwellings, according to one early 19th century account, were made of bunched or woven tules. The tule, an abundant local material that grows in wet areas, was employed to make mats, rafts, and some kinds of baskets as well. The floors of the dwellings were often sunken down and covered with hard-packed dirt or clay. Sweathouses and ceremonial chambers were among the structures that were built. Trade relations with the Miwuk of the Delta region to the north were documented in historic chronicles. According to at least one account, the Northern Valley Yokuts obtained finely crafted bows and arrows from the Miwuk in exchange for dog puppies (Wallace 1978:465).

HISTORY

Early Exploration and Settlement in the Spanish/Mexican Periods

The first European visitor to Merced County was the Spanish soldier and explorer Gabriel Moraga in 1806, leading an expedition of 25 men into the northern part of the central valley on the trail of some Indian horse-thieves. Along the way, parched from a long and arduous journey across the barren valley floor, he came across a refreshing stream and named it "the River of Our Lady of Mercy," later condensed to "Merced" (Hooper and Harris n.d.). During numerous subsequent journeys across the valley east of the Coast Range, Moraga searched for suitable sites to establish missions and presidios under direction of Governor José Joaquín de Arrillaga. A possible site was chosen at a location along the Merced River near the present town of Merced, but this plan never came to fruition.

In 1822, the newly independent Mexican government officially took over Alta California from the Spanish. Internal problems hindered much exploration of the San Joaquin Valley, except for excursions to recover stock and punish Indians. Still, plans for missions and presidios in the central valley were never completed, and no settlement of the Merced area occurred under the Mexican regime (Hooper and Harris n.d.). The American trapper, Jedediah Smith, traveled through the northern San Joaquin Valley, possibly crossing the Merced River in 1827 as he meandered his way out of California en route to Salt Lake City, fur-trapping and trading with the Indians along the way (*ibid*.). The routes established by Smith and other American explorers in Alta California near the end of Mexican rule paved the path for early settlers after American annexation of the territory.

Growth and Urbanization since the American Annexation

After the American annexation of Alta California in 1848, Americans slowly began to migrate from the eastern states and settle in the northern San Joaquin Valley, some in search of gold in the nearby hills, and others interested in farming and ranching. Grain and cattle were the primary sources of industry through the 1870s and the population grew slowly during that time, as the whole nation was in a state of recession and California had little else but open land to offer. Still, by 1855 there was enough of a population to carve out an area from Mariposa County to create Merced County. Most of the settlement occurred along the Merced River where some of the first irrigation systems were put in place by the Crocker-Huffman Land and Water Company. Other canal systems were

constructed through the 1870s, later to be bought up by Crocker-Huffman, who in turn was absorbed by the Merced Irrigation District in the 1920s (Hooper and Harris n.d.).

The completion of the San Joaquin Valley Railroad (SJVRR) Company's railway through Merced County sparked the founding of the town of Merced in January and February of 1872. The lots were sold fast, and construction of numerous commercial buildings near the train stop began immediately and rapidly. In the course of three months, the town boasted a fine four-story hotel of 175 rooms and claimed to be the most prosperous and flourishing town between Stockton and Los Angeles (Hooper and Harris n.d.). The SJVRR line was purchased the next year by the Southern Pacific Railroad Company, whose freight charges and passenger fares were too exorbitant for most farmers and severely hampered the prosperity of the agricultural region. But this would all change with the coming of a second transcontinental railroad to California, as rate wars between the railroad companies would provide a perfect opportunity for many Easterners to move westward into California.

A second railway through Merced County, the San Francisco and San Joaquin Valley (SF&SJV) Railway, was constructed from Stockton to Bakersfield in 1895-1897 (Gustafson and Serpico 1996:159). The line was acquired by the Atchison, Topeka, and Santa Fe Railway (ATSF) in 1899 and became a part of the ATSF's first line to reach the port of San Francisco. The ATSF line, now the Burlington Northern Santa Fe Railway, has followed the same route through the APE since the late 1890s (USGS 1917; 1918; 1919; 1947a; 1947b; 1948a; 1948b). It was during this time, and as a result of the construction of the railway, that the communities of Le Grand and Planada came into being. Originally sidings along the railroad, these two communities have remained largely rural in character throughout the historic period and to the present day (*ibid.*).

In the early days, grains such as wheat, barley, and rye were the principal crop of the region, but the advent of the railroad through the valley made it possible to cultivate and transport fruits and vegetables as well (Hooper and Harris n.d.). Thus, orchards and fields of sweet potatoes began to crop up throughout the region in the 1880s (*ibid.*). Farming and cattle-raising remained a prevalent part of the economy throughout the late-19th century and majority of the 20th century.

The post-WWII era brought prosperity to the American economy and there was a population explosion throughout the urban areas of central California, assuming a dominating influence in local economical growth. In most recent years, the large stretches of farmlands in and near the City of Merced have become prime targets for tract home developers, which has had a major impact on the area's population. The estimated population of the county in 2006 was 245,000, an increase of nearly 20% since 2000, and up from 90,000 in 1960 (Census Bureau n.d.; Forstall n.d.).

The Atchison, Topeka, and Santa Fe Railway in the APE

As mentioned above, the rail line through the APE was originally built in 1895-1897 as part of the SF&SJV, and has served as a part of the ATSF (now BNSF) mainline in the Central Valley since 1899. The ATSF "invasion" spelled the end of the Southern Pacific Railway Company's virtual monopoly on modern transportation in California, which left profound and far-reaching impacts on the political, economic, and social life of the state. Most

directly, the coming of a competing rail system served as a major boost to the growth of the Central Valley and the entire state.

With the dawn of the automobile age, the trucking industry, and ultimately the rise of civilian airlines, the once powerful railroad companies fell rapidly from their dominant position in long-distance transportation in the U.S. during the first half of the 20th century. In particular, passenger traffic increasingly shunned the railroads in the post-WWII era, effectively relegating the glamorous passenger trains to the status of relics by the 1960s-1970s.

The 1896 Le Grand depot, one of the last survivors among them, was moved from its original location in 1966 (Gustafson and Serpico 1996:169). Today, it stands along the tracks adjacent to the APE, one-tenth of a mile to the northwest of its original location. One by one, the railroad depots along this stretch of the ATSF line were closed and removed. Although the rail line remains active today, the demise of the depots, once the pride of the communities they served, marked unmistakably the end of the golden age for the steel rails.

FIELD METHODS

On February 2, 2009, Josh Smallwood and Daniel Ballester performed the historical and archaeological field survey of the APE. As mentioned above, the APE is located entirely within the existing right-of-way of the BNSF Railway, and in light of the extensive disturbances in the past, such as grading, is considered relatively low in sensitivity for archaeological resources. Therefore, the majority of the APE was surveyed at a reconnaissance level from a motor vehicle.

While driving along roads adjacent to the existing BNSF main track, Smallwood and Ballester inspected both sides of the track for any areas that may contain evidence of human activities dating to the prehistoric or historic periods (i.e., 50 years ago or older). Potentially sensitive areas, such as level embankments near natural waterways that may have provided prehistoric Native Americans with a favorable habitation area, and areas that were inaccessible by vehicle, were inspected by walking along the route. The archaeological survey covered all areas where construction activities and/or other ground disturbances may occur during the project.

Smallwood and Ballester encountered and recorded a total of six non-archaeological cultural resources within the APE, such as historic-period buildings and built-environment features, as documented in the accompanying Historical Resources Evaluation Report (see HPSR Attachment B). No archaeological materials were discovered during the field survey of the APE.

STUDY FINDINGS AND CONCLUSIONS

Throughout the course of the survey, no archaeological resources, either prehistoric or historic in age, were encountered within or adjacent to the APE. Other than poor visibility of the ground surface, the archaeological field survey experienced no major constraints.

The entire APE was previously graded for construction of the railway as early as 1895-1897, and has since been disturbed through routine maintenance and upgrades to the track and ballast over the last 100 years. Consequently, it is unlikely for any significant, intact archaeological remains dating to the prehistoric or early historic period to be encountered during the undertaking. Furthermore, no archaeological remains, other than concrete slabs and pieces of concrete, were found at or near the six non-archaeological sites identified during the survey, and no evidence was found to suggest that buried archaeological materials exist at these locations.

As mentioned above, a number of non-archaeological cultural resources, such as historic-period buildings and features of built environment, were recorded within the APE, as discussed in the accompanying Historical Resources Evaluation Report (see HPSR Attachment B). No further archaeological investigations will be necessary for this undertaking. However, if previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

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1947a Map: Le Grand, Calif. (7.5', 1:24,000); surveyed in 1915, culture revised 1946.

1947b Map: Plainsburg, Calif. (7.5', 1:24,000); surveyed in 1916, culture revised 1946.
1948a Map: Merced, Calif. (7.5', 1:24,000); surveyed in 1914, culture revised 1946.
1948b Map: Planada, Calif. (7.5', 1:24,000); surveyed in 1915, culture revised 1946.

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APPENDIX 1

PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/ARCHAEOLOGIST
Michael Hogan, Ph.D., RPA*

Education

1991	Ph.D., Anthropology, University of California, Riverside.
1981	B.S., Anthropology, University of California, Riverside; with honors.
1980-1981	Education Abroad Program, Lima, Peru.

2002	Section 106—National Historic Preservation Act: Federal Law at the Local Level. UCLA Extension Course #888.
2002	"Recognizing Historic Artifacts," workshop presented by Richard Norwood, Historical Archaeologist.
2002	"Wending Your Way through the Regulatory Maze," symposium presented by the Association of Environmental Professionals.
1992	"Southern California Ceramics Workshop," presented by Jerry Schaefer.
1992	"Historic Artifact Workshop," presented by Anne Duffield-Stoll.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1999-2002	Project Archaeologist/Field Director, CRM TECH, Riverside.
1996-1998	Project Director and Ethnographer, Statistical Research, Inc., Redlands.
1992-1998	Assistant Research Anthropologist, University of California, Riverside
1992-1995	Project Director, Archaeological Research Unit, U. C. Riverside.
1993-1994	Adjunct Professor, Riverside Community College, Mt. San Jacinto College, U.C. Riverside, Chapman University, and San Bernardino Valley College.
1991-1992	Crew Chief, Archaeological Research Unit, U. C. Riverside.
1984-1998	Archaeological Technician, Field Director, and Project Director for various southern California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Author and co-author of, contributor to, and principal investigator for numerous cultural resources management study reports since 1986.

Memberships

* Register of Professional Archaeologists.
Society for American Archaeology.
Society for California Archaeology.
Pacific Coast Archaeological Society.
Coachella Valley Archaeological Society.

PRINCIPAL INVESTIGATOR/HISTORIAN
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History/Historic Preservation, UC Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.
2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1993-2002	Project Historian/Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, UC Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, UC Riverside.
1988-1993	Research Assistant, American Social History, UC Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Honors and Awards

1988-1990	University of California Graduate Fellowship, UC Riverside.
1985-1987	Yale University Fellowship, Yale University Graduate School.
1980, 1981	President's Honor List, Northwestern University, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (With Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

Membership

California Preservation Foundation.

HISTORICAL ARCHAEOLOGIST/REPORT WRITER
Josh Smallwood, M.A.

Education

2008	M.A., Historic Preservation, Savannah College of Art and Design, Savannah, Georgia.
1998	B.A., Anthropology, Humboldt State University, Arcata, California.
1997	Archaeological Field School, Fort Ross State Historic Park, Fort Ross, California.
	Archaeological Field School, Coastal Test and Mitigation Projects, Arcata, California.
1996	Archaeological Field School, Mad River Watershed Surveys, Blue Lake, California.
1994	A.A., Anthropology, Palomar College, San Marcos, California.
1993	Archaeological Field School, San Pasqual Battlefield, San Pasqual, California.
	Archaeological Field School, Las Flores Asisténcia, Camp Pendleton, CA.
1992	Archaeological Field School, Palomar College Campus Late Prehistoric Sites, San Marcos, California.

2002	"Historical Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base.
2001	"OSHA Safety Training for Construction Monitors," presented by OSHA and City of San Diego.
2000	"HABS/HAER Recording Methods for Historic Structures," presented by Robert Case, Historic Archaeologist, Mooney & Associates, San Diego.
1998	"Unexploded Ordinance Training," presented by EOD officers, Fort Irwin National Training Center, Barstow.
1997	"Obsidian Sourcing through Characterization," presented by Thomas Origer, Sonoma State University.
1994-	Extensive study of lithic resource procurement strategies, reduction technology, tool manufacture, and reproduction.

Professional Experience

2002- Project Archaeologist/Report Writer, CRM TECH, Riverside/Colton, California.

- Writer/co-author of cultural resource reports for Section 106 and CEQA compliance.
- Field director in archaeological fieldwork, historic-period building surveys and recordation, historic-period artifact and lithic analysis.
- Historical research using published literature, historic maps, oral interviews, archival records of public agencies, internet sources, and consultation with local historical societies.

1997-2002 Archaeologist for several cultural resource management/environmental consultants, Department of Defense subcontractors, and Humboldt State University.

Cultural Resources Management Reports

Co-author of and contributor to numerous cultural resources studies since 1997.

PREHISTORIC ARCHAEOLOGIST
Daniel Ballester, B.A.

Education

1998	B.A., Anthropology, California State University, San Bernardino.
1997	Archaeological Field School, University of Las Vegas and University of California, Riverside.
1994	University of Puerto Rico, Rio Piedras, Puerto Rico.
2007	Certificate in Geographic Information Systems (GIS), California State University, San Bernardino.
2002	"Historic Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base; presented at CRM TECH, Riverside, California.

Professional Experience

2002- Field Director, CRM TECH, Riverside/Colton, California.
- Report and site record preparation, and supervisory responsibilities over all aspects of fieldwork and field crew.

1999-2002 Project Archaeologist, CRM TECH, Riverside, California.
- Survey, testing, data recovery, monitoring, and mapping.

1998-1999 Field Crew, K.E.A. Environmental, San Diego, California.
- Two and a half months of excavations on Topomai village site, Marine Corp Air Station, Camp Pendleton.

1998 Field Crew, A.S.M. Affiliates, Encinitas, California.
- Two weeks of excavations on a site on Red Beach, Camp Pendleton, and two weeks of survey in Camp Pendleton, Otay Mesa, and Encinitas.

1998 Field Crew, Archaeological Research Unit, University of California, Riverside.
- Two weeks of survey in Anza Borrego Desert State Park and Eureka Valley, Death Valley National Park.

ATTACHMENT D

MEMORANDUM ON
THE BRADLEY OVERHEAD BRIDGE

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

March 13, 2009

Rick Deming, Environmental Branch Chief
Caltrans Division of Rail-MS 74
1120 N. Street, Room 3400
Sacramento, CA 95814

Re: Memorandum on the Bradley Overhead Bridge
Supplement to Historic Properties Survey Report
Le Grand to Merced Double Track Project
BNSF Railway Company Mainline Track (Milepost 1039.9 to MP 1056.4)
Merced County, California
CRM TECH Contract #2312

Dear Mr. Deming:

CRM TECH has compiled this supplement to the Historic Properties Survey Report (HPSR) for the undertaking referenced above in order to provide additional information necessary for project review by the California State Historic Preservation Officer.

The Bradley Overhead (Bridge No. 39-0044; CHRI No. 24-000648), located within the current undertaking's Area of Potential Effects at Milepost 1053.9, was previously recorded and evaluated by Caltrans District 10 and is slated for demolition in 2009 as part of a future grade-separation project that is unrelated to the BNSF Railway double-track project (Brewer 2001; see Appendix 1). During its evaluation, the bridge was considered to have good historical integrity and determined historically significant under Criteria A and C of the National Register of Historic Places (*ibid.*:4). It is thus a "historic property," under Section 106 of the National Historic Preservation Act, is automatically included in the California Register of Historical Resources, and meets CEQA's definition of a "historical resource" (PRC §5024.1(d)1; §5020.1(j)).

The bridge was visited during CRM TECH's field survey of February 2, 2009, and found to be in the same condition as it was when recorded in 2001 (Brewer 2001; see Appendix 1). A Memorandum of Agreement (MOA) for its demolition has been approved by the Federal Highway Administration and the California State Historic Preservation Officer and accepted by the Advisory Council on Historic Preservation (Brewer et al. 2008:18; see Appendix 2). Mitigation of project effects on the Bradley Overhead has been fulfilled with the extensive documentation in a Historic American Engineering Record (Vespermann 2008; see Appendix 3). Therefore, any alterations to the Bradley Overhead that may occur as a result of the proposed BNSF double track project that would have an effect on its historical integrity have already been mitigated through the previous HAER documentation (Brewer et al. 2008:18; see Appendix 2). It should be stated that, while a second mainline track is proposed at the location of the Bradley Overhead, no alterations to the Bradley Overhead have been planned in anticipation of its removal prior to commencement of the BNSF double track project (Engineer's Layout; see Appendix 4).

Tel.: (909) 824-6400 Fax: (909) 824 6405

Based on these considerations, CRM TECH concludes that the proposed BNSF double-track project will have no unmitigated effect on the significance of the historic Bradley Overhead bridge (36 CFR 800.4(d)(1); PRC §21084.1). Because the previous mitigation measures would suffice to mitigate any possible alteration that may occur during this project, the Bradley Overhead bridge requires no further consideration in the Section 106- and CEQA-compliance process with regard to the present study.

Sincerely,

Josh Smallwood, Historical Archaeologist
CRM TECH

References:

Brewer, Chris
2001 California Historical Resources Inventory Record, 24-000648 (update). On file, Central California Information Center, California State University, Stanislaus. (See App. 1)

Brewer, Chris, John Whitehouse, and Aubrie Morlet
2008 Historic American Engineering Record (HAER): State Route 140 Bradley Overhead (Bridge No. 39-0044). Recordation of the Bradley Overhead, EA 10-0G130, State Route 140, 10-MER-140, Post Mile 38.0-39.2. Report prepared by Central California Cultural Resources Branch, California Department of Transportation. On file, Central California Information Center, California State University, Stanislaus. (See App. 2)

Vespermann, Juergen
2008 Letter to Elizabeth Greathouse, Coordinator, Central California Information Center, regarding the current status of the Bradley Overhead; dated December 21. On file, Central California Information Center, California State University, Stanislaus. (See App. 3)

Attachment D, Appendix 1

Brewer 2001

(On File, Central California Information Center)

Attachment D, Appendix 2

Brewer et al. 2008

(On File, Central California Information Center)

Attachment D, Appendix 3

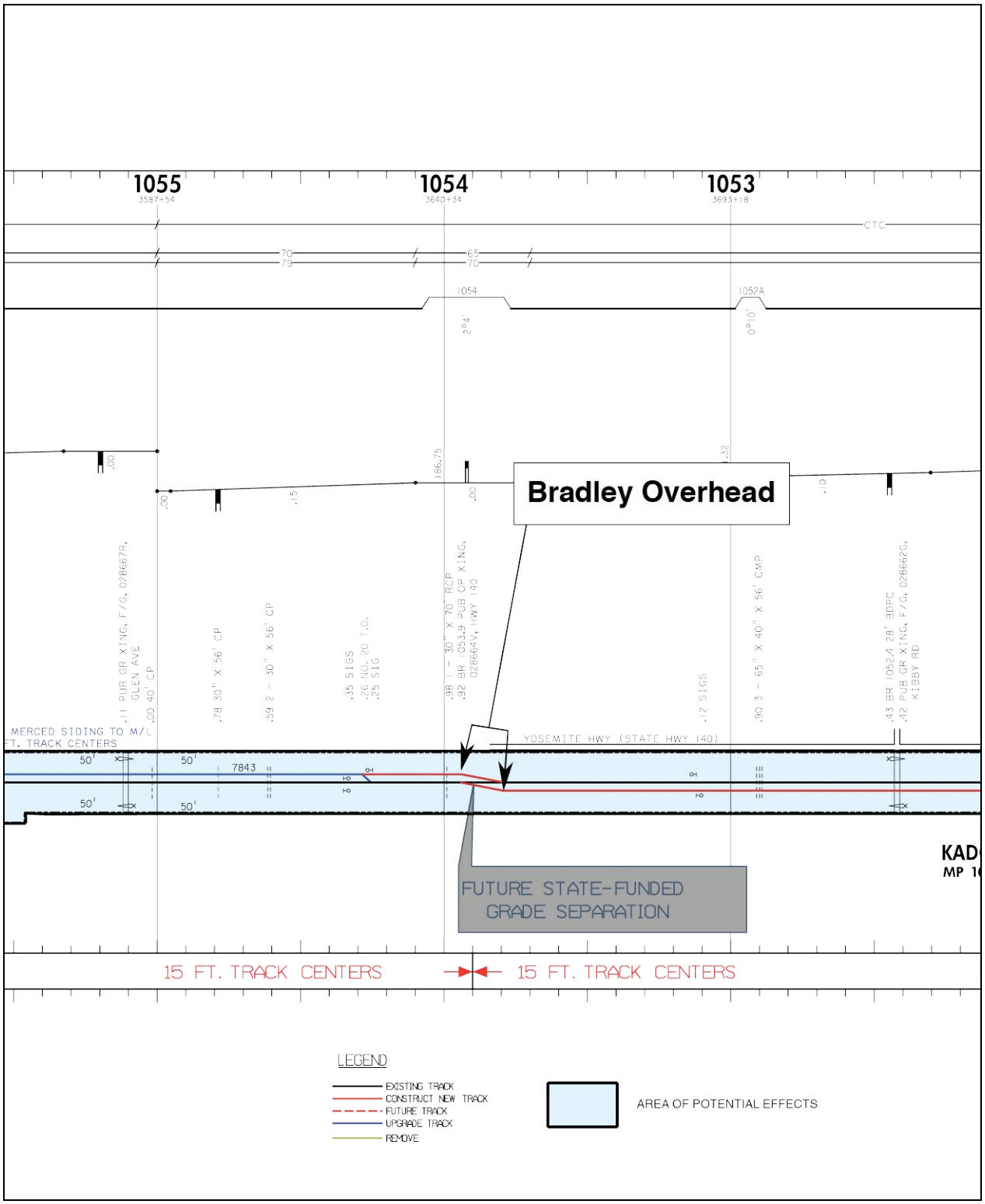
Vespermann 2008

(On File, Central California Information Center)

Attachment D, Appendix 4

BNSF Railway Double Track Project

Engineer's Layout



Location of the Bradley Overhead within the APE.

ATTACHMENT E

CONSULTATION WITH LOCAL COMMUNITY

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

February 12, 2009

Mr. Bill King
City of Merced, Planning Division
678 West 18th Street
Merced, California 95340

RE: Cultural resources/historic preservation input pertaining to the BNSF Railway Company's Le Grand to Merced, CA Double Track Project

Dear Mr. King:

CRM TECH has been hired to conduct the cultural resources study for the proposed project referenced above. One of our responsibilities in this capacity is to consult with the local government to determine if there are any cultural resources concerns at or near the location of the above referenced project (Fig. 1). This document is provided to assist you with any concerns you may have regarding this project and the possibility of impacts on cultural resources. Please contact me at your earliest availability to give your response.

As part of its program to improve rail transportation services, the State of California Department of Transportation, Division of Rails proposes a project to upgrade the capacity of the Burlington Northern Santa Fe (BNSF) Railway's main line, from Milepost (MP) 1039.9 to MP 1056.4, between Le Grand and Merced in Merced County (Fig. 1). The proposed project entails the construction of new mainline track siding; upgrades to the existing mainline track siding; installation of power crossovers and turnouts; extension of culverts; and the removal of existing turnouts. The project's Area of Potential Effects (APE) is delineated to encompass the maximum extent of ground disturbances as required by the project design.

The APE measures approximately 15.5 miles long and 100-250 feet wide, large enough to accommodate all construction activities for the project. The new track will be installed parallel to and within 15 feet of the existing BNSF main track. The APE is confined entirely within the existing BNSF right-of-way, lying within portions of Sections 19, 20, 25, 26, 27, 28, and 29, T7S R14E; Sections 27, 28, 29, 30, 34, and 35, T7S R15E; Sections 1, 2, 12, and 29, T8S R15E; and Sections 7, 17, 18, 20, and 21, T8S R16E, Mount Diablo Base Meridian (Fig. 1).

This study is performed in compliance with both CEQA and Section 106 of the National Historic Preservation Act. The purpose of the study is to provide Caltrans and other responsible agencies with the necessary information and analysis to determine whether the undertaking would have an effect on any "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Calif. PRC §21084.1, that may exist in or near the APE. In order to identify and evaluate such resources, CRM TECH conducted a historical/ archaeological resources records search, pursued historical background research, contacted Native American representatives, and carried out a systematic field survey.

The APE is situated in both urbanized and rural agricultural settings of southern Merced County. The natural environment of the APE has been altered in the past through grading and development of the railway's right-of-way with track, ballast, and service roads, since its construction in the 1890s. The APE is bounded by commercial and residential buildings, agricultural and undeveloped land, and by paved roads.

A total of three buildings are located in the APE, including a walnut processing shed, a workshop, and a small storage shed. The former Le Grand railway station, moved to its current location sometime after 1966, is located among this group of buildings and immediately adjacent to the APE.

As a result of the field survey, five historic-period resources including the BNSF railroad line, a group of buildings, and three locations of former railroad stations were recorded within and immediately adjacent to the APE (Figs. 2-6). The existing BNSF railroad line that runs through the APE, originally built in 1895-1897, was recorded and designated as Site 24-001881. The group of historic-period buildings, since designated as Site 24-001877, included the 1896 Le Grand depot and three ancillary buildings, and the three former station locations, designated as Sites 24-001878, 24-001879, and 24-001880, exhibited remnant features such as palm trees, concrete foundations, and station signs.

The results of the records search conducted by the Central California Information Center, California State University, Stanislaus, indicate that the BNSF railroad line within the APE has not been previously recorded or evaluated for significance. The Bradley Overhead (Bridge No. 39-44), located within the APE at Milepost 1053.9, was previously recorded and evaluated by Caltrans and slated for demolition in 2009 as part of a future grade-separation project. As such, the BNSF double-track project has no potential to effect the Bradley Overhead bridge. Two canals dating to the mid-20th century, known as the Fairfield and the Hartley/Doane, have been recorded along State Route 140 within close proximity of the APE. These two canals, however, are not present within the APE and will not be affected by the proposed undertaking. No other potential cultural resources were encountered during the field survey of the entire APE.

Within the jurisdiction of the City of Merced, the only historic resources found in the APE were four palm trees that appear to be remnants of a palm row that was once situated near the former location of the Merced depot (Fig. 3). The Merced depot has long since gone, and was replaced by the modern Amtrak station near 24th and M Streets. No archaeological materials were found in the vicinity of the palm row, but we recorded them as remnant features that appear to be more than 50 years old.

Within a one-mile radius of the APE, numerous historic-period buildings and structures have been previously recorded in the downtown portion of Merced, including properties identified as eligible for the National Register of Historic Places. Many of these buildings are located within the boundaries of designated Historic Districts. The types of buildings and built environments recorded within these districts are many, including cemeteries, commercial, educational, governmental, industrial, medical, residential, religious, and social. They generally span in age from the 1880s-1940s. However, none of these buildings or historic districts are located within close proximity of the APE, and thus they require no further consideration during this study. The presence of so many historic buildings and

districts in the Merced area, however, attests to the development and prosperity of the town since the late 19th century.

Our study is currently on-going, and we are conducting research to establish the historical significance of the five historic-period sites we recorded within and adjacent to the APE during the field survey.

We appreciate your input and taking the time to state any cultural resources concerns you may have regarding this project. I look forward to hearing from you soon.

Sincerely,

Josh Smallwood, M.A., Historical Archaeologist
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324
Phone: (909) 824-6400
E-mail: jsmallwood@crmtech.us

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

February 13, 2009

Oksana Newmen
Planner III
County of Merced
Planning and Community Development
2222 M Street
Merced, California 95340

RE: Cultural resources/historic preservation input pertaining to the BNSF Railway Company's Le Grand to Merced, CA Double Track Project

Dear Oksana:

CRM TECH has been hired to conduct the cultural resources study for the proposed project referenced above. One of our responsibilities in this capacity is to consult with the local government to determine if there are any cultural resources concerns at or near the location of the above referenced project (Fig. 1). This document is provided to assist you with any concerns you may have regarding this project and the possibility of impacts on cultural resources. Please contact me at your earliest availability to give your response.

As part of its program to improve rail transportation services, the State of California Department of Transportation, Division of Rails proposes a project to upgrade the capacity of the Burlington Northern Santa Fe (BNSF) Railway's main line, from Milepost (MP) 1039.9 to MP 1056.4, between Le Grand and Merced in Merced County (Fig. 1). The proposed project entails the construction of new mainline track siding; upgrades to the existing mainline track siding; installation of power crossovers and turnouts; extension of culverts; and the removal of existing turnouts. The project's Area of Potential Effects (APE) is delineated to encompass the maximum extent of ground disturbances as required by the project design.

The APE measures approximately 15.5 miles long and 100-250 feet wide, large enough to accommodate all construction activities for the project. The new track will be installed parallel to and within 15 feet of the existing BNSF main track. The APE is confined entirely within the existing BNSF right-of-way, lying within portions of Sections 19, 20, 25, 26, 27, 28, and 29, T7S R14E; Sections 27, 28, 29, 30, 34, and 35, T7S R15E; Sections 1, 2, 12, and 29, T8S R15E; and Sections 7, 17, 18, 20, and 21, T8S R16E, Mount Diablo Base Meridian (Fig. 1).

This study is performed in compliance with both CEQA and Section 106 of the National Historic Preservation Act. The purpose of the study is to provide Caltrans and other responsible agencies with the necessary information and analysis to determine whether the undertaking would have an effect on any "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Calif. PRC §21084.1, that may exist in or near the APE. In order to identify and evaluate such resources, CRM TECH conducted a

historical/ archaeological resources records search, pursued historical background research, contacted Native American representatives, and carried out a systematic field survey.

The APE is situated in both urbanized and rural agricultural settings of southern Merced County. The natural environment of the APE has been altered in the past through grading and development of the railway's right-of-way with track, ballast, and service roads, since its construction in the 1890s. The APE is bounded by commercial and residential buildings, agricultural and undeveloped land, and by paved roads.

A total of three buildings are located in the APE, including a walnut processing shed, a workshop, and a small storage shed. The former Le Grand railway station, moved to its current location sometime after 1966, is located among this group of buildings and immediately adjacent to the APE.

As a result of the field survey, five historic-period resources including the BNSF railroad line, a group of buildings, and three locations of former railroad stations were recorded within and immediately adjacent to the APE (Figs. 2-6). The existing BNSF railroad line that runs through the APE, originally built in 1895-1897, was recorded and designated as Site 24-001881. The group of historic-period buildings, since designated as Site 24-001877, included the 1896 Le Grand depot and three ancillary buildings, and the three former station locations, designated as Sites 24-001878, 24-001879, and 24-001880, exhibited remnant features such as palm trees, concrete foundations, and station signs.

The results of the records search conducted by the Central California Information Center (CCIC), California State University, Stanislaus, indicate that the BNSF railroad line within the APE has not been previously recorded or evaluated for significance. The Bradley Overhead (Bridge No. 39-44), located within the APE at Milepost 1053.9, was previously recorded and evaluated by Caltrans and slated for demolition in 2009 as part of a future grade-separation project. As such, the BNSF double-track project has no potential to effect the Bradley Overhead bridge. Two canals dating to the mid-20th century, known as the Fairfield and the Hartley/Doane, have been recorded along State Route 140 within close proximity of the APE. These two canals, however, are not present within the APE and will not be affected by the proposed undertaking. No other potential cultural resources were encountered during the field survey of the entire APE.

Within the jurisdiction of the City of Merced, the only historic resources found in the APE were four palm trees that appear to be remnants of a palm row that was once situated near the former location of the Merced depot (Fig. 3). The Merced depot has long since gone, and was replaced by the modern Amtrak station near 24th and M Streets. No archaeological materials were found in the vicinity of the palm row, but we recorded them as remnant features that appear to be more than 50 years old.

According to records on file at the CCIC, within a one-mile radius of the APE numerous historic-period buildings and structures have been previously recorded in the downtown portion of Merced, including properties identified as eligible for the National Register of Historic Places. Many of these buildings are located within the boundaries of designated Historic Districts. The types of buildings and built environments recorded within these districts are many, including cemeteries, commercial, educational, governmental,

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Our study is currently on-going, and we are conducting research to establish the historical significance of the five historic-period sites we recorded within and adjacent to the APE during the field survey.

We appreciate your input and taking the time to state any cultural resources concerns you may have regarding this project. I look forward to hearing from you soon.

Sincerely,

Josh Smallwood, M.A., Historical Archaeologist
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324
Phone: (909) 824-6400
E-mail: jsmallwood@crmtech.us

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

February 12, 2009

Ms. Sarah Lim
Museum Director
Merced County Historical Society/Merced County Courthouse Museum
21st and N Street
Merced, California 95340

RE: Cultural resources/historic preservation input pertaining to the BNSF Railway Company's Le Grand to Merced, CA Double Track Project

Dear Ms. Lim:

CRM TECH has been hired to conduct the cultural resources study for the proposed project referenced above. One of our responsibilities in this capacity is to consult with the local government to determine if there are any cultural resources concerns at or near the location of the above referenced project (Fig. 1). This document is provided to assist you with any concerns you may have regarding this project and the possibility of impacts on cultural resources. Please contact me at your earliest availability to give your response.

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1880s-1940s. However, none of these buildings or historic districts are located within close proximity of the APE, and thus they require no further consideration during this study. The presence of so many historic buildings and districts in the Merced area, however, attests to the development and prosperity of the town since the late 19th century.

Our study is currently on-going, and we are conducting research to establish the historical significance of the five historic-period sites we recorded within and adjacent to the APE during the field survey.

We appreciate your input and taking the time to state any cultural resources concerns you may have regarding this project. I look forward to hearing from you soon.

Sincerely,

Josh Smallwood, M.A., Historical Archaeologist
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324
Phone: (909) 824-6400
E-mail: jsmallwood@crmtech.us

Subject: Cultural resources and the BNSF Railway Double Track project
Date: Thursday, February 12, 2009 9:01 AM
From: Josh <jsmallwood@crmtech.us>
To: <kingb@cityofmerced.org>

Hi Bill,

Attached is some information on the project and a briefing of some of the data we have gathered so far. The study is on-going and I expect we will complete our part in about 2 weeks. We appreciate any input you may have regarding the project, even if there are no concerns.

Sincerely,

Josh Smallwood, M.A. Historic Preservation
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324
Phone (909) 824-6400
Fax (909) 824-6405

Date: Thursday, February 12, 2009 9:30 AM
From: King, Bill <KingB@cityofmerced.org>
To: Josh Smallwood <jsmallwood@crmtech.us>

received. it could be a week or more until we review and comment. what deadline do you have.

Date: Thursday, February 12, 2009 9:35 AM
From: Josh <jsmallwood@crmtech.us>
To: "King, Bill" <KingB@cityofmerced.org>

Bill,

It would be good to have your input included in our report when we submit it to Caltrans in 2 weeks, but if you cannot make that deadline then we can always submit your comments/concerns as a separate letter to them later. I have no clue what Caltrans' schedule is for the project, but it usually takes them a long time to review the CEQA/NEPA document.

-Josh

CORRESPONDENCE LOG

Agency	Contacts	Correspondence	Responses
County of Merced Planning and Community Development Department	Oksana Newmen, Planner	**Phone:** 10:00 am, February 12, 2009 **E-mail:** February 13, 2009	Ms. Newmen suggested that CRM TECH contact the Merced County Historical Society and the Central California Information Center at CSU Stanislaus about information on historical resources in the area. She stated no other concerns about the proposed undertaking.
City of Merced, Planning Division	Bill King, Planner	**Phone:** 9:00 am, February 12, 2009 **E-mail:** February 12, 2009; March 2, 2009	Mr. King received the e-mail and did not state any immediate concerns, but said that it could be a week or more before he could review and comment on the project. He was contacted through e-mail again on March 2, 2009; no response to date.
Merced County Historical Society/Merced County Courthouse Museum	Sarah Lim, Museum Director	**E-mail:** February 12, 2009; March 2, 2009 **Phone:** 11:00 am, February 13, 2009	Ms. Lim received the e-mail and said she would review the project before responding with comments. She was contacted through e-mail again on March 2, 2009, and has since responded with no concerns.

TELEPHONE LOG

Name	Tribe/Affiliation	Telephone Contacts	Comments
Edward Ketchum	Amah Mutsun Tribal Band	None	Two e-mails were received from Mr. Ketchum on February 25 and 27, 2009 (copy attached).
Katherine Erolinda Perez	North Valley Yokuts Tribe	1:30 pm, February 25, 2009	Ms. Perez had no concerns regarding the APE, but requested notification of any findings of Native American cultural significance.
Anthony Brochini, Chairperson	Southern Sierra Miwuk Nation	1:36 pm, February 25, 2009 11:49 am, February 26, 2009 11:02 pm, March 2, 2009	Left messages; no response to date.
Les James, Spiritual Leader	Southern Sierra Miwuk Nation	11:53 am, February 26, 2009 11:04 pm, March 2, 2009	Left messages; no response to date.
Jay Johnson, Spiritual Leader	Southern Sierra Miwuk Nation	11:51 am, February 26, 2009	Mr. James recommended that Anthony Brochini be contacted (see above).

From: Aerieways@aol.com [Aerieways@aol.com]
Sent: Wednesday, February 25, 2009 2:59 AM
To: Laura Shaker
Subject: Re: CRM TECH Project # 2312

I am a descendant of the people taken to San Juan Bautista, among those were both the Quithrathre and the Silelanme from the Merced area. I find no information in your report on the indigenous people of the Merced area. I believe a cultural study to reveal the original people is warranted.

Ed Ketchum

Subject: CRM TECH Project #2312--BNSF Railway double track
Date: Thursday, February 26, 2009 1:02 PM
From: Josh <jsmallwood@crmtech.us>
To: <Aerieways@aol.com>
Conversation: CRM TECH Project #2312--BNSF Railway double track

Dear Mr. Ketchum,

Laura Shaker forwarded your e-mail to me and asked if I could give you some more information on the project. I am conducting the research and writing the report.

I do want to clarify that the letter and e-mail Ms. Shaker sent you was not a cultural resources report, it was simply a description of the Area of Potential Effects and the cultural resources CRM TECH encountered during our field survey of the APE. The study is on-going and we have yet to complete our findings.

We will, of course, discuss the archaeology, prehistory, and ethnography of the region in our report, as well as the history of the area and the APE itself.

Our research identifies the APE as being within the traditional territory of the Northern Valley Yokuts group. This is a large, general group classification, I know, and there were undoubtedly smaller individual groups in the area such as those you speak of. If you have any information you would like to share about these groups and their occupation of the APE and vicinity, that would be greatly appreciated.

The APE itself is highly disturbed and was graded for the railway when it was first constructed in 1895-1897. We surveyed intensively in areas on/near embankments close to waterways believing these areas may have provided favorable environments for prehistoric habitation, but throughout the survey we did not find any prehistoric materials, such as artifacts, features, or soils.

Your comments on the project are welcome and will be included in our report.

Sincerely,

Josh Smallwood, M.A. Historic Preservation
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324
Phone (909) 824-6400
Fax (909) 824-6405

From: "Aerieways@aol.com" <Aerieways@aol.com>
Date: Fri, 27 Feb 2009 00:04:25 -0500
To: Josh Smallwood <jsmallwood@crmtech.us>
Conversation: CRM TECH Project #2312--BNSF Railway double track
Subject: Re: CRM TECH Project #2312--BNSF Railway double track

Dr. Randy Millikan would be most useful in your evaluation of ethnographic information.

For my immediately family, my grandmother's grandmother's grandmother, Sipuacsa, was taken from Quithrathre to Mision de San Juan Bautista when she was a child of 5 years of age in May of 1821. According to Ascencion Solorsano, the Quithrathre lived on Merced River below the foothills. Randy Millikan locates the Quithrathre south near present day Atwater. Sipuacsa's father, Jayacalu and mother, Lihuate were brought to San Juan Bautista nearly a year later in 1822. On the San Juan Bautista mission records Jayacalu is listed as Quithrathre while Lihuate is listed as Silelamne. Randy locates Silelamne south of the Quithrathre near present day Merced. I have cousins who are descendants of other Quithrathre as well.

Ed Ketchum
Amah Mutsun Tribal Band
Historian

ATTACHMENT F

NATIVE AMERICAN CORRESPONDENCE

CRM TECH

FAX COVER SHEET

1016 E. Cooley Drive
Suite B
Colton, CA 92324
909·824·6400·Tel
909·824·6405·Fax

To:
Native American
Heritage Commission

Fax:
(916) 657-5390

From:
Nina Gallardo

Date:
January 13, 2009

Number of pages (including this cover sheet):
2

HARDCOPY:

_____ will follow by mail

√ will not follow unless requested

RE: Sacred Land records search

This is to request a Sacred Lands records search

Name of project:
Le Grand to Planada, CA Double Track Project
CRM TECH #2312 (Le Grand Double Track)

Project size:
24 linear miles

Location:
In the Cities of Merced, Planada & Le Grand
Merced County

USGS 7.5' quad sheet data:
Merced, Calif.
T7S R14E, SBBM
Sections: 19, 20, 25-29;
T7S R15E, SBBM
Sections: 30;

Planada, Calif.
T7S R15E, SBBM
Sections: 27-30, 34-35,
T8S R15E, SBBM
Sections: 1-2, & 12;

Plainsburg, Calif.
T8S R16E, SBBM
Sections: 7, 17-18;

Le Grand, Calif.
T8S R16E, SBBM
Sections: 17, 20-21.

Please call if you need more information or have any questions. Results may be faxed to the number above. I appreciate your assistance in this matter.

Map included

From: Josh <jsmallwood@crmtech.us>
Date: Thu, 26 Feb 2009 13:02:14 -0800
To: <Aerieways@aol.com>
Conversation: CRM TECH Project #2312--BNSF Railway double track
Subject: CRM TECH Project #2312--BNSF Railway double track

Dear Mr. Ketchum,

Laura Shaker forwarded your e-mail to me and asked if I could give you some more information on the project. I am conducting the research and writing the report.

I do want to clarify that the letter and e-mail Ms. Shaker sent you was not a cultural resources report, it was simply a description of the Area of Potential Effects and the cultural resources CRM TECH encountered during our field survey of the APE. The study is on-going and we have yet to complete our findings.

We will, of course, discuss the archaeology, prehistory, and ethnography of the region in our report, as well as the history of the area and the APE itself.

Our research identifies the APE as being within the traditional territory of the Northern Valley Yokuts group. This is a large, general group classification, I know, and there were undoubtedly smaller individual groups in the area such as those you speak of. If you have any information you would like to share about these groups and their occupation of the APE and vicinity, that would be greatly appreciated.

The APE itself is highly disturbed and was graded for the railway when it was first constructed in 1895-1897. We surveyed intensively in areas on/near embankments close to waterways believing these areas may have provided favorable environments for prehistoric habitation, but throughout the survey we did not find any prehistoric materials, such as artifacts, features, or soils.

Your comments on the project are welcome and will be included in our report.

Sincerely,

Josh Smallwood, M.A. Historic Preservation
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324
Phone (909) 824-6400
Fax (909) 824-6405

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390

February 24, 2009

Nina Gallardo
CRM TECH
1016 E. Cooley Drive, Suite B
Colton, CA 92324

Sent by Fax: 909-824-6405
Number of Pages: 2

Re: Proposed Le Grand to Pianada, Double Track Project, CRM TECH #2312; Merced County.

Dear Ms. Gallardo:

A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4040.

Sincerely,

Katy Sanchez

Katy Sanchez
Program Analyst

Native American Contact
Merced County
February 23, 2009

Southern Sierra Miwuk Nation
Jay Johnson, Spiritual Leader
5235 Allred Road
Mariposa , CA 95338
209-966-6038

Miwok
Pauite
Northern Valley Yokut

Southern Sierra Miwuk Nation
Les James, Spiritual Leader
PO Box 1200
Mariposa , CA 95338
209-966-3690

Miwok
Pauite
Northern Valley Yokut

North Valley Yokuts Tribe
Katherine Erolinda Perez
PO Box 717
Linden , CA 95236
(209) 887-3415

Ohlone/Costanoan
Northern Valley Yokuts
Bay Miwok

Amah MutsunTribal Band
Edward Ketchum
35867 Yosemite Ave
Davis , CA 95616
aerieways@aol.com

Ohlone/Costanoan
Northern Valley Yokuts

Southern Sierra Miwuk Nation
Anthony Brochini, Chairperson
P.O. Box 1200
Mariposa , CA 95338
tony_brochini@nps.gov
209-379-1120
209-628-0085 cell

Miwok
Pauite
Northern Valley Yokut

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Le Grand to Planada,DoubleTrack Project, CRM TECH #2312; Merced County.

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

February 24, 2009

Anthony Brochini, Chairperson
Southern Sierra Miwuk Nation
P. O. Box 1200
Mariposa, CA 95338

RE: Le Grand to Planada, CA Double Track Project (15.5 linear miles)
In the Cities of Merced, Planada & Le Grand, Merced County
CRM TECH Contract #2312

Dear Mr. Brochini:

As part of a cultural resources study for the project referenced above, I am writing to request your input on potential Native American cultural resources in or near the project area. Please respond at your earliest convenience if you have any specific knowledge of sacred/religious sites or other sites of Native American traditional cultural value within or near the Area of Potential Effect (APE). This study is performed in compliance with both CEQA and Section 106 of the National Historic Preservation Act. The purpose of the study is to provide Caltrans and other responsible agencies with the necessary information and analysis to determine whether the undertaking would have an effect on any "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Calif. PRC §21084.1, that may exist in or near the APE.

As part of its program to improve rail transportation services, the State of California Department of Transportation, Division of Rails proposes a project to upgrade the capacity of the Burlington Northern Santa Fe (BNSF) Railway's main line, from Milepost (MP) 1039.9 to MP 1056.4, between Le Grand and Merced in Merced County (Fig. 1). The proposed project entails the construction of new mainline track segments; installation of power crossovers and turnouts; extension of culverts; and the removal of existing turnouts. The project's Area of Potential Effects (APE) is delineated to encompass the maximum extent of ground disturbances as required by the project design.

The APE measures approximately 15.5 miles long and 100-250 feet wide, large enough to accommodate all construction activities for the project. The new track will be installed parallel to and within 15 feet of the existing BNSF main track. The APE is confined entirely within the existing BNSF right-of-way, lying within portions of Sections 19, 20, 25, 26, 27, 28, and 29, T7S R14E; Sections 27, 28, 29, 30, 34, and 35, T7S R15E; Sections 1, 2, 12, and 29, T8S R15E; and Sections 7, 17, 18, 20, and 21, T8S R16E, Mount Diablo Base Meridian (Fig. 1).

The APE is situated in both urbanized and rural agricultural settings of southern Merced County. The natural environment of the APE has been altered in the past

through grading and development of the railway's right-of-way with track, ballast, and service roads, since its construction in the 1890s. The APE is bounded by commercial and residential buildings, agricultural and undeveloped land, and by paved roads.

The results of the records search conducted by the Central California Information Center, California State University, Stanislaus, indicate that the BNSF railroad line within the APE has not been previously recorded or evaluated for significance. The Bradley Overhead (Bridge No. 39-44), located within the APE at Milepost 1053.9, was previously recorded and evaluated by Caltrans and slated for demolition in 2009 as part of a future grade-separation project. As such, the BNSF double-track project has no potential to effect the Bradley Overhead Bridge. Two canals dating to the mid-20th century, known as the Fairfield and the Hartley/Doane, have been recorded along State Route 140 within close proximity of the APE. These two canals, however, are not present within the APE and will not be affected by the proposed undertaking. No other potential cultural resources were encountered during the field survey of the entire APE. No prehistoric Native American cultural resources were recorded within the one-mile scope of the records search.

As a result of the field survey, five historic-period resources including the BNSF railroad line, a group of buildings, and three locations of former railroad stations were recorded within and immediately adjacent to the APE (Figs. 2-6). The existing BNSF railroad line that runs through the APE, originally built in 1895-1897, was recorded and designated as Site 24-001881. The group of historic-period buildings, since designated as Site 24-001877, included the 1896 Le Grand depot and three ancillary buildings, and the three former station locations, designated as Sites 24-001878, 24-001879, and 24-001880, exhibited remnant features such as palm trees, concrete foundations, and station signs. Of these, the only historic resources found in the APE were four palm trees that appear to be remnants of a palm row, that appearing to be more than 50 years old. The palm row is situated near the former location of the Merced depot (Fig. 3). No archaeological materials were found in the vicinity of the palm row.

Any information, concerns or recommendations regarding cultural resources in the vicinity of the APE may be forwarded to CRM TECH by telephone, e-mail, facsimile or standard mail. Thank you for the time and effort in addressing this important matter.

Respectfully,

Laura Hensley Shaker
CRM TECH

Encl.: APE map

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

February 24, 2009

Edward Ketchum
Amah Mutsum Tribal Band
35867 Yosemite Ave
Davis, CA 95616

RE: Le Grand to Planada, CA Double Track Project (15.5 linear miles)
In the Cities of Merced, Planada & Le Grand, Merced County
CRM TECH Contract #2312

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The APE measures approximately 15.5 miles long and 100-250 feet wide, large enough to accommodate all construction activities for the project. The new track will be installed parallel to and within 15 feet of the existing BNSF main track. The APE is confined entirely within the existing BNSF right-of-way, lying within portions of Sections 19, 20, 25, 26, 27, 28, and 29, T7S R14E; Sections 27, 28, 29, 30, 34, and 35, T7S R15E; Sections 1, 2, 12, and 29, T8S R15E; and Sections 7, 17, 18, 20, and 21, T8S R16E, Mount Diablo Base Meridian (Fig. 1).

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Respectfully,

Laura Hensley Shaker
CRM TECH

Encl.: APE map

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

February 24, 2009

Jay Johnson, Spiritual Leader
Southern Sierra Miwuk Nation
5235 Alfred Road
Mariposa, CA 95338

RE: Le Grand to Planada, CA Double Track Project (15.5 linear miles)
In the Cities of Merced, Planada & Le Grand, Merced County
CRM TECH Contract #2312

Dear Mr. Johnson:

As part of a cultural resources study for the project referenced above, I am writing to request your input on potential Native American cultural resources in or near the project area. Please respond at your earliest convenience if you have any specific knowledge of sacred/religious sites or other sites of Native American traditional cultural value within or near the Area of Potential Effect (APE). This study is performed in compliance with both CEQA and Section 106 of the National Historic Preservation Act. The purpose of the study is to provide Caltrans and other responsible agencies with the necessary information and analysis to determine whether the undertaking would have an effect on any "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Calif. PRC §21084.1, that may exist in or near the APE.

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Respectfully,

Laura Hensley Shaker
CRM TECH

Encl.: APE map

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

February 24, 2009

Katherine Perez
Northern Valley Yokuts Tribe
PO Box 717
Linden, CA 92536

RE: Le Grand to Planada, CA Double Track Project (15.5 linear miles)
In the Cities of Merced, Planada & Le Grand, Merced County
CRM TECH Contract #2312

Dear Ms. Perez :

As part of a cultural resources study for the project referenced above, I am writing to request your input on potential Native American cultural resources in or near the project area. Please respond at your earliest convenience if you have any specific knowledge of sacred/religious sites or other sites of Native American traditional cultural value within or near the Area of Potential Effect (APE). This study is performed in compliance with both CEQA and Section 106 of the National Historic Preservation Act. The purpose of the study is to provide Caltrans and other responsible agencies with the necessary information and analysis to determine whether the undertaking would have an effect on any "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Calif. PRC §21084.1, that may exist in or near the APE.

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Respectfully,

Laura Hensley Shaker
CRM TECH

Encl.: APE map

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

February 24, 2009

Les James, Spiritual Leader
Southern Sierra Miwuk Nation
P. O. Box 1200
Mariposa, CA 95338

RE: Le Grand to Planada, CA Double Track Project (15.5 linear miles)
In the Cities of Merced, Planada & Le Grand, Merced County
CRM TECH Contract #2312

Dear Mr. James:

As part of a cultural resources study for the project referenced above, I am writing to request your input on potential Native American cultural resources in or near the project area. Please respond at your earliest convenience if you have any specific knowledge of sacred/religious sites or other sites of Native American traditional cultural value within or near the Area of Potential Effect (APE). This study is performed in compliance with both CEQA and Section 106 of the National Historic Preservation Act. The purpose of the study is to provide Caltrans and other responsible agencies with the necessary information and analysis to determine whether the undertaking would have an effect on any "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Calif. PRC §21084.1, that may exist in or near the APE.

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Respectfully,

Laura Hensley Shaker
CRM TECH

Encl.: APE map

TELEPHONE LOG

Name	Tribe/Affiliation	Telephone Contacts	Comments
Edward Ketchum	Amah Mutsun Tribal Band	None	Two e-mails were received from Mr. Ketchum on February 25 and 27, 2009 (copy attached).
Katherine Erolinda Perez	North Valley Yokuts Tribe	1:30 pm, February 25, 2009	Ms. Perez had no concerns regarding the APE, but requested notification of any findings of Native American cultural significance.
Anthony Brochini, Chairperson	Southern Sierra Miwuk Nation	1:36 pm, February 25, 2009 11:49 am, February 26, 2009 11:02 pm, March 2, 2009	Left messages; no response to date.
Les James, Spiritual Leader	Southern Sierra Miwuk Nation	11:53 am, February 26, 2009 11:04 pm, March 2, 2009	Left messages; no response to date.
Jay Johnson, Spiritual Leader	Southern Sierra Miwuk Nation	11:51 am, February 26, 2009	Mr. James recommended that Anthony Brochini be contacted (see above).