GENERAL BIOLOGICAL ASSESSMENT

FOR THE

SAN JACINTO MASTER DRAINAGE PLAN

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1.0 INTRODUCTION

This letter report provides the results of general biological surveys and habitat assessments, and limited focused surveys conducted by Glenn Lukos Associates, Inc. (GLA) for portions of the San Jacinto Valley Master Drainage Plan, hereinafter referred to as the MDP. This report is limited in its scope for the following reasons: 1) GLA was not provided with all of the MDP alignments at the time of field assessments, since many of the alignments occur in developed areas and most of those were assumed not to have any biological/regulatory constraints; 2) Of the alignments provided to GLA, permission to access was granted for only a subset of those alignments; and 3) GLA was granted access later in the 2008 season, which did not adequately allow for habitat assessments/focused surveys for certain resources, including fairy shrimp, vernal pools, and special-status plants.

This report does not address all of the MDP alignments, as many of the alignments occur within existing developed areas (including paved roadways), and GLA was not provided with these alignments at the time that field assessments were conducted. Please refer to Appendix A (Proposed Project) to compare the entire MDP project area with the exhibits provided in this report. The alignments evaluated by this report largely represent the alignments occurring within undeveloped areas, including potentially sensitive areas. The majority of alignments that are not addressed in this report are not expected to require focused biological surveys. However, portions of these alignments may still require further project-specific assessments, including a delineation of jurisdictional waters. In the case of existing roadways, roadside ditches adjacent to roadways may be considered to be jurisdictional waters, which if impacted during construction may require regulatory permits.

This report discusses the MDP in the context of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), including an outline of the overall process and future biological studies that would be required in order to achieve compliance with the biological requirements of the MSHCP. General biological surveys and habitat assessments for special-status plants and wildlife were conducted for those properties where access was granted. For areas with restricted access, assessments were limited to roadside surveys, which the limited the detail of those assessments. In addition, because of the time of year that the field studies were conducted, the scope of focused species surveys was limited due to seasonal constraints. In order to supplement the field review, GLA obtained background information from public sources such as the MSHCP supporting documents and the California Natural Diversity Database (CNDDB).

1.1 Project Location

The MDP is located in the Cities of San Jacinto and Hemet in Western Riverside County [Exhibit 1 – Regional Map]. The MDP area is bordered generally by the San Jacinto River to the north and east, Warren Road to the west, and the City of Hemet to the south. The MDP area is depicted at Township 4S and Range 1W on the U.S. Geological Survey 7.5' topographic maps Lakeview and San Jacinto, California [Exhibit 2 – Vicinity Map].

1.2 Project Description

The City of San Jacinto proposes to revise and consolidate two existing and previously adopted Master Drainage Plans (MDP) located in portions of the Cities of San Jacinto and Hemet and unincorporated Riverside County, California. The San Jacinto Valley MDP will also include proposed drainage facilities from areas located just outside of the San Jacinto and Northwest Hemet MDPs. The consolidated plan will be called the San Jacinto Valley MDP. After adoption, the newly created San Jacinto Valley MDP will supersede the San Jacinto MDP and Northwest Hemet MDP.

Master Drainage Plans are conceptual planning documents that address the current and future drainage needs of a given community. The boundary of the plan usually follows regional watershed limits. The proposed drainage facilities may include channels, storm drains, levees, basins, dams, or any other conveyance capable of feasibly relieving flooding problems within the plan area. The plan includes an estimate of facility capacity, sizes and costs.

Master Drainage Plans are prepared for a variety of purposes. First, to identify solutions to existing flood hazards, second, to provide a guide for the orderly development of the community and third, to provide an estimate of costs to resolve flooding issues within a community. Finally, the plans can be used to establish Area Drainage Plan (ADP) fees, a financing mechanism used to offset taxpayer costs for proposed drainage facilities. The fees are imposed on new development within the plan area. The proposed project also consists of amending the existing San Jacinto and Northwest Hemet Area ADPs.

The San Jacinto MDP dated January 1982 (Revised July 1990) and the Northwest Hemet MDP dated January 1985 require revisions to meet the needs of the City of San Jacinto. In addition, there are some areas just south of the San Jacinto River that were not included in either of the earlier MDPs. Some of that area is within the existing San Jacinto River floodplain and had been anticipated to remain agricultural lands. However, the construction of the San Jacinto River Stage 4 Levee would remove a large area from the floodplain and allow development in this area. This proposed project will provide a drainage plan for that area.

The proposed San Jacinto Valley MDP is a planning document prepared by the City of San Jacinto (City) in coordination with the Riverside County Flood Control and Water Conservation District (District) that describes the type, size, and alignment of the major existing and proposed flood control facilities located within the plan boundaries. The MDP depicts a preliminary storm water drainage system that, when constructed in conjunction with ultimate street improvements, will contain the 100-year flood discharge and alleviate the primary sources of flooding within the MDP area. The proposed San Jacinto Valley MDP will serve as a guide to the long term planning for the future construction and maintenance of the proposed drainage facilities. It will also act as a guide for the location and size of drainage facilities that need to be constructed by the City of San Jacinto and/or others as the area develops, or facilities that need to be constructed to resolve existing flooding problems within developed areas. It is expected that many of the drainage facilities will be constructed in conjunction with other local development projects. Following adoption of the proposed San Jacinto Valley MDP, it is expected that proposed facility alignments will be reserved for the future construction of the facilities. The City of San Jacinto

will approve the MDP as one step toward establishing a financing mechanism to provide funding for the proposed drainage facilities as the area develops.

1.3 Relationship of the MDP to the MSHCP

1.3.1 MSHCP Background

The MSHCP is a comprehensive habitat conservation-planning program for Western Riverside County. The intent of the MSHCP is to preserve native vegetation and meet the habitat needs of multiple species, rather than focusing preservation efforts on one species at a time. The MSHCP provides coverage (including take authorization for listed species) for special-status plant and animal species, as well as mitigation for impacts to special-status species and associated native habitats through its region-wide conservation.

Through agreements with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG), the MSHCP designates approximately 146 special-status animal and plant species that receive some level of coverage under the plan. Of the covered species designated under the MSHCP, the majority of these species have no additional survey/conservation requirements. In addition, the MSHCP provides mitigation for project-specific impacts (including direct and indirect impacts) to these species so that the impacts would be reduced to below a level of significance pursuant to the California Environmental Quality Act (CEQA).

Of the species designated as covered by the MSHCP, some of these species have additional survey requirements based on a project's occurrence within a designated MSHCP survey area and/or based on the presence of suitable habitat. These include Narrow Endemic Plant Species, as identified by the Narrow Endemic Plant Species Survey Areas (NEPSSA); Criteria Area Plant Species identified by the Criteria Area Plant Species Survey Areas (CAPSSA); animals species identified by Survey Areas (burrowing owl, mammals, amphibians); species associated with riparian/riverine areas and vernal pool habitats, including the least Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo, and listed fairy shrimp; and an additional 28 species (*Table 9.3 of the MSHCP document*) not yet adequately conserved.

1.3.2 Relationship of the MDP to the MSHCP

The MDP occurs within the San Jacinto Valley Area Plan of the overall MSHCP planning area. Portions of the project occur within Subunit 1 (Gilman Springs/Southern Badlands), Subunit 2 (Lakeview Mountains East), and Subunit 4 (Hemet Vernal Pool Areas – East), though the majority of the project alignments do not occur within a conservation subunit [Exhibit 3 – MSHCP Overlay Map]. The portion of the MDP within Subunit 1 coincides with the extreme southern end of Cell Groups L and M, as well as portions of Cells 2461, 2462, 2568, 2569, and 2674. The portion of the MDP within Subunit 2 coincides with the extreme eastern portion of Cell Group A'. The portion of the MDP within Subunit 4 coincides with Cell Group V and portions of Cells 2775, 2878, and 3291.

Core and Linkages

The MSHCP Conservation Area is comprised of a variety of existing and proposed Cores, Extensions of Existing Cores, Linkages, Constrained Linkages and Non-contiguous Habitat Blocks. Portions of the MDP coincide with or occur in proximity to Proposed Noncontiguous Habitat Block 6, Existing Constrained Linkage C, and Proposed Core 5. The following are MSHCP discussions of the cores and linkages taken from *Volume I, Section 3.2* of the MSHCP document:

- Proposed Noncontiguous Habitat Block 6 is comprised of Cell Group V, and independent Cells 2775 and 2878. The Habitat Block identifies vernal pool/playa areas located west of San Jacinto and east of the Lakeview Mountains. According to the MSHCP, these parcels preserve, or have potential conservation value for populations of Narrow Endemic Plant Species, including Davidson's saltscale, thread-leaved brodiaea, little mousetail, California Orcutt grass and spreading navarretia, as well as the vernal pool fairy shrimp. Maintenance of vernal pool hydrology, water quality and Traver-Willow- Domino soil series is important for these species. Proposed Noncontiguous Habitat Block 6 is constrained by existing urban development and agricultural use. Adjacent urban Development in the City of San Jacinto, and realignment of the SR-79 North Corridor may affect resources within this habitat block. Treatment and management of edge conditions will be necessary to ensure that habitat quality and vernal pool hydrology are maintained as planned land uses are developed and major Covered Activities are implemented along the edge of this habitat block.

- Existing Constrained Linkage C consists of the middle segment of the San Jacinto River. This Public/Quasi-Public (PQP) Linkage connects Proposed Core 5 in the east (upper San Jacinto River area) with Proposed Constrained Linkage 20 to the west. It is also connects to Proposed Core 3 (Badlands/Potrero area) via Proposed Constrained Linkage 21. Existing Constrained Linkage C is constrained on all sides by existing development, has large amounts of area potentially subject edge effects (approximately 240 acres of the total 245 acres), and possesses a high perimeter to area (P/A) ratio (230 feet per acre). However, this Constrained Linkage is largely surrounded by an open space/ conservation planned land use. Thus edge effects may not affect the Linkage to such a strong degree. In areas of the Linkage bordering a planned land use designated city, however, treatment and management of edge conditions along the Linkage will still be necessary to ensure that it provides habitat and movement functions for species using the Linkage.

- Proposed Core 5 is comprised of the portion of the upper San Jacinto River extending from the San Jacinto Mountains to just west of State Street. It is contiguous with Core Areas in the San Jacinto Mountains and areas downstream along the San Jacinto River. Planning Species for which habitat is provided within this Core include mountain yellow-legged frog, arroyo toad, least Bell's vireo, southwestern willow flycatcher, San Bernardino kangaroo rat, and Los Angeles pocket mouse. Maintenance of floodplain processes and water quality of the San Jacinto River is important for these species, as well as maintenance of habitat quality. This Core likely provides for movement of mammals such as mountain lion and bobcat, connecting to Core Areas in the San Jacinto

Mountains, Lake Perris and San Jacinto Wildlife Refuge. In addition to indirect effects associated with adjacent planned land uses, flood control activities resulting from adjacent planned land uses may also adversely affect species such as arroyo toad, San Bernardino kangaroo rat, least Bell's vireo, southwestern willow flycatcher and Los Angeles pocket mouse.

Species Survey Areas

Portions of the MDP occur within MSHCP surveys areas for Narrow Endemic Plants, Criteria Area Plants, the western burrowing owl (*Athene cunicularia hypugaea*), and the Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) and San Bernardino kangaroo rat (*Dipodomys merriami parvus*). Within designated Survey Areas, the MSHCP requires habitat assessments, and focused surveys within areas of suitable habitat. For locations with positive survey results, the MSHCP requires that 90 percent of those portions of the property that provide for long-term conservation value for the identified species shall be avoided until it is demonstrated that conservation goals for the particular species are met. Findings of equivalency shall be made demonstrating that the 90-percent standard has been met.

Regarding special-status plants, portions of the MDP occur within NEPSSA and CAPSSA Survey Area Number 3, which include the following target species:

Narrow Endemic Plants

- Munz's onion (*Allium munzii*)
- San Diego ambrosia (*Ambrosia pumila*)
- Many-stemmed dudleya (*Dudleya multicaulis*)
- Spreading navarretia (*Navarretia fossalis*)
- California Orcutt's grass (*Orcuttia californica*)
- Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*)

Criteria Area Plants

- San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*)
- Davidson's saltbush (*Atriplex serenana* var. *davidsonii*)
- Parish's brittlescale (*Atriplex parishii*)
- Thread-leaved brodiaea (*Brodiaea filifolia*)
- Smooth tarplant (*Centromadia pungens* ssp. *laevis*)
- Round-leaved filaree (*Erodium macrophyllum*)
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)
- Little mousetail (*Myosurus minimus*)
- Mud nama (*Nama stenocarpum*)

The NEPSSA coincides with the western and central portions of the MDP, while the CAPSSA coincides with just the western portion (within Cell Group V, and Cells 2775 and 2878 of Subunit 4). The burrowing owl survey area occurs throughout the MDP area, with the exception of existing developed areas. The Los Angeles pocket mouse and San Bernardino kangaroo rat

survey area is associated with the San Jacinto River along the northeast edge of the MDP area. The MDP would have very minimal to no impact within the Mammal Survey Area.

2.0 METHODOLOGY

GLA biologists conducted general biological surveys and habitat assessments, and limited focused surveys for portions of the MDP. General biological surveys and habitat assessments for special-status plants and wildlife were conducted for those properties where access was granted. For areas with restricted access, assessments were limited to roadside surveys. In addition, due to the time of year that the field studies were conducted, the scope of focused species surveys was limited due to seasonal constraints. Focused surveys were conducted for the western burrowing owl (*Athene cunicularia*) within accessible areas. Although complete focused plant surveys could not be conducted due to the timing of surveys, special-status plants were mapped as they were detected during site assessments.

Prior to conducting the assessments, a list of target species and habitats was determined through initial site reconnaissance, and a review of existing literature and other resources; including the California Natural Diversity Database (CNDDB) [CDFG 2009], the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2009), MSHCP species and habitat maps, MSHCP sensitive soil maps and the Natural Resource Conservation Service's (NRCS) soil data, and other pertinent literature.

2.1 Summary of Surveys

Site-specific surveys were conducted for portions of the MDP alignments where access was granted, with the remaining areas limited to general habitat assessments conducted from roadways. The primary goal of the field studies was to identify areas with the greatest sensitivity and that would require additional studies in order to satisfy the biological requirements of the MSHCP; and also requirements of the California Environmental Quality Act (CEQA).

As feasible based on access and timing, the following assessments were conducted: (1) general reconnaissance surveys and vegetation mapping; (2) habitat assessments and incidental mapping for special-status plants, including Narrow Endemic Plants and Criteria Area Plants as designated by the corresponding MSHCP survey area; (3) habitat assessments and focused surveys for special-status animals (including species designated by *Sections 6.1.2 and 6.3.2* of the MSHCP document), specifically focusing on western burrowing owl; (4) a preliminary assessment of MSCHP riparian/riverine areas and vernal pool habitats; and (5) a preliminary jurisdictional assessment for areas subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps), the California Department of Fish and Game (CDFG), and the Regional Water Quality Control Board (RWQCB). Table 2-1 provides a summary list of survey dates, survey types and personnel.

Table 2-1. Summary of surveys for the MDP.

Survey Date	Survey Type	Surveying Biologist
7/21/08	Habitat Assessment General Biological Surveys	TK/KL
7/30/08	Focused Burrow/Burrowing Owl Survey	KL/IC
7/31/08	Focused Burrow/Burrowing Owl Survey	TK/KL
8/7/08	Focused Burrow/Burrowing Owl Survey	TK/KL
8/8/08	Focused Burrow/Burrowing Owl Survey	TK/KL
8/11/08	Focused Burrowing Owl Survey	TK/KL
8/12/08	Focused Burrowing Owl Survey Jurisdictional Assessment	TK/KL
8/20/08	Focused Burrowing Owl Survey Jurisdictional Assessment	TK/KL/DM/IC
8/22/08	Focused Burrow/Burrowing Owl Survey Jurisdictional Assessment	TK/KL
8/26/08	Focused Burrowing Owl Survey	TK
8/31/08	Smooth Tarplant Mapping	TK/KL

Surveying Biologists: TK = Travis Kegel; KL = Kevin Livergood; IC = Ingrid Chlup
DM = David Moskovitz

2.2 General Reconnaissance Surveys and Vegetation Mapping

As a broader component to the biological studies for the MDP alignments, GLA conducted general reconnaissance surveys to evaluate existing conditions, identify target sensitive areas, and provide general vegetation mapping of the study alignments. Since the vegetation mapping was often conducted at a more general level, specific smaller inclusions were not provided (e.g., disturbed alkali playa patches within broader areas of ruderal vegetation or non-native grassland). Vegetation assessments focused on identifying riparian areas within the MDP study area, since these habitats would have specific MSHCP requirements (see discussion below).

2.3 Special-Status Plants

As noted above, portions of the MDP alignments occur within the NEPSSA and CAPPSA. GLA conducted habitat assessments for the target Narrow Endemic Plants and Criteria Area Plants primarily for the purpose of providing recommendations for future project-specific surveys. Other special-status plants were evaluated for broader purposes of satisfying CEQA

requirements. In addition, special-status plants detected on site were mapped, however the study did not consist of a comprehensive focused survey for special-status plants due to the constraints of timing and restricted access to some properties.

Prior to conducting fieldwork, pertinent literature on the flora of the region was examined. The CNDDB and MSHCP were initially consulted to determine known occurrences of special-status plants in the region. Other sources used to develop a list of target species for the survey program included the CNPS Inventory (CNPS 2009). Based on this information, a list of sensitive plant species and habitats that could occur within the MDP area were developed.

Table 2-2 provides a list of special-status plants evaluated for the MDP through habitat assessments, including MSHCP target species. Plant species were evaluated based on a number of factors, including: 1) species identified by the CNDDB as occurring (either currently or historically) on or in the vicinity of the property, 2) MSHCP species survey areas for which the property occurs within, 3) planning species identified by the San Jacinto Valley Area Plan, and 4) any other special-status plants that are known to occur within the vicinity of the property, or for which potentially suitable habitat occurs on site.

Table 2-2. Special-status plants evaluated for the MDP.

Federal
FE - Federally Endangered
FT - Federally Threatened

State
SE - State Endangered
ST – State Threatened

CNPS List
List 1B - Plants rare, threatened, or endangered in California and elsewhere.
List 2 - Plants rare, threatened, or endangered in California, but more common elsewhere.
List 3 – Plants about which more information is needed.
List 4 – Plants of limited distribution.

CNPS Threat Code Extensions
0.1 – Seriously endangered in California.
0.2 – Fairly endangered in California.
0.3 – Not very endangered in California.

Species Name	Status	Habitat Requirements	Potential for Occurrence on site
California Orcutt grass *Orcuttia californica*	Federal: FE State: SE CNPS: List 1B.1	Vernal pools.	Low potential to occur on site.
Chaparral sand-verbena *Abronia villosa* var. *aurita*	Federal: None State: None CNPS: 1B.1	Sandy soils in sage-scrub, chaparral.	Observed on site.
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	Federal: None State: None CNPS: List 1B.1	Playas, vernal pools, marshes and swamps (coastal salt).	High potential to occur on site.

Species Name	Status	Habitat Requirements	Potential for Occurrence on site
Davidson's saltscale *Atriplex serenana* var. *davidsonii*	Federal: None State: None CNPS: List 1B.3	Alkaline soils in coastal sage scrub, coastal bluff scrub.	Low potential to occur on site.
Intermediate mariposa lily *Calochortus weedii* var. *intermedia*	Federal: None State: None CNPS: List 1B.3	Rocky/calcareous soils in chaparral, coastal scrub, and valley and foothill grassland.	Not expected to occur on site due to a lack of suitable habitat.
Little mousetail *Myosurus minimus* ssp. *apus*	Federal: None State: None CNPS: List 1B.3	Valley and foothill grassland, vernal pools (alkaline soils).	Low potential to occur on site.
Mud nama *Nama stenocarpum*	Federal: None State: None CNPS: List 1B.3	Marshes and swamps.	Low potential to occur on site.
Munz's onion *Allium munzii*	Federal: FE State: SE CNPS: List 1B.1	Mesic/clay soils in chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland.	Not expected to occur on site due to a lack of suitable habitat.
Parish's brittlescale *Atriplex parishii*	Federal: None State: None CNPS: List 1B.3	Chenopod scrub, playas, vernal pools.	Low potential to occur on site.
Parry's spineflower *Chorizanthe parryi* var. *parryi*	Federal: None State: None CNPS: List 3.2	Sandy or rocky soils in open habitats of chaparral and coastal sage scrub.	Not expected to occur on site due to a lack of suitable habitat.
Payson's jewel-flower *Caulanthus simulans*	Federal: None State: None CNPS: List 1B.3	Chaparral. And coastal sage scrub (sandy or granitic)	Not expected to occur on site due to a lack of suitable habitat.
Salt spring checkerbloom *Sidalcea neomexicana*	Federal: None State: None CNPS: List 2.2	Found in alkali springs and marshes within creosote bush scrub, chaparral, yellow pine forest, coastal sage scrub and alkali sink.	Not expected to occur on site due to a lack of suitable habitat.
San Diego ambrosia *Ambrosia pumila*	Federal: FE State: None CNPS: 1B.1	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools. Often in disturbed habitats.	Low potential to occur on site.
San Jacinto Valley crownscale *Atriplex coronata* var. *notatior*	Federal: None State: None CNPS: List 1B.3	Alkaline soils in chenopod scrub, valley and foothill grassland, vernal pools.	Low potential to occur on site.
Slender-horned spineflower *Dodecahema leptoceras*	Federal: FE State: SE CNPS: List 1B.1	Sandy soils in alluvial scrub, chaparral, cismontane woodland.	Not expected to occur on site due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence on site
Smooth tarplant *Centromadia pungens* ssp. *laevis*	Federal: None State: None CNPS: List 1B.1	Alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grasslands, disturbed habitats.	Observed on site.
South coast saltscale *Atriplex pacifica*	Federal: None State: None CNPS: List 1B.3	Coastal bluff scrub, coastal dunes, coastal sage scrub, playas.	Low potential to occur on site.
Spreading navarretia *Navarretia fossalis*	Federal: FT State: None CNPS: List 1B.1	Vernal pools, playas, chenopod scrub, marshes and swamps (assorted shallow freshwater).	Low potential to occur on site.
Thread-leaved brodiaea *Brodiaea filifolia*	Federal: None State: None CNPS: List 1B.3	Clay soils in chaparral (openings), cismontane woodland, coastal sage scrub, playas, valley and foothill grassland, vernal pools.	Low potential to occur on site.
Wright's trichocoronis *Trichocoronis wrightii* var. *wrightii*	Federal: None State: None CNPS: List 2.1	Alkaline soils in meadows and seeps, marshes and swamps, riparian scrub, vernal pools.	Low potential to occur on site.

2.4 Special-Status Animals

The MDP has the potential to support a number of special-status animals, though based on MSHCP requirements, only a few would be applicable to the project area (or potentially applicable). In terms of MSHCP survey areas as addressed in *Section 6.3.2* of the MSHCP, the applicable species are the western burrowing owl, Los Angeles pocket mouse (LAPM), and the San Bernardino kangaroo rat (SBKR). The most relevant species throughout the MDP area is the western burrowing owl. As noted above, nearly all of the MDP alignments occur within the burrowing owl survey area. A very small portion of the terminus of at least one alignment within the northeastern portion of the MDP coincides with the LAPM and SBKR mammal survey area. Besides the specified survey areas, potentially applicable species include riparian birds and fairy shrimp pursuant to requirements of *Section 6.1.2* of the MSHCP. These include the least Bell's vireo, southwestern willow flycatcher, the vernal pool fairy shrimp, and the Riverside fairy shrimp.

Table 2-3 provides a list of all special-status animals evaluated for the MDP through habitat assessments and focused surveys (i.e., burrowing owl), including MSHCP target species. Animal species were evaluated based on a number of factors, including: 1) species identified by the CNDDB as occurring (either currently or historically) on or in the vicinity of the property, 2) MSHCP species survey areas for which the property occurs within, 3) planning species identified by the San Jacinto Valley Area Plan, and 4) any other special-status animals that are known to occur within the vicinity of the property, or for which potentially suitable habitat occurs on site.

Table 2-3. Special-status animals evaluated for the MDP.

Federal
FE – Federally Endangered
FT – Federally Threatened
FPT – Federally Proposed Threatened
FSC – Federal Species of Concern

State
SE – State Endangered
ST – State Threatened
CSC – California Species of Concern
CFP – California Fully-Protected Species

Species Name	Status	Habitat Requirements	Potential for occurrence
Bell's sage sparrow *Amphispiza belli belli*	Federal: FSC State: None CDFG: CSC	Chaparral and coastal sage scrub along the coastal lowlands, inland valleys, and in the lower foothills of local mountains.	Not expected to occur on site due to lack of suitable habitat.
Burrowing owl *Athene cunicularia*	Federal: FSC State: None CDFG: CSC	Shortgrass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), coastal dunes, desert floors, and some artificial, open areas as a year-long resident. Occupies abandoned ground squirrel burrows as well as artificial structures such as culverts and underpasses.	High potential to occur on site.
California horned lark *Eremophila alpestris actia*	Federal: None State: None CDFG: CSC	Occupies a variety of open habitats, usually where trees and large shrubs are absent.	High potential to occur on site.
Coast (San Diego) horned Lizard *Phrynosoma coronatum* (*blainvillii* population)	Federal: None State: None CDFG: CSC	Chaparral and coastal sage scrub	Low potential to occur on site.
Coastal California gnatcatcher *Polioptila californica californica*	Federal: FT State: None CDFG: CSC	Low elevation coastal sage scrub and coastal bluff scrub.	Not expected to occur on site due to lack of suitable habitat.
Coastal western whiptail *Aspidoscelis tigris stejnegeri*	Federal: None State: None CDFG: CSC	Open, often rocky areas with little vegetation, or sunny microhabitats within scrub or grassland associations.	Not expected to occur on site due to lack of suitable habitat.
Cooper's hawk (nesting) *Accipiter cooperi*	Federal: None State: None CDFG: CSC	Primarily occurs in riparian areas and oak woodlands, most commonly in montane canyons. Known to use urban areas, occupying trees among residential and commercial.	High potential to occur on site, both for foraging and nesting.

Species Name	Status	Habitat Requirements	Potential for occurrence
Golden eagle *Aquila chrysaetos*	Federal: None State: None CDFG: CSC	In southern California, occupies grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys. Nests on rock outcrops and ledges.	High potential to occur on site for foraging. No nesting habitat on-site
Least Bell's vireo *Vireo bellii pusillus*	Federal: FE State: SE CDFG: None	Dense riparian shrubbery, preferably where flowing water is present.	Low potential to occur on site.
Loggerhead shrike *Lanius ludovicianus*	Federal: FSC State: None CDFG: CSC	Forages over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs.	High potential to occur on site.
Long-eared owl *Asio otus*	Federal: None State: None CDFG: CSC	Inhabit dense vegetation close to grasslands, as well as open forests shrub lands from sea level up to 2000 m elevation. They are common in tree belts along streams of plains and even desert oases. They can also be found in shelterbelts, small tree groves, thickets surrounded by wetlands, grasslands, marshes and farmlands.	Moderate potential to occur on site for foraging.
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	Federal: None State: None CDFG: CSC	Fine, sandy soils in coastal sage scrub and grasslands.	Low to moderate potential to occur on site.
Mountain plover (wintering) *Charadrius montanus*	Federal: None State: None CDFG: CSC	Does not nest in California. Occurs within the state only during the wintering season. Largest numbers winter among grasslands and agricultural areas within the interior areas of the state.	High potential to occur on site for winter foraging.
Northern harrier (nesting) *Circus cyaneus*	Federal: None State: None CDFG: CSC	Found mainly in open habitats such as fields, savannas, meadows, marshes, upland prairies, and desert steppe. Also occur in agricultural areas and riparian zones. Densest populations are found in large expanses of undisturbed, open habitats with dense, low vegetation.	High potential to occur on site for foraging, though not expected to nest on site due to a lack of suitable habitat.
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	Federal: None State: None CDFG: CSC	Coastal sage scrub, sage scrub/grassland ecotones, and chaparral.	Low potential to occur on site.

Species Name	Status	Habitat Requirements	Potential for occurrence
Orange-throated whiptail *Cnemidophorus hyperythrus*	Federal: None State: None CDFG: CSC	Coastal sage scrub, chaparral, non-native grassland, oak woodland, and juniper woodland.	Low potential to occur on site.
Prairie falcon (nesting) *Falco mexicanus*	Federal: None State: None CDFG: CSC	Require cliffs or rocky promontories for breeding; forage over grassland, sagebrush flats, desert, agricultural land, ranches and coastal plains.	High potential to occur on site for foraging, though not expected to nest on site due to a lack of suitable habitat.
Riverside fairy shrimp *Streptocephalus woottoni*	Federal: FE State: None CDFG: None	Restricted to deep seasonal vernal pools, vernal pool-like ephemeral ponds, and stock ponds.	Low potential to occur on site.
San Bernardino kangaroo rat *Dipodomys merriami parvus*	Federal: FE State: None CDFG: CSC	Typically found in Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and floodplains, and along washes with nearby sage scrub.	Low to moderate potential to occur on site.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	Federal: None State: None CDFG: CSC	Occupies a variety of habitats, but is most common among shortgrass habitats. Also occurs in sage scrub, but needs open habitats.	High potential to occur on site.
San Diego desert woodrat *Neotoma lepida intermedia*	Federal: None State: None CDFG: CSC	Found in a variety of shrub and desert habitats, primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth.	Not expected to occur on site due to lack of habitat.
Sharp-shinned hawk (nesting) *Accipiter striatus*	Federal: None State: None CDFG: CSC	The woodland areas that the hawk occupies range from boreal coniferous, mixed deciduous, bushy and riparian areas, savanna woodlands, and urban areas.	Potential to occur on site for foraging. Not expected to nest on-site (outside of nesting range)
Southwestern pond turtle *Actinemys marmorata pallida*	Federal: None State: None CDFG: CSC	Prefers streams, large rivers, slow-moving sloughs, and quiet waters. Aquatic habitats with adequate vegetative cover and exposed banks are preferred, but significant time is spent on upland terrestrial habits as well. Abundant basking sites and cover necessary, including logs, rocks, submerged vegetation, and undercut banks.	Not expected to occur on site due to lack of suitable habitat.
Southwestern willow flycatcher *Empidonax traillii extimus*	Federal: FE State: SE CDFG: None	Breeds in dense riparian habitats along rivers, streams, or other wetlands.	Potential to occur on site as a transient species, though not expected breed on site due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for occurrence
Stephens' kangaroo rat *Dipodomys stephensi*	Federal: FE State: ST CDFG: None	Open grasslands or sparse shrublands with less than 50% vegetation cover during the summer and sandy or sandy loam soils.	Low to moderate potential to occur on site.
Tricolored blackbird (nesting colony) *Agelaius tricolor*	Federal: FSC State: None CDFG: CSC	Found in cattail or tule marshes; forages in fields and farms.	Moderate potential to occur on site.
Vernal pool fairy shrimp *Branchinecta lynchi*	Federal: FT State: None CDFG: None	Restricted to seasonal vernal pools. Prefers cool-water pools that have low to moderate dissolved solids.	Low potential to occur on site.
Western yellow billed cuckoo *Coccyzus americanus*	Federal: None State: SE CDFG: None	Prefers moist thickets, willows, overgrown pastures, and orchards.	Not expected to occur on site due to lack of suitable habitat.
White-faced ibis (nesting colony) *Plegadis chihi*	Federal: FSC State: None CDFG: CSC	Winter foraging occurs in wet meadows, marshes, ponds, lakes, rivers, and agricultural fields. Requires extensive marshes for nesting.	High potential to occur on site foraging though not expected to support a nesting colony.
White-tailed kite (nesting) *Elanus leucurus*	Federal: FSC State: None CDFG: CFP	Usually found in open groves, river valleys, marshes and grasslands. Preference for perching and nesting and open ground.	High potential to occur on site for foraging, though not expected to nest on site due to a lack of suitable habitat.
Yellow-breasted chat *Icteria virens*	Federal: None State: None CDFG: CSC	Restricted to woodland edges and dense riparian thickets in dry, open habitats. Dense cover is important for foraging. Found frequently in farms, overgrown fields and abundant thickets.	Moderate potential to occur on site.
Yellow warbler *Dendroica petechia*	Federal: None State: None CDFG: CSC	Preferred habitats include edges of marshes and swamps, willow-lined streams, leafy bogs, thickets, orchards, farmlands, forest edges, and suburban yards and gardens.	High potential to occur on site.

2.4.1 Burrowing Owl Surveys

The majority of the MDP occurs within the MSHCP Survey Area for the western burrowing owl [Exhibit 4 – Burrowing Owl Survey Area]. For areas where access was granted, GLA biologists conducted focused burrow and burrowing owl surveys following the 2006 MSHCP Burrowing Owl Survey Instructions. For areas without access, a general roadside assessment was conducted unless view obstruction prevented such assessments.

Step I of the MSHCP Survey Instructions requires that an assessment be conducted to determine the presence of suitable habitat for the burrowing owl. Habitat for the burrowing owl is varied, including short-grass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), prairies, coastal dunes, desert floors, and some artificial, open areas as a year-long resident (Haug, et al. 1993). Burrowing owls require large open expanses of sparsely vegetated areas on gently rolling or level terrain with an abundance of active small mammal burrows (e.g., ground squirrels, rabbits, etc.). As a critical habitat feature need, they require the use of rodent or other burrows for roosting and nesting cover. They may also dig their own burrow in soft, friable soil (as found in Florida) and may also use pipes, culverts, and nest boxes where burrows are scarce (Robertson 1929). The mammal burrows are modified and enlarged. In the case of nesting owls, one burrow is typically selected for use as the nest; however, satellite burrows are usually found within the immediate vicinity of the nest burrow within the defended territory of the owl.

The MSHCP Survey Instructions acknowledge that the presence of suitable burrows is not the deciding factor on whether a site contains suitable habitat for burrowing owls. The presence/absence of suitable burrows is to be determined during Step II of the Survey Instructions (focused burrow surveys), once it has been determined that a site contains suitable habitat for the burrowing owl. The MDP area contains primarily agricultural lands, ruderal vegetation areas, and other disturbed areas unvegetated disturbed areas, many of which exhibit some basic suitability for burrowing owls. As such, focused burrow and focused burrowing owl surveys (Step II) were/are required for the MDP.

Focused burrow surveys were conducted by walking pedestrian transects within areas of suitable habitat in order to map suitable burrows. Transects were spaced no more than 30 meters apart in order effectively cover 100 percent of the ground surface. Transects were focused within the alignment survey areas, but also were conducted within a 500-foot buffer area as access allowed. As suitable burrows were identified, the burrows were mapped using a portable Global Positioning System (GPS) unit. Burrows were also inspected for the presence of diagnostic owl sign; including “whitewash” (owl excrement), regurgitated pellets, bones, feathers, etc. Portions of the surveyed area were excluded from focused burrow surveys based on a lack of suitable habitat, including those areas that contained existing development; areas of dense tree, shrub, and/or herbaceous vegetation cover; agricultural fields with active crops; and agricultural fields that had been recently tilled. In the case of the active agricultural areas, focused burrow surveys were conducted along dirt access roads, ditches, etc. that bordered the agricultural fields. Fallow fields that were not actively planted were evaluated with focused burrow surveys.

Focused burrowing owl surveys were conducted for all areas containing suitable burrows. The MSHCP Survey Instructions require four survey visits to determine the presence/absence of burrowing owls. Focused owl surveys were conducted on July 31, and August 7, 8, 11, 12, 20, 22, and August 26, 2008. Table 2-4 provides a summary of survey dates for burrowing owl surveys.

Table 2-4. Summary of focused burrowing owl survey dates.

Survey Date	Start Time	End Time	Wind (mph)	Cloud Cover %	Temperature (Start/End)	Biologists
7-31-08	645	800	0-1	0-2%	67 F/73 F	TK/KL
8-07-08	625	750	0-1	0-2%	66 F/75 F	TK/KL
8-08-08	545	800	0-1	0-2%	63 F/72 F	TK/KL
8-11-08	545	810	0-1	0-2%	57 F/63 F	TK/KL
8-12-08	1750	2005	2-5	25-30%	89 F/77 F	TK/KL
8-20-08	640	815	0-1	0-2%	53 F/77F	TK/KL/ IC/DM
8-22-08	700	800	0-1	0-2%	60 F/78F	TK/KL
8-26-08	740	800	0-4	0-2%	71 F/73 F	TK

2.5 Assessment of MSHCP Riparian/Riverine Areas and Vernal Pools

GLA conducted a preliminary assessment of the MDP area for riparian/riverine areas and vernal pools as defined by the MSHCP. *Volume I, Section 6.1.2* of the MSHCP describes the process through which protection of riparian/riverine areas and vernal pools would occur within the MSCHP Plan Area. The purpose is to ensure that the biological functions and values of these areas throughout the MSHCP Plan Area are maintained such that habitat values for species inside the MSCHP Conservation Area are maintained. The MSHCP requires that as projects are proposed within the overall Plan Area, the affect of those projects on riparian/riverine areas and vernal pools must be addressed.

The MSHCP defines riparian/riverine areas as *lands which contain Habitat dominated by trees, shrubs, persistent emergent mosses and lichens, which occur close to or which depend upon soils moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year*.

The MSHCP defines vernal pools as *seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season but normally lack wetland indictors of hydrology and/or vegetation during the drier portion of the growing season.*

With the exception of wetlands created for the purpose of providing wetlands Habitat or resulting from human actions to create open waters or from the alteration of natural stream courses, areas demonstrating characteristics as described above which are artificially created are not included in these definitions.

If avoidance is infeasible for any riparian/riverine areas or vernal pools located within the MDP project area, then a Determination of Biologically Equivalent or Superior Preservation (DBESP)

must be approved by the wildlife agencies taking into account mitigation offered to offset the loss of functions associated with riparian/riverine areas and/or vernal pools as they pertain to the Covered Species.

GLA mapped "riparian" vegetation throughout the MDP study area, regardless of whether it qualifies as MSHCP riparian vegetation or whether it should be excluded from this designation for one reason or other (e.g., artificial creation). Due to the time of year in which the assessments were conducted, a thorough evaluation of vernal pools was not feasible. GLA biologists noted areas with evidence of seasonal ponding (including cracked soils), and noted vegetation where present, but could not conduct a formal vernal pool presence/absence assessment.

2.6 Jurisdictional Assessment

GLA conducted a preliminary general assessment for waters subject to the jurisdictions of the Corps pursuant to Section 404 of the Clean Water Act (CWA), the RWQCB pursuant to Section 401 of CWA or pursuant to the California Porter-Cologne Act, and/or CDFG pursuant to Section 1602 of the California Fish and Game Code. Corps, RWQCB, and CDFG. GLA mapped features with the potential for jurisdiction, including agricultural ditches, other roadside ditches, basins, etc, but did not conduct a comprehensive wetland/waters delineation. The regulations pertaining to each agency are discussed below.

2.6.1 Corps Jurisdiction

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in Corps regulations at 33 CFR Part 328.3(a) as:

> *(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
> *(2) All interstate waters including interstate wetlands;*
> *(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:*
> *(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
> *(ii) From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or*
> *(iii) Which are used or could be used for industrial purpose by industries in interstate commerce...*
> *(4) All impoundments of waters otherwise defined as waters of the United States under the definition;*
> *(5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;*

(6) The territorial seas;
(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

(8) Waters of the United States do not include prior converted cropland.[1] Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA.

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(e) as:

...that line on the shore established by the fluctuation of 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.

1. Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al.

Pursuant to Article I, Section 8 of the U.S. Constitution, federal regulatory authority extends only to activities that affect interstate commerce. In the early 1980s the Corps interpreted the interstate commerce requirement in a manner that restricted Corps jurisdiction on isolated (intrastate) waters. On September 12, 1985, EPA asserted that Corps jurisdiction extended to isolated waters that are used or could be used by migratory birds or endangered species, and the definition of "waters of the United States" in Corps regulations was modified as quoted above from 33 CFR 328.3(a).

On January 9, 2001, the Supreme Court of the United States issued a ruling on *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al.* (SWANCC). In this case the Court was asked whether use of an isolated, intrastate pond by migratory birds is a sufficient interstate commerce connection to bring the pond into federal jurisdiction of Section 404 of the Clean Water Act.

The written opinion notes that the court's previous support of the Corps' expansion of jurisdiction beyond navigable waters (*United States v. Riverside Bayview Homes, Inc*.) was for a

[1] The term "prior converted cropland" is defined in the Corps' Regulatory Guidance Letter 90-7 (dated September 26, 1990) as "wetlands which were both manipulated (drained or otherwise physically altered to remove excess water from the land) and cropped before 23 December 1985, to the extent that they no longer exhibit important wetland values. Specifically, prior converted cropland is inundated for no more than 14 consecutive days during the growing season…." [Emphasis added.]

wetland that abutted a navigable water and that the court did not express any opinion on the question of the authority of the Corps to regulate wetlands that are not adjacent to bodies of open water. The current opinion goes on to state:

> *In order to rule for the respondents here, we would have to hold that the jurisdiction of the Corps extends to ponds that are not adjacent to open water. We conclude that the text of the statute will not allow this.*

Therefore, we believe that the court's opinion goes beyond the migratory bird issue and says that no isolated, intrastate water is subject to the provisions of Section 404(a) of the Clean Water Act (regardless of any interstate commerce connection). However, the Corps and EPA have issued a joint memorandum which states that they are interpreting the ruling to address only the migratory bird issue and leaving the other interstate commerce clause nexuses intact.

2. Rapanos v. United States and Carabell v. United States

On June 5, 2007, the U.S. Environmental Protection Agency (EPA) and Corps issued joint guidance that addresses the scope of jurisdiction pursuant to the Clean Water Act in light of the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* ("Rapanos"). The chart below was provided in the joint EPA/Corps guidance.

For project sites that include waters other than Traditional Navigable Waters (TNWs) and/or their adjacent wetlands or Relatively Permanent Waters (RPWs) tributary to TNWs and/or their adjacent wetlands as set forth in the chart below, the Corps must apply the significant nexus standard, that includes the data set forth in the *Approved Jurisdictional Determination Form* included as Appendix A.

For "isolated" waters or wetlands, the joint guidance also requires an evaluation by the Corps and EPA to determine whether other interstate commerce clause nexuses, not addressed in the SWANCC decision are associated with isolated features on project sites for which a jurisdictional determination is being sought from the Corps. The information pertaining to isolated waters is also included on the *Approved Jurisdictional Determination Form* included as Appendix A.

The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent

- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters
- Significant nexus includes consideration of hydrologic and ecologic factors

3. Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term “wetlands” (a subset of “waters of the United States”) is defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987 the Corps published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the 1987 Wetland Delineation Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the manual and Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- more than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands[2]);

- soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and

- Whereas the 1987 Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with “problematic hydrophytic vegetation”, which require a minimum of 14 days of ponding to be considered a wetland.

[2] Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands. U.S. Fish and Wildlife Service Biological Report 88(26.10).

The MDP area contains roadside ditches and other ditches, which if shown to be historic diversions of natural waters, would be potential Corps jurisdictional waters. However, the majority (if not all) of these ditches would be considered as non-RPWs, and so these features would need to be evaluated to determine if they exhibit a significant nexus to TNWs, and therefore jurisdictional themselves. Ditches shown to have been wholly excavated in uplands would not be subject to the jurisdiction of the Corps.

Areas supporting hydrophytic vegetation (such as riparian areas identified in Exhibit 3) would need to be evaluated to determine whether they satisfy wetland criteria. Any "isolated" wetlands will need to be evaluated by the Corps and EPA following their joint regulatory guidance, in order to confirm whether any of the "isolated" wetlands would be jurisdictional.

2.6.2 Regional Water Quality Control Board Jurisdiction

Subsequent to the SWANCC decision, the Chief Counsel for the State Water Resources Control Board issued a memorandum that addressed the effects of the SWANCC decision on the Section 401 Water Quality Certification Program.[3] The memorandum states:

> *California's right and duty to evaluate certification requests under section 401 is pendant to (or dependent upon) a valid application for a section 404 permit from the Corps, or another application for a federal license or permit. Thus if the Corps determines that the water body in question is not subject to regulation under the COE's 404 program, for instance, no application for 401 certification will be required…*
>
> *The SWANCC decision does not affect the Porter Cologne authorities to regulate discharges to isolated, non-navigable waters of the states….*
>
> *Water Code section 13260 requires "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." (Water Code § 13260(a)(1) (emphasis added).) The term "waters of the state" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." (Water Code § 13050(e).) The U.S. Supreme Court's ruling in SWANCC has no bearing on the Porter-Cologne definition. While all waters of the United States that are within the borders of California are also waters of the state, the converse is not true—waters of the United States is a subset of waters of the state. Thus, since Porter-Cologne was enacted California always had and retains authority to regulate discharges of waste into any waters of the state, regardless of whether the COE has concurrent jurisdiction under section 404. The fact that often Regional Boards opted to regulate discharges to, e.g., vernal pools, through the 401 program in lieu of or in addition to issuing waste discharge requirements (or waivers thereof) does not preclude the regions*

[3] Wilson, Craig M. January 25, 2001. Memorandum addressed to State Board Members and Regional Board Executive Officers.

from issuing WDRs (or waivers of WDRs) in the absence of a request for 401 certification….

In this memorandum the SWRCB's Chief Counsel has made the clear assumption that fill material to be discharged into isolated waters of the United States is to be considered equivalent to "waste" and therefore subject to the authority of the Porter Cologne Water Quality Act. However, while providing a recounting of the Act's definition of waters of the United States, this memorandum fails to also reference the Act's own definition of waste:

"Waste" includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.

The lack of inclusion of a reference to "fill material," "dirt," "earth" or other similar terms in the Act's definition of "waste," or elsewhere in the Act, suggests that no such association was intended. Thus, the Chief Counsel's memorandum signals that the SWRCB is attempting to retain jurisdiction over discharge of fill material into isolated waters of the United States by administratively expanding the definition of "waste" to include "fill material" without actually seeking amendment of the Act's definition of waste (an amendment would require action by the state legislature). Consequently, discharge of fill material into waters of the State not subject to the jurisdiction of the Corps pursuant to Section 404 of the Clean Water Act may require authorization pursuant to the Porter Cologne Act through application for waste discharge requirements (WDRs) or through waiver of WDRs, despite the lack of a clear regulatory imperative.

2.6.3 California Department of Fish and Game Jurisdiction

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFG defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFG's definition of "lake" includes "natural lakes or man-made reservoirs."

CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. CDFG Legal Advisor has prepared the following opinion:

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects and riparian vegetation will be treated like natural waterways...

- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses, should be treated by [CDFG] as natural waterways...

- Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Game Code provisions...

Thus, CDFG jurisdictional limits closely mirror those of the Corps. Exceptions are CDFG's exclusion of isolated wetlands (those not associated with a river, stream, or lake), the addition of artificial stock ponds and irrigation ditches constructed on uplands, and the addition of riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal wetland status.

3.0 RESULTS AND DISCUSSION

The following is a discussion of the results of habitat assessments and focused biological surveys, along with recommendations for future studies.

3.1 Vegetation Mapping

Nearly all of the MDP area has been disturbed to some degree, including the survey alignments and surrounding lands. Exhibit 5 provides representative photographs of existing site conditions within the MDP area. Of the alignments evaluated by in this report, approximately 60 acres of the study areas extend through developed areas, including residential properties, public facilities, commercial chicken farm and dairy operations, and paved and dirt roads; with another 100 acres of the alignments containing active croplands. At least 6.38 acres contained native riparian vegetation, including willow (*Salix* spp.), mule fat (*Baccharis salicifolia*), and Freemont's cottonwood (*Populus fremontii*). Much of the riparian vegetation occurs in scattered isolated patches, though at least one of the surveyed alignments terminates at the edge of extensive riparian habitat associated with the San Jacinto River. The remaining majority of the MDP alignments extend through disturbed areas supporting a predominance of non-native and native ruderal vegetation, including non-native grasses, though these areas are often interspersed with remnants of alkali playa vegetation. Some of the remnant alkali playa areas exhibited evidence of seasonal ponding, though at the time of surveys there was not enough vegetation to adequately evaluate the features as vernal pools. Table 3.1 provides a summary of general vegetation/land use types identified within the MDP.

Table 3.1 – General vegetation types/land uses within the MDP

Vegetation/Land Use Type	Area (Acres)
Disturbed	203.37
Field Croplands	101.36
Residential/Urban/Exotic	60.89
Riparian	6.38
No Access	11.22
Total Acreage	**383.22**

3.2 MSHCP Riparian/Riverine Areas and Vernal Pools

3.2.1 MSHCP Riparian/Riverine Areas

As noted above, at least 6.38 acres of "riparian" areas occur within the MDP alignments, though additional areas may exist within areas that could not be accessed [Exhibit 6]. The riparian areas that were mapped range from roadside/agricultural ditches, to ponds and basins, but also included the edge of extensive riparian habitat associated with the San Jacinto River. Some of the mapped areas qualify as MSHCP Riparian Areas, though others would likely be excluded due to their artificial nature. Project-specific mapping would be required to determine which areas may be subject to MSHCP requirements, and which may not.

Numerous roadside ditches were noted throughout the MDP area, though not all of these could be mapped and evaluated due to the restricted access. The majority (if not all) of the ditches would be excluded as MSHCP "riverine areas" due to their artificial nature.

Section 6.1.2 of the MSHCP requires habitat assessments (and focused surveys where suitable habitat is present) for riparian bird species with MSHCP survey requirements, including the least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii traillii*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). All three species are migratory birds that would have some potential to occur within the MDP area as transient individuals during migration. However, the yellow-billed cuckoo would not be expected to breed within the MDP area due to a lack of suitable habitat.

The southwestern willow flycatcher has some potential to breed within the San Jacinto River, although only migratory individuals have been detected recently within the vicinity of MDP project area (near the ends of Line J and K). However, the willow flycatcher would not be expected to breed within any of the MDP areas located away from the San Jacinto River. Project-specific focused surveys should be conducted for the willow flycatcher within potentially suitable habitat to be impacted by the project.

The least Bell's vireo occupies portions of the nearby San Jacinto River, particularly riparian habitats located on either side of the existing levee upstream of the State Street Bridge, and may

have a low potential to breed within scattered isolated riparian vegetation within the MDP, though the opportunity is extremely limited. In particular, one area of isolated riparian habitat was mapped that provides some potential for use by the least Bell's vireo, though this is unlikely due to the isolation of the habitat. Project-specific focused surveys should be conducted for the vireo within potentially suitable habitat to be impacted by the project.

3.2.2 MSHCP Vernal Pools and Fairy Shrimp

Pursuant to *Section 6.1.2* of the MSHCP, the MDP must be evaluated for vernal pools and habitat for listed fairy shrimp. The majority of lands within the MSHCP are not likely to support vernal pools given their disturbed nature. However, playa areas are known to exist on site, including within the area designated as Proposed Noncontiguous Habitat Block 6 by the MSHCP (Cell Group V, and Cells 2775 and 2878). The proposed Habitat Block includes an existing chicken ranch and other agricultural lands where playa areas are interspersed amongst these land uses. This corresponds with MDP Lat Y-2 through Lat Y-11. Although GLA did note some scattered "playa" areas surrounding the chicken ranch property and adjacent lands, these areas could not be adequately evaluated for vernal pools/fairy shrimp due to seasonal constraints, though previous data exists from past studies of the general area.

The MSHCP states that the proposed Habitat Block provides preservation value for several special-status vernal pool plant species, including the Federally listed California Orcutt grass, thread-leaved brodiaea, and spreading navarretia; as well as the vernal pool fairy shrimp (*Branchinecta lynchi*). However, it is not clear by existing records whether one or more of these species have actually been detected in this area. Based on a review of existing information, it appears that the MSHCP at least regards these areas as having conservation value for the sensitive vernal pool species.

Besides the lands within Proposed Noncontiguous Habitat Block 6, several additional areas were noted throughout the MDP that had evidence of seasonal ponding, and therefore have the potential to support listed fairy shrimp and/or vernal pool plant species. This included Line E-3, the southern end of Line V, the western end of Line 1, and the northern end of Line H.

Future project-specific focused surveys should be conducted during the appropriate season to confirm the presence/absence of the relevant vernal pool plants and listed fairy shrimp.

3.3 Special-Status Plants

Volume I, Sections 6.1.3 and 6.3.2 (respectively) of the MSHCP requires that within the NEPSSA and CAPSSA, site-specific focused surveys for Narrow Endemic Plant Species and Criteria Area Plant Species will be required for all public and private projects where appropriate soils and habitat are present. Surveys are to be conducted in the appropriate season, depending on rainfall requirements and blooming periods.

The western portion of the MDP area coincides with CAPSSA number 3. Locations of smooth tarplant were detected along the alignments coinciding with Cell Group V (including Line Y and Lat Y-4 through Lat Y-7), which are part of a larger population within the adjacent areas.

Approximately 25,000 tarplant individuals were counted within the alignments themselves, in addition to tens of thousands more in areas adjacent to the survey alignments. Smaller patches of smooth tarplant were also observed along Line V, though not specifically mapped. Exhibit 7 depicts mapped locations of smooth tarplant within the CAPSSA. Exhibit 8 depicts sensitive soil mapping (Traver Series) within the CAPSSA. Additional populations of smooth tarplant were detected elsewhere within the MDP project area, however these were located outside of the CAPSSA, and so therefore would not be subject to any MSHCP requirements. Only target species detected within the NEPSSA or CAPSSA will be subject to MSHCP requirements.

In addition to the smooth tarplant, additional Criteria Area Plants have the potential to occur within the MDP area based on the presence of suitable habitat. Coulter's goldfields has been mapped in proximity to the CAPSSA, north of Cell Group V, and may occur with smooth tarplant along the Cell Group V alignments.

The western/central portion of the MDP area coincides with NEPSSA number 3. At least two of the plants (Munz's onion and many-stemmed dudleya) are not expected to occur within the MDP area due to a lack of suitable habitat. Other of the Narrow Endemic Plants may have the potential to occur based on potentially suitable habitat. As noted above, the area coinciding with Cell Group V is one that would need to be thoroughly evaluated for vernal pool plant species, including the Narrow Endemic Plants that are associated with vernal pools/playas.

Project-specific surveys would be required during the appropriate time of the year to determine the presence/absence of all Narrow Endemic Plants and Criteria Area Plants.

For positive detections of target plant species within the NEPSSA and CAPSSA, the MSHCP requires the avoidance of greater than 90 percent of those areas that provide long-term conservation value for the particular species. If avoidance is not feasible then approval of a DBESP is required. The majority of smooth tarplant associated with Cell Group V alignments occurs in areas targeted for avoidance as part of the broader conservation criteria associated with Cell Group V. Areas of smooth tarplant located within the CAPSSA but located outside of the criteria-targeted area will be subject to the 90 percent avoidance or DBESP requirement.

3.4 Special-Status Animals

With the exception of riparian bird species and listed fairy shrimp (discussed above) with special survey requirements (*Volume I, Section 6.1.2* of the MSHCP), *Section 6.3.2* addresses additional animal species with MSHCP survey/conservation requirements. The MSHCP designates survey areas for the western burrowing owl, small mammals, and amphibians. As noted above, the majority of the MDP alignments occur within the burrowing owl survey area. The extreme northern end of one alignment terminates at the edge of the mammal survey area for the Los Angeles pocket mouse and San Bernardino kangaroo rat, however the rest of the MDP alignments are located outside of the mammal survey areas. The MDP does not coincide with the amphibian survey areas.

3.4.1 Burrowing Owl

Potentially suitable burrows were mapped throughout the MDP survey areas, however no burrowing owls were detected during focused surveys. Though no burrowing owls were detected during the focused surveys, much of the MDP area has a moderate to high probability to support owls, whether breeding pairs, resident unpaired individuals, or transient individuals. Future habitat assessments and focused surveys (if suitable habitat/burrows are present) should be conducted for areas that could not be accessed for the current study. In addition, updated project-specific focused surveys should be conducted for areas that have been previously surveyed.

MSHCP Objective 5 for the burrowing owl states that if burrowing owls are detected on a project site then appropriate action(s) shall be taken as follows:

If the site is within the Criteria Area, then at least 90 percent of the area with long-term conservation value will be included in the MSHCP Conservation Area. Otherwise:

1. If the site contains, or is part of an area supporting less than 35 acres of suitable habitat or the survey reveals that the site and the surrounding area supports fewer than 3 pairs of burrowing owls, then the on-site burrowing owls will be passively or actively relocated following accepted protocols.

2. If the site (including adjacent areas) supports three or more pairs of burrowing owls, supports greater than 35 acres of suitable habitat and is non-contiguous with MSHCP Conservation Area lands, at least 90 percent of the area with long-term conservation value and burrowing owl pairs will be conserved onsite.

Since the majority of the MDP occurs outside of the Criteria Area, then the basis for long-term conservation would depend on the number of breeding pairs present within a project area (three or more pairs versus fewer than three pairs). If the 90-percent avoidance requirement would apply, but avoidance was not feasible, then a DBESP would need to be approved to mitigate for the loss of occupied owl habitat. Furthermore, whether avoidance is not required or not feasible, any burrowing owls present at a project site must be relocated following accepted protocols. Take of active nests must be avoided.

3.4.2 Small Mammals

Nearly all of the MDP area occurs outside of the Mammal Species Survey Area. As such, there are no survey/conservation requirements associated with mammals for project areas occurring outside of the Mammal Species Survey Area. However, the ends of two alignments (Line J and Line K) coincide with the edge of the Mammal Species Survey Area for the Los Angeles pocket mouse (LAPM) and San Bernardino kangaroo rat (SBKR). Although LAPM and SBKR have both been documented in the active channel portions of the San Jacinto River, the areas potentially affected by the MDP project are generally unsuitable for both species. Based on past mammal trapping conducted for the San Jacinto River, these areas are mostly unoccupied, with potentially trace individuals within pockets of suitable habitat. As with the plants and burrowing

owl, any occupied habitat with long-term conservation value for the mammal species is subject to the 90% avoidance/DBESP requirement. However, the areas to be affected by Line J and K are not expected to support habitat with long-term conservation value.

3.5 Nesting Birds

The MDP area contains trees, shrubs, ground cover, and structures that provide suitable habitat for nesting migratory birds, including raptors as discussed above. The Migratory Bird Treaty Act (MBTA) makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R.21). In addition, sections 3505, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs. The MSHCP does not allow for the take of active nests.

For any vegetation or structures to be removed during the nesting season (February 1 to August 31), project-specific nesting bird surveys should be conducted to determine the presence/absence of active nests. If active nests are identified, appropriate avoidance buffers should be established until the nesting activity has completed, and fledglings have left the nest and are no longer dependent on the parents.

3.6 Raptor Foraging

Much of the MDP area (exceptions include portions of the "developed" areas) provides foraging and breeding habitat for many raptor species, including special-status raptors. The loss of raptor habitat is covered and mitigated for through participation with the MSHCP. Direct impacts to raptors (and other migratory birds), including their active nests, are prohibited through the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. As such, vegetation removals should be conducted outside of the nesting season, but if not feasible then nesting bird surveys should be conducted prior to any removals.

3.7 Jurisdictional Waters

The MDP area contains numerous drainage and other aquatic features, including various agricultural and non-agricultural roadside ditches, and basins [Exhibit 9 – Areas Requiring Jurisdictional Delineations]. Project-specific jurisdictional delineations would be required to determine whether features would be subject to the jurisdictions of the Corps, RWQCB, and CDFG. Project alignments where potential jurisdictional features were detected include the following:

- Line 1 – western end
- Line 1/Line 3 transition – west of the North Basin
- Line 2 – roadside swale/ditch along Ramona Expressway
- Line 4 – east of the North Basin
- Line 5
- Line 6
- Line C – south of Esplanade Avenue Line Z

- Line E-Y-Z Confluence Basin
- Line E – terminus at San Jacinto Reservoir
- Line E-G Confluence
- Line E-3
- Line G
- Line G-3 – south of Cottonwood Avenue
- Line H – between Ramona Expressway and the San Jacinto River
- Line J – terminus at San Jacinto River
- Line K – terminus at San Jacinto River
- Line V
- Line Y
- Line Y-1
- Lat Y1
- Line Z

Although the above-referenced alignments represent the vast majority of areas with potential jurisdictional waters, potential features may exist within portions of the MDP not reviewed during this study. In particular developed areas may be contain roadside ditches and other drainage/storm drain facilities that may require evaluation.

3.7.1 Corps Jurisdiction

The MDP area contains roadside ditches and other ditches, which if shown to be historic diversions of natural waters, would be potential Corps jurisdictional waters. However, the majority (if not all) of these ditches would be considered as non-RPWs, and so these features would need to be evaluated to determine if they exhibit a significant nexus to TNWs, and therefore are jurisdictional themselves. Ditches that are shown to have been wholly excavated in uplands would not be subject to the jurisdiction of the Corps.

Areas supporting hydrophytic vegetation (such as the riparian areas) would need to be evaluated to determine whether they satisfy wetland criteria. Any "isolated" wetlands will need to be evaluated by the Corps and EPA following their joint regulatory guidance, in order to confirm whether any of the "isolated" wetlands would be jurisdictional.

3.7.2 Regional Water Quality Control Board Jurisdiction

Many of the features within the MDP area may not be subject to Corps jurisdiction as a water of the United States, but that may be subject to the WDRs of the RWQCB as waters of the State. This may include isolated basins and seasonal ponded features that support aquatic resources such as fairy shrimp, including non-listed species such as the versatile fairy shrimp (*Branchinecta lindahli*).

3.7.3 California Department of Fish and Game Jurisdiction

The MDP area contains features, including drainage ditches that would be subject to CDFG jurisdiction. Project-specific jurisdictional delineations will be required to determine the extent

of CDFG jurisdiction. Impacts to CDFG jurisdiction will require a Streambed Alteration Agreement.

4.0 DISCUSSION AND RECOMMENDATIONS

The following provides recommendations for focused surveys and other actions necessary to obtain project-specific compliance with the biological requirements of the MSHCP, and other regulatory requirements (e.g., CWA Section 404).

4.1 Riparian/Riverine Areas and Vernal Pools (Section 6.1.2)

4.1.1 Riparian/Riverine Areas

The project-specific mapping of riparian and unvegetated riverine features will be required pursuant to Section 6.1.2 of the MSHCP. For areas not excluded as artificially created, the MSHCP requires 100 percent avoidance of riparian/riverine areas. If avoidance is not feasible, then individual projects will require the approval of a DBESP including appropriate mitigation to offset the loss of functions and values as they pertain to the MSHCP covered species. Riparian vegetation will also need to be evaluated for the least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo (see below).

At a minimum, the areas of riparian vegetation identified in Exhibit 6, and the areas required for jurisdictional delineation identified in Exhibit 9 should be evaluated as MSHCP riparian/riverine areas.

4.1.2 Vernal Pools

The project-specific mapping of vernal pools will be required pursuant to Section 6.1.2 of the MSHCP. As noted above, vernal pools (or similar seasonal ponding alkali playa areas) have a higher potential to occur at least in the area comprising Cell Group V, but have a potential to occur elsewhere within the MDP project area. For areas not excluded as artificially created, the MSHCP requires 100 percent avoidance of vernal pools, including their supporting watersheds. If avoidance is not feasible, then individual projects will require the approval of a DBESP including appropriate mitigation to offset the loss of functions and values as they pertain to the MSHCP covered species. Vernal pools and other seasonal ponding depressions will also need to be evaluated listed fairy shrimp (see below).

4.2 Special-Status Plants (MSHCP Section 6.1.3 and 6.3.2)

Within areas of suitable habitat associated with the NEPSSA and CAPSSA, project-specific focused plants surveys will be required. Including the smooth tarplant mapped as part of this study, the MSHCP requires at least 90 percent avoidance of areas providing long-term conservation value for the NEPSSA and CAPSSA target species. If avoidance is not feasible, then individual projects will require the approval of a DBESP including appropriate mitigation.

Furthermore, the smooth tarplant mapped within Cell Group occurs within areas targeted for conservation as part of the Cell Group V criteria.

4.3 Special-Status Animals (MSHCP Section 6.1.2 and Section 6.3.2)

4.3.1 Burrowing Owl

Focused burrow/burrowing owl surveys will be required within suitable habitat for properties that could not be accessed for this study. With the exception of properties that are completely developed, all other properties (including croplands and disturbed areas) should be subject to future burrowing owl habitat assessments (and potentially focused surveys). Focused surveys that were conducted as part of this study should also be updated.

Pursuant to MSHCP Objective 5 for the burrowing owl, 90 percent avoidance will be required for areas providing long-term conservation value for the species, depending on the location (inside or outside the Criteria Area) and the number of pairs present or suitable habitat available. If avoidance is infeasible, then a DBESP will be required, including associated relocation of burrowing owls. If conservation is not required, then owl relocation will still be required following accepted protocols. Take of active nests will be avoided, so it is strongly recommended that any relocation occur outside of the nesting season.

4.3.2 Small Mammals

Based on the location of the MDP alignments relative to the MSHCP mammal survey area, it is unlikely that detailed mammal trapping will be required. However, a permitted mammal biologist should at least assess the alignment(s) occurring at the edge of the MSHCP mammal survey area (Line J and K). If it is determined that a project will result in unavoidable impacts to more than 10% of habitat providing long-term conservation value for Los Angeles pocket mouse and/or San Bernardino kangaroo rat, then a DBESP will be required.

4.3.3 Special-Status Riparian Birds

Based on the currently proposed alignments, focused surveys for least Bell's vireo are recommended for at least one area of isolated riparian vegetation (Line G) located away from the San Jacinto River. Depending on the extent of proposed impacts associated with alignments at the edge of the San Jacinto River (Line J and K), focused surveys for vireo and willow flycatcher may be warranted at this location, and should be further assessed on a project-specific level. Focused surveys would not be required for the western yellow-billed cuckoo based on a lack of suitable habitat.

4.3.4 Listed Fairy Shrimp

Project-specific assessments will be required for listed fairy shrimp in association vernal pools and other suitable seasonal ponding features. Habitat assessments (and focused surveys if necessary) should be conducted during the rainy season in order to adequately identify all potential habitat features. Areas within the MDP with the greater potential to support listed fairy

shrimp (particularly vernal pool fairy shrimp) includes the alignments within Cell Group V. However, additional areas of seasonal ponding within the overall MDP project area would need to be evaluated. This includes potentially suitable habitat identified within Line E-3, the southern end of Line V, the western end of Line 1, and the northern end of Line H. A DBESP will be required for occupied pools where avoidance is infeasible, and where pools are not required for inclusion into the MSHCP conservation area.

4.4 Jurisdictional Waters

Project-specific delineations will be required to determine the limits of Corps, RWQCB, and CDFG jurisdiction. Impacts to jurisdictional waters will require authorization by the corresponding regulatory agency, including a Section 404 permit from the Corps, Water Quality Certification from the RWQCB, and a Streambed Alteration Agreement from CDFG.

4.5 Joint-Project Review

The San Jacinto Valley MDP is considered to be a Covered Activity under the MSHCP, and so is not subject to conservation land acquisition through the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) process. However, the project is subject to the Joint Project Review (JPR) process, whereby the Regional Conservation Authority (RCA) will review and evaluate the project and determine the project's compliance with the MSHCP requirements. In addition, the RCA's findings will be subsequently subject to the review and comment by the wildlife agencies (U.S. Fish and Wildlife Service & CDFG). In order to ensure a successful JPR, all DBESP documentation should be reviewed at least concurrent with JPR, if not in advance of JPR.

5.0 REFERENCES

American Ornithologists' Union. 1998. Checklist of North American Birds, Seventh Edition.

California Department of Fish and Game. February 2008. Special Animals. State of California Resources Agency, Sacramento, California.

California Department of Fish and Game. September 2008. Complete List of Amphibian, Reptile, Bird, and Mammal Species in California. State of California Resources Agency, Sacramento, California.

California Department of Fish and Game. October 2008. State and Federally Listed Endangered and Threatened Animals of California. State of California Resources Agency. Sacramento, California.

California Department of Fish and Game. January 2009. California Natural Diversity Database: RareFind 2. Records of occurrence for U.S.G.S. 7.5- minute Quadrangle maps: Imperial Beach and Otay Mesa. California Department of Fish and Game, State of California Resources Agency. Sacramento, California.

California Native Plant Society. 2009. Inventory of Rare and Endangered Plants of California. (Seventh Edition). Accessible online at <http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>

Collins, J. T. 1997. Standard common and scientific names for North American amphibians and reptiles. *Herpetological Circular* (25), 4th ed. Society for the Study of Amphibians and Reptiles, Lawrence, Kansas.

County of Riverside. 2003. Final Western Riverside County Multiple Species Habitat Conservation Plan.

County of Riverside Environmental Programs Department. 2006. Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Conservation Plan Area.

Haug, E. A., B. A. Millsap, and M. S. Martell. 1993. Burrowing Owl (Speotyto cunicularia). In The Birds of North America, No. 130 (A. Poole and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington, D.C.: The American Ornithologists' Union.

Roberts, F.M., S.D. White, A.C. Sanders, D.E. Bramlet, and S. Boyd. 2004. The Vascular Plants of Western Riverside County, California, An Annotated Checklist. F.M. Roberts Publications. 192 pp.

Robertson, J. M. 1929. Some observations on the feeding habits of the burrowing owl. Condor 31: 38-39.

Stebbins, R. C. 1985. A field guide to western reptiles and amphibians. McGraw Hill Book Company, New York, New York.

6.0 CERTIFICATION

*"**CERTIFICATION**: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief."*

DATE: 2/17/09 SIGNED: Paul F Mosher

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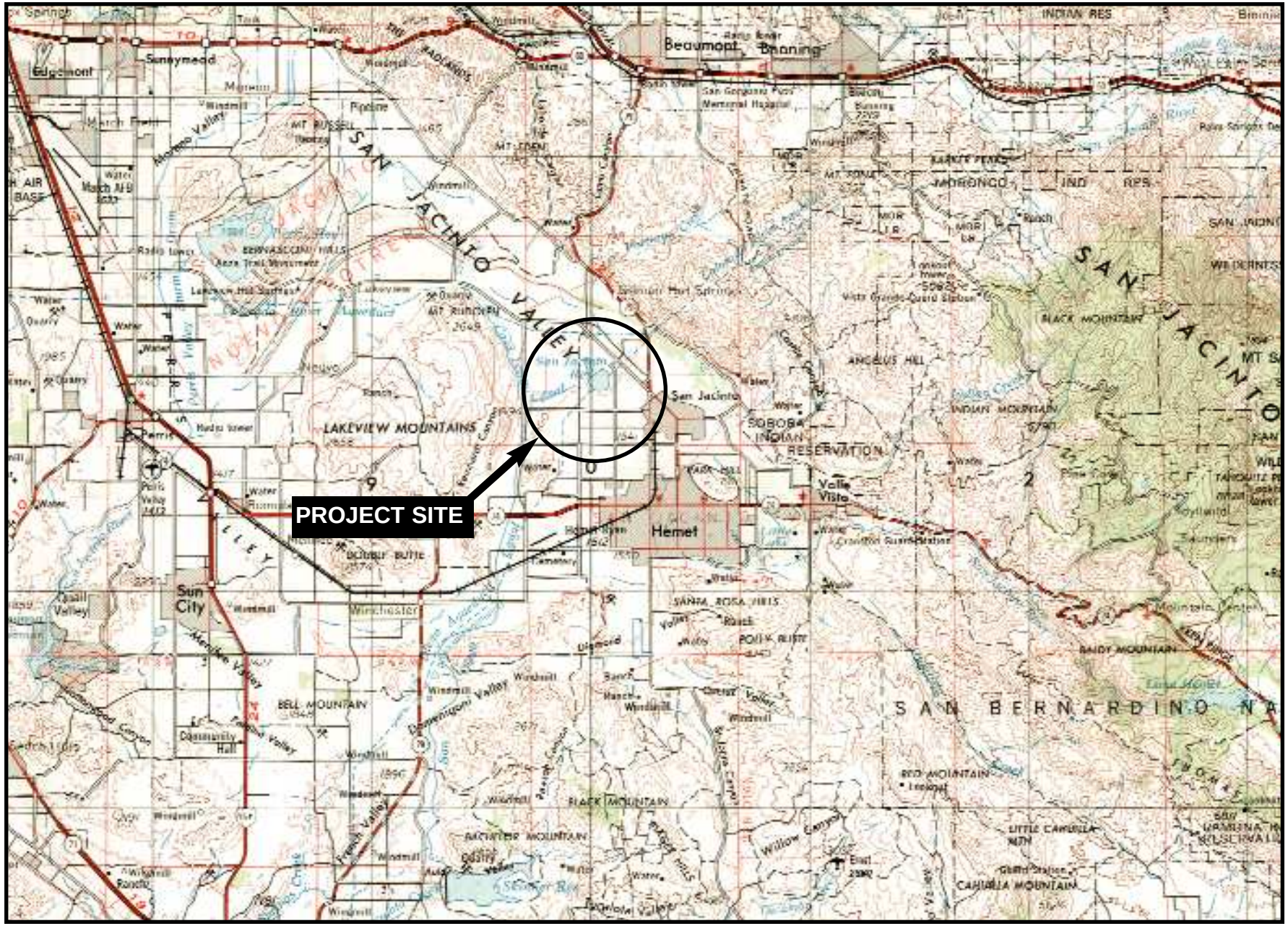
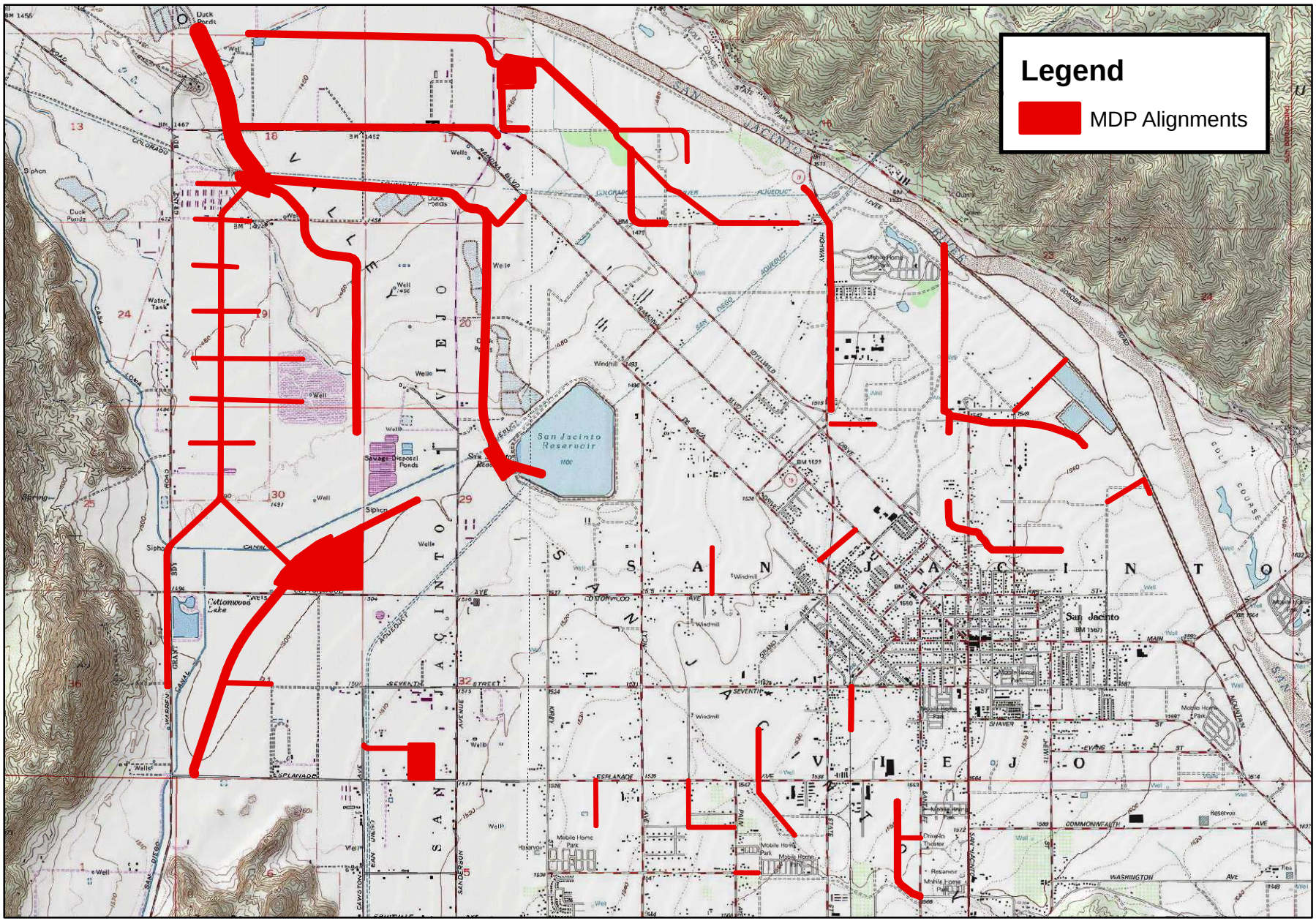


SAN JACINTO VALLEY MASTER DRAINAGE PLAN

Regional Map

GLENN LUKOS ASSOCIATES

EXHIBIT 1



Adapted from USGS San Jacinto and Lakeview quadrangles

NORTH

0 2,000 4,000 6,000

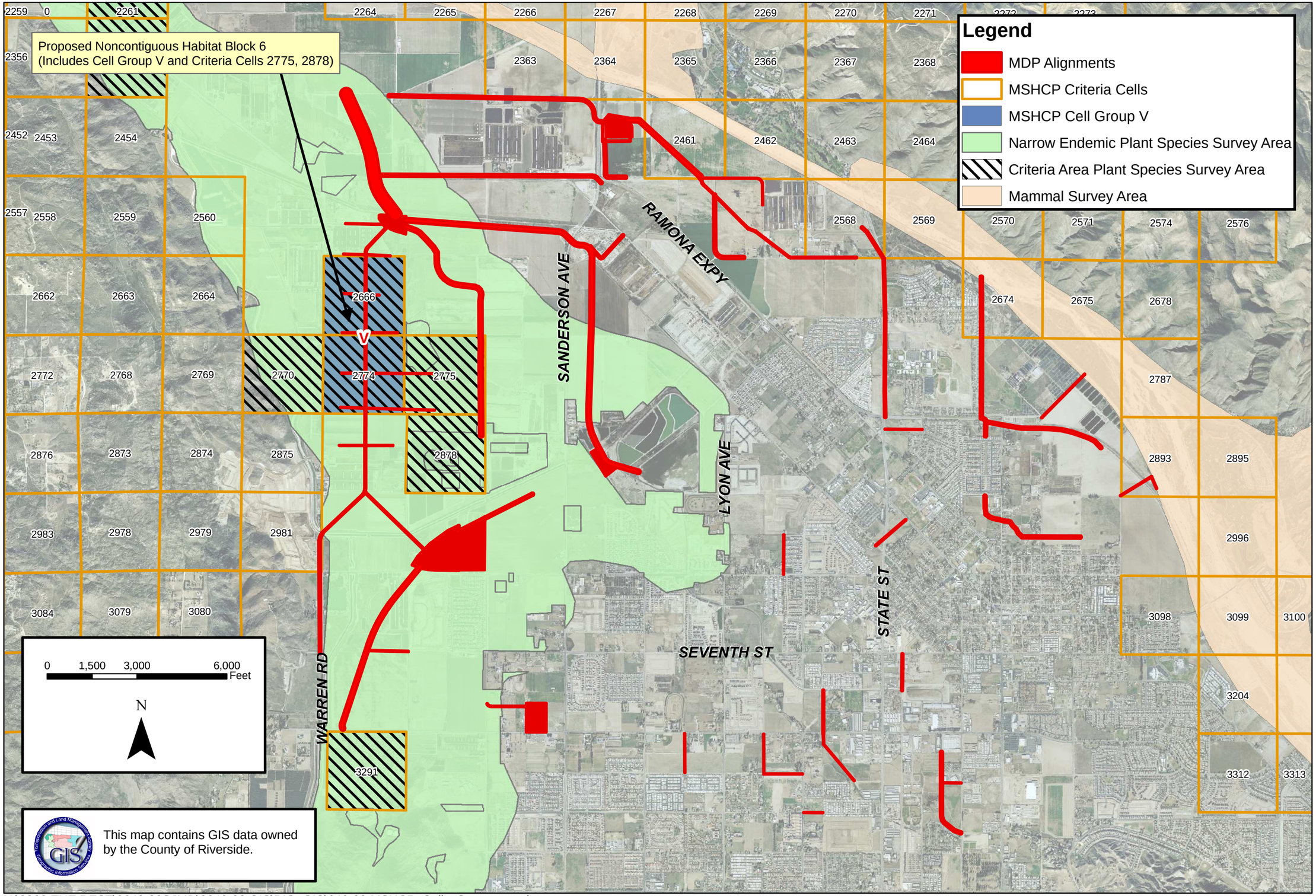
FEET

SAN JACINTO VALLEY MASTER DRAINAGE PLAN

Vicinity Map

GLENN LUKOS ASSOCIATES

EXHIBIT 2



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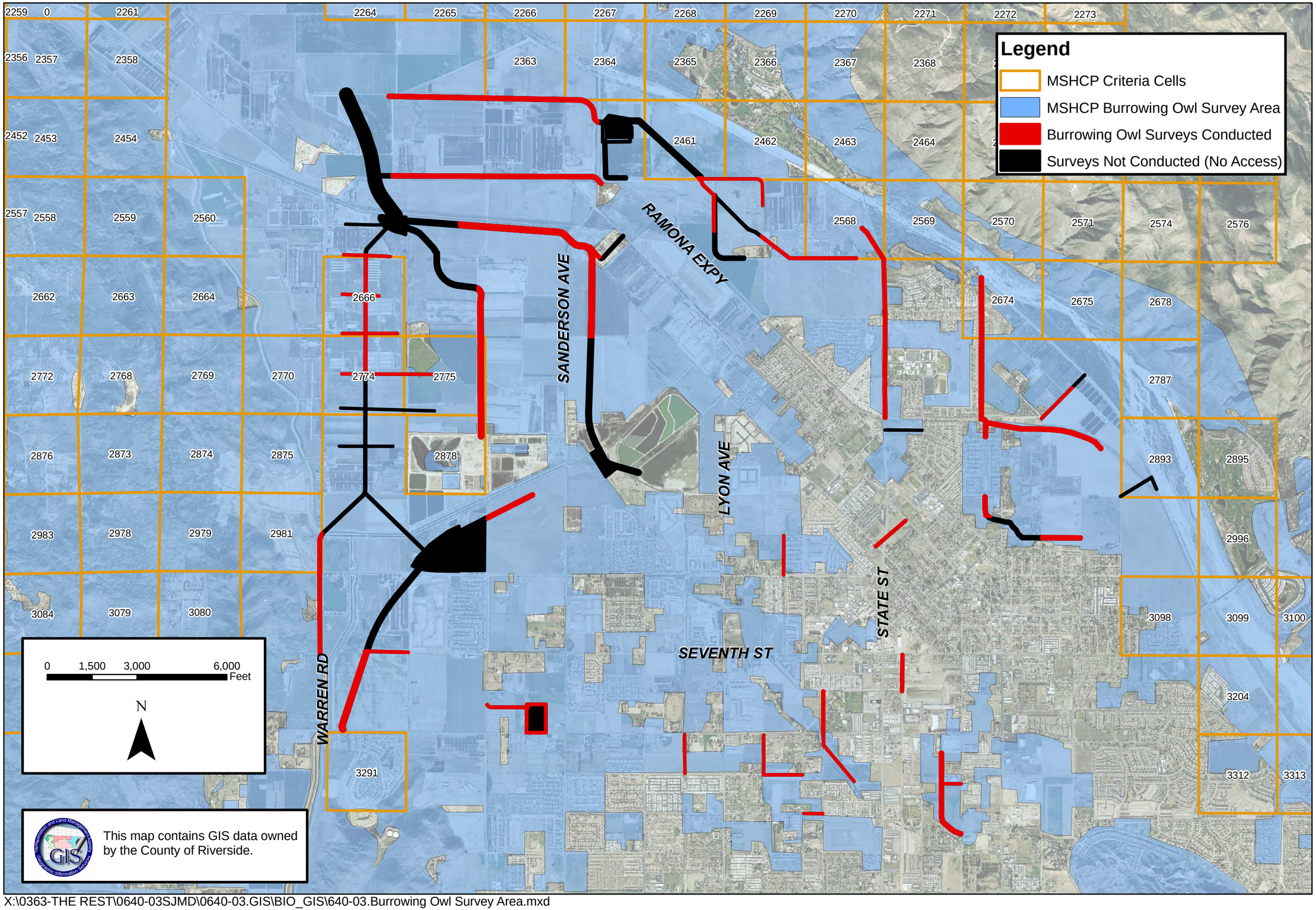
GLENN LUKOS ASSOCIATES

EXHIBIT 3

SAN JACINTO VALLEY MASTER DRAINAGE PLAN

MSHCP Overlay Map



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GLENN LUKOS ASSOCIATES

EXHIBIT 4

SAN JACINTO VALLEY MASTER DRAINAGE PLAN

Burrowing Owl Survey Areas

Photograph 1: View of survey area for Line H looking North. Photo depicts typical road side swale parallel to State Street.

Photograph 2: View of survey area for Line 2 adjacent to Ramona Expressway. Photo depicts typical roadside swale and agricultural land.

GLENN LUKOS ASSOCIATES

EXHIBIT 5

SAN JACINTO VALLEY MASTER DRAINAGE PLAN

Site Photographs

Photograph 3: View of survey area for Line G-3 looking south.
The photo depicts an artificial drainage dtich within a developed area.

Photograph 4: View of survey area for Line E looking west.

GLENN LUKOS ASSOCIATES

EXHIBIT 5

SAN JACINTO VALLEY MASTER DRAINAGE PLAN

Site Photographs

Photograph 5: View of survey area for Line G-3 looking south.
The photo represents a typical alignment through agricultural and other disturbed areas.

Photograph 6: View of survey area for Line E-3, depicting an area with indicators of seasonal ponding. This area has the potential to support fairy shrimp and vernal pool indicator plants.

GLENN LUKOS ASSOCIATES

EXHIBIT 5

SAN JACINTO VALLEY MASTER DRAINAGE PLAN

Site Photographs

GLENN LUKOS ASSOCIATES

EXHIBIT 6

Legend

- MSHCP Criteria Cells
- MDP Alignments
- Potential MSHCP Riparian Vegetation

RAMONA EXPY

SANDERSON AVE

LYON AVE

STATE ST

SEVENTH ST

WARREN RD

0 1,500 3,000 6,000 Feet

N

SAN JACINTO VALLEY MASTER DRAINAGE PLAN

Potential MSHCP Riparian Vegetation

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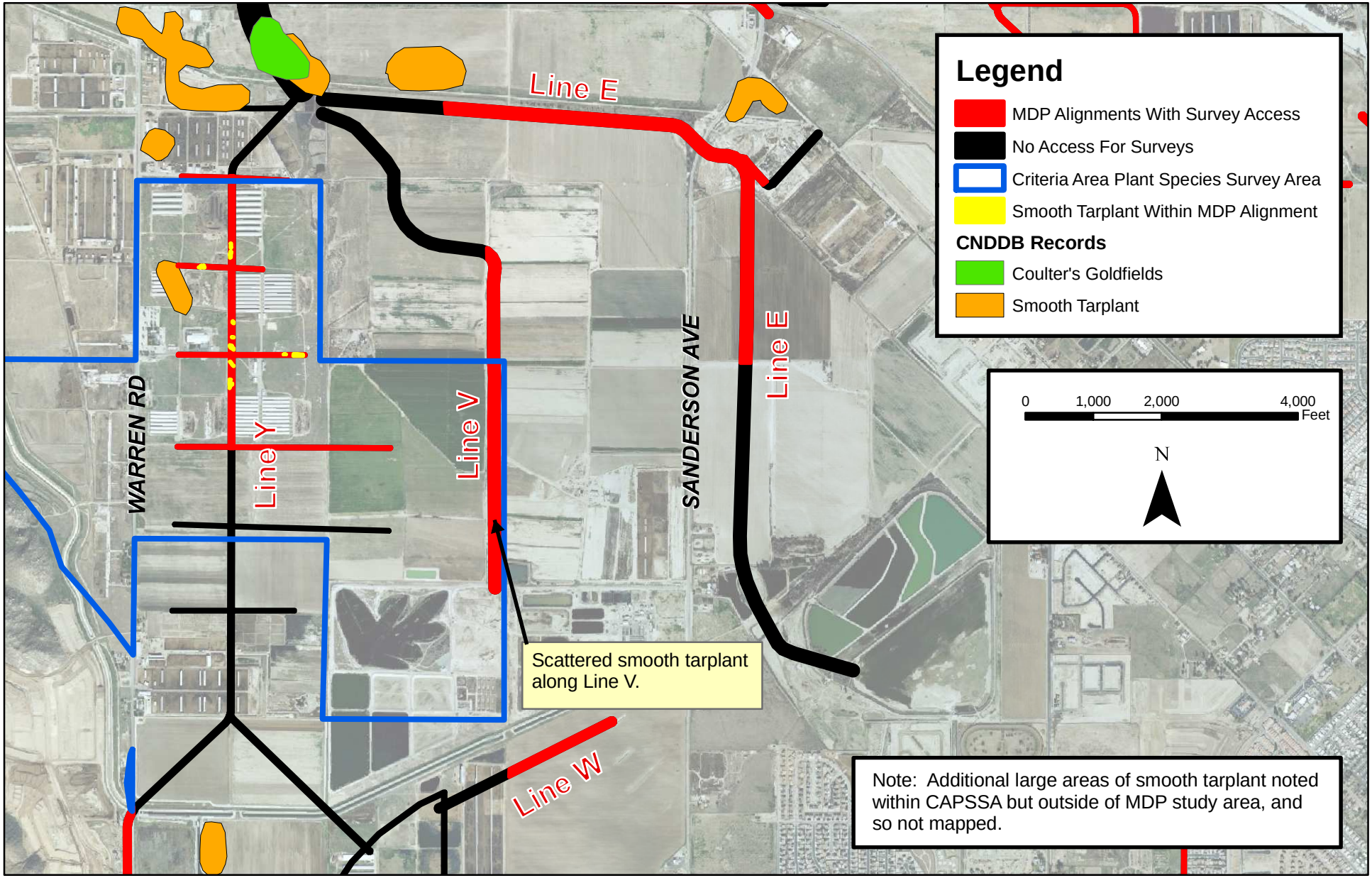

SAN JACINTO VALLEY MASTER DRAINAGE PLAN

Smooth Tarplant Locations

GLENN LUKOS ASSOCIATES

EXHIBIT 7

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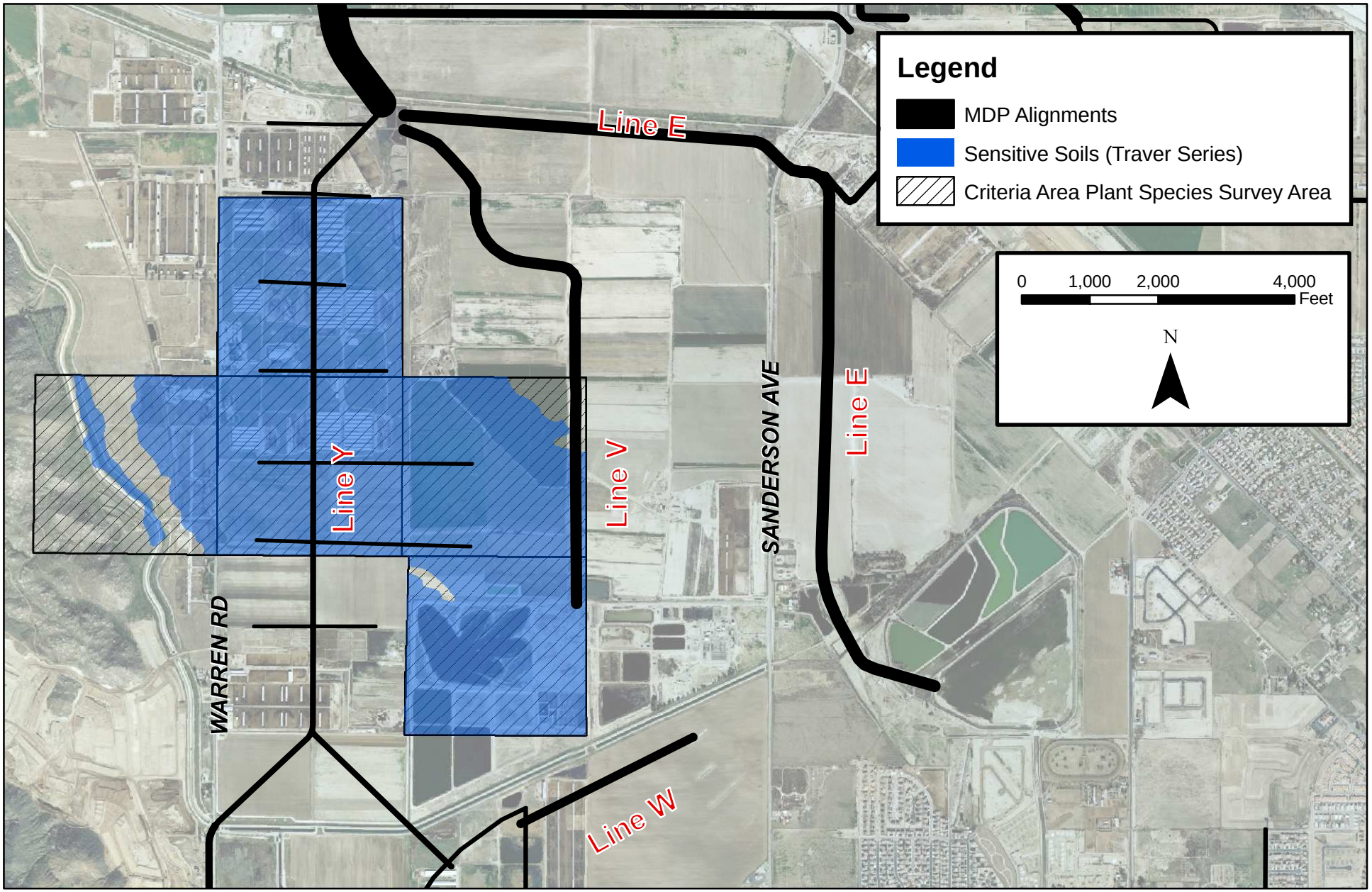

SAN JACINTO VALLEY MASTER DRAINAGE PLAN

Sensitive Soils Within CAPSSA

GLENN LUKOS ASSOCIATES

EXHIBIT 8

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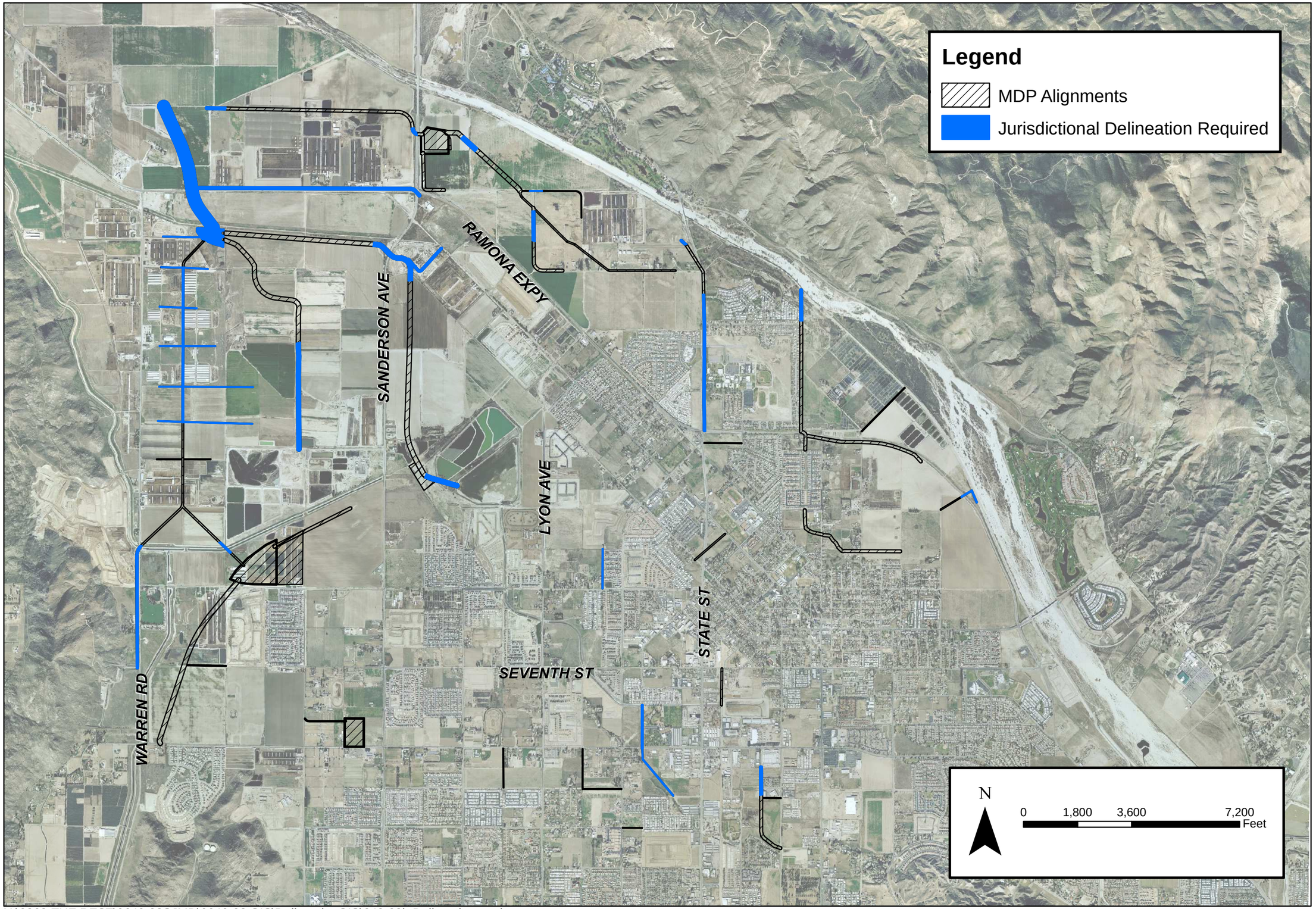

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GLENN LUKOS ASSOCIATES

EXHIBIT 9

SAN JACINTO VALLEY MASTER DRAINAGE PLAN

Areas Requiring Jurisdictional Delineation

APPENDIX A

San Jacinto Master Drainage Plan Project Description

I. PROJECT INFORMATION

Overview

The City of San Jacinto (the "Applicant") proposes to revise and consolidate two Master Drainage Plans (MDP) located in parts of San Jacinto, Hemet, and unincorporated Riverside County, California (See Figure 1, Vicinity Map). The MDP for the San Jacinto Area and the MDP for the Northwest Hemet Area will be consolidated into a single San Jacinto Valley MDP. The consolidated San Jacinto MDP, including alignments and proposed revisions, are represented in Figure 2.

Master Drainage Plans address the current and future drainage needs of a given community. The boundary of the plan usually follows regional watershed limits. The proposed facilities may include channels, storm drains, levees, basins, dams, wetlands or any other conveyance capable of economically relieving flooding problems within the plan area. The plan includes an estimate of facility capacity, sizes and costs.

Master Drainage Plans are prepared for a variety of purposes: first, the plans provide a guide for the orderly development of the County, second, they provide an estimate of costs to resolve flooding issues within a community. These plans are used by the District's Management, Zone Commissioners and Board of Supervisors to determine Capital Project expenditures for each budget year. Finally, the plans can be used to establish Area Drainage Plan fees for a given community, which prevent existing taxpayers from having to shoulder the burden of land development costs.

Purpose and Need

The existing MDPs were designed in 1982 (Revised 1990) and 1985 and do not address current flooding needs for the communities of San Jacinto, Hemet, and nearby areas of unincorporated Riverside County. The primary purpose of the Project is to revise and consolidate the existing San Jacinto and Northwest Hemet MDPs into a single updated San Jacinto Valley MDP.

Figure 1 – Vicinity map

Figure 2 – Proposed Project

A. Project Description:

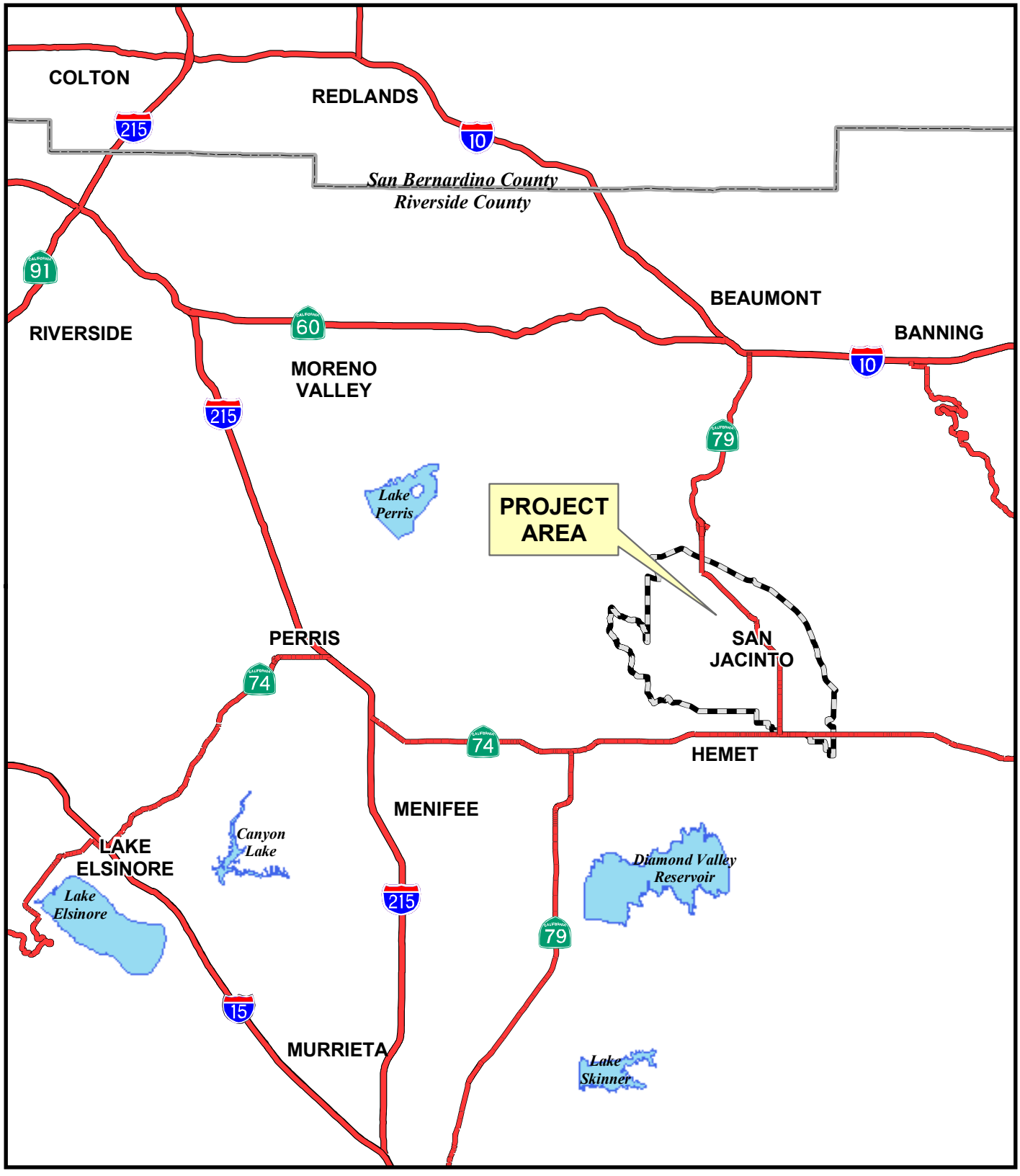
The project consists of revising two Master Drainage Plans, the MDP for the San Jacinto area and the MDP for the Northwest Hemet area, and consolidation into a single updated San Jacinto Valley MDP. The MDPs for the Hemet and San Jacinto Valley areas, including alignments and proposed revisions, are represented in Figure 2. This Initial Study will address the consolidated San Jacinto Valley MDP in its entirety.

Proposed drainage facilities within the project area were originally described in the San Jacinto MDP dated January 1982 (Revised July 1990) and the Northwest Hemet Area MDP dated January 1985. The proposed revisions and consolidation is the result of the

re-evaluation and expansion of the original plans. After adoption, the newly created San Jacinto Valley MDP will supersede the 1990 and 1985 MDPs.

The proposed Jacinto Valley MDP is a planning document prepared by the City of San Jacinto with coordination from the Riverside County Flood Control and Water Conservation District that describes the type, size and alignment of the major existing and proposed flood control facilities located within the San Jacinto area. The MDP revision and consolidation depicts a storm water drainage system that, when constructed in conjunction with ultimate street improvements, will contain the 100-year flood discharge and alleviate the primary sources of flooding within the MDP area. The proposed Jacinto Valley MDP more particularly describes the proposed construction of backbone drainage facilities that will be needed to provide adequate flood protection within the San Jacinto, Hemet, and local unincorporated areas of Riverside County. The proposed Jacinto Valley MDP will serve as a guide to the long term planning for the construction of the proposed drainage facilities. It will also act as a guide for the location and size of drainage facilities that need to be constructed by the City of San Jacinto and/or others as the area develops, or facilities that need to be constructed to resolve existing flooding problems within developed areas. It is expected that many of the drainage facilities will be constructed in conjunction with other development projects. Following adoption of the proposed Jacinto Valley MDP, it is expected that proposed facility alignments will be reserved for the future construction of the facilities. The City of San Jacinto will approve the MDP as one step toward establishing a financing mechanism to provide funding for the proposed drainage facilities as the area develops. Construction of the proposed MDP facilities will occur in conjunction with future development projects.

The revisions to the San Jacinto MDP and the Northwest Hemet Area MDP includes the addition of new facilities within the northern area of the new San Jacinto Valley MDP: Lines 1, 2, 3, 4, 5 and 6, Lateral 4-A, and North Basin; the addition of new facilities within the western area: Line D Basin, Casa Loma Basin, Line X, Y, Y-1, W, and Z, Laterals D-1, X-1, and Y-1 to Y-13; and the addition of new facilities within the city area: Line D-2 Extension, N Line E-2A, N Line E-3A, Line G along Ramona Expressway, Line G along De Anza Drive, three laterals along Line E (Kirby Lateral, Lyon Avenue Lateral, and 7th Street Lateral) and Milwaukee SD. Changes to the existing Northwest Hemet Area MDP include the separation of the existing Line D into two parts: Line D south of Cottonwood Avenue between Cottonwood Avenue between Casa Loma Basin and Line D Basin and Line V north of the Casa Loma Canal. Changes to the existing San Jacinto MDP include the realignment of Line G-1, moving of Line G 300 feet downstream, removal of Line G between the San Jacinto Reservoir and De Anza, combination of Line G-3 and Line G-3a into Line G-3 with an updated alignment which replaces 3,100 feet of the original Line G, and the outlet of Line E into the San Jacinto Reservoir. All other previously proposed alignments would remain unchanged. Proposed drainage facilities consist of reinforced concrete boxes, reinforced concrete pipes, concrete channel concrete, open earth channels, and earthen basins.



Not to Scale

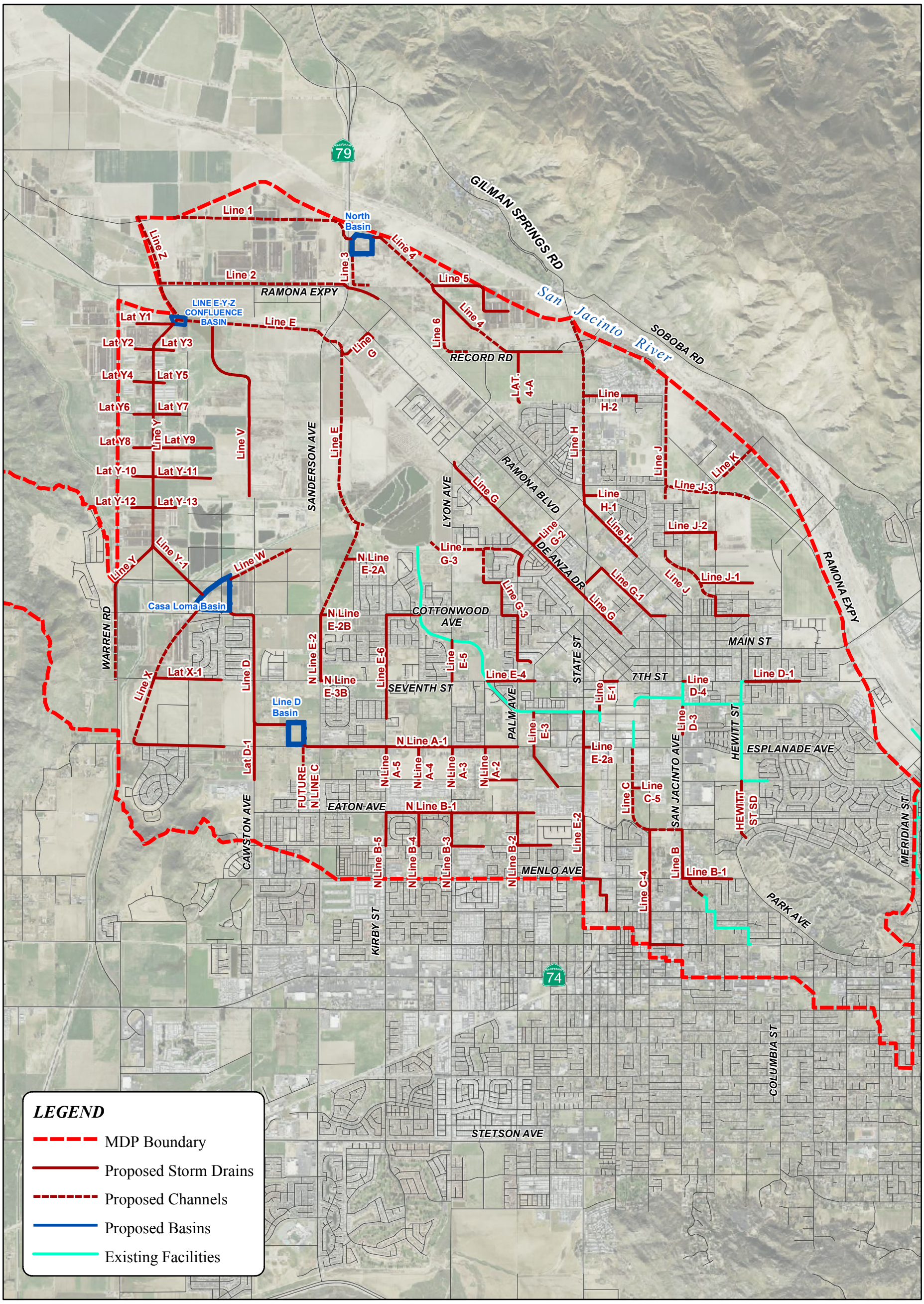
N
W E
S

Figure 1

Vicinity Map

ALBERT A. WEBB ASSOCIATES

G:\\2005\05-0519E\Gis\vicinity.mxd



Source: Riverside County GIS, 2008

Figure 2

Proposed Project

ALBERT A. WEBB ASSOCIATES

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HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY REPORT

SAN JACINTO MASTER DRAINAGE PLAN

In and near the City of San Jacinto
Riverside County, California

For Submittal to:

Community Development Department
City of San Jacinto
595 S. San Jacinto Avenue, Building A
San Jacinto, CA 92583

Prepared for:

Felicia Griego
Albert A. Webb Associates
3788 McCray Street
Riverside, CA 92506

Prepared by:

CRM TECH
1016 East Cooley Drive, Suite A/B
Colton, CA 92324

Michael Hogan, Principal Investigator
Bai "Tom" Tang, Principal Investigator

October 8, 2008
CRM TECH Contract No. 2225A

National Archaeological Database Information Sheet

Author(s): Josh Smallwood, Archaeologist/Report Writer
Daniel Ballester, Archaeologist/Field Director
Laura H. Shaker, Archaeologist/Native American Liaison

Consulting Firm: CRM TECH
1016 East Cooley Drive, Suite A/B
Colton, CA 92324
(909) 824-6400

Date: October 8, 2008

Title: Historical/Archaeological Resources Survey Report: San Jacinto Master Drainage Plan, in and near the City of San Jacinto, Riverside County, California

For Submittal to: Community Development Department
City of San Jacinto
595 S. San Jacinto Avenue, Building A
San Jacinto, CA 92583
(951) 487-7330

Prepared for: Felicia Griego
Albert A. Webb Associates
3788 McCray Street
Riverside, CA 92506
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USGS Quadrangles: Lakeview and San Jacinto, Calif., 7.5' quadrangles; Sections 25 and 36 of T4S R2W, portions of the San Jacinto Viejo land grant within T4-5S R1W, and a portion of the San Jacinto Nuevo y Potrero land grant in T4S R1W, San Bernardino Base Meridian

Project Size: Approximately 30 linear miles and 100 acres

Keywords: City of San Jacinto, Riverside County; historical/archaeological resources survey; Site 33-015743 (San Jacinto Valley Railway, 1888); no effect on "historical resources"; archaeological monitoring recommended due to potential for subsurface cultural deposits

MANAGEMENT SUMMARY

Between March and October, 2008, CRM TECH performed a cultural resources study on the area of potential effects (APE) for the proposed San Jacinto Master Drainage Plan Project in and near the City of San Jacinto, Riverside County, California. The APE for the proposed new drainage system consists of numerous segmented alignments for proposed drainage channels, pipelines, and culverts, as well as undeveloped or partially developed parcels for the construction of drainage basins. The study area for the drainage lines measures between 30 and 400 feet wide, and the overall length of the alignments totals approximately 30 miles. The six drainage basins will be constructed on parcels measuring between 5 and 40 acres each. The maximum vertical extent of ground disturbances within the APE is expected to be around 25 feet deep for the proposed drainage basins and 12 feet deep for the pipelines and channels.

The proposed drainage lines and basins lie mostly in the San Jacinto city limits, although a few scattered segments are located on unincorporated land to the north and in the City of Hemet to the south. The entire APE is located in Sections 25 and 36 of T4S R2W, portions of the San Jacinto Viejo land grant within T4-5S R1W, and a portion of the San Jacinto Nuevo y Potrero land grant in T4S R1W, San Bernardino Base Meridian. The study is part of the environmental review process for the proposed project. The City of San Jacinto, as Lead Agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA).

The purpose of the study is to provide the City with the necessary information and analysis to determine whether future construction activities in the APE would cause substantial adverse changes to any historical/archaeological resources, as mandated by CEQA. 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.

As a result of these research procedures, a portion of the APE south of Seventh Street was found to be located within the boundaries of Site 33-015743, a segment of the former San Jacinto Valley Railway that dates to 1888. The site was previously recorded and evaluated for historical significance, and it appears to qualify as a "historical resource" under CEQA. According to current plans, the proposed project at this location will be limited to trenching for the installation of underground pipe within the railway right-of-way, but will not impact the rail line itself or any associated railway structures. Therefore, the project as currently planned will not adversely affect Site 33-015743. No other potential "historical resources" were encountered within or adjacent to the APE during this study. Based on these findings, CRM TECH concludes that the proposed project will not cause "a substantial adverse change in the significance of a historical resource" (Calif. PRC §21084.1). Accordingly, CRM TECH presents the following recommendations to the City of San Jacinto:

- No historical resources have been identified within the surveyed portions of the APE, and thus future development in those portions of the APE will not cause substantial adverse changes to any known historical resources;

- Areas that could not be surveyed adequately during this study should be re-surveyed once a specific project is proposed and permission has been obtained to access the property;
- If buried cultural materials are discovered during any earth-moving operations associated with the project, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

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INTRODUCTION

Between March and October, 2008, CRM TECH performed a cultural resources study on the area of potential effects (APE) for the proposed San Jacinto Master Drainage Plan Project in and near the City of San Jacinto, Riverside County, California (Fig. 1). The APE for the proposed new drainage system consists of numerous segmented alignments for proposed drainage channels, pipelines, and culverts, as well as undeveloped or partially developed parcels for the construction of drainage basins.

The proposed drainage lines and basins lie mostly in the San Jacinto city limits, although a few scattered segments are located on unincorporated land to the north and in the City of Hemet to the south. The entire APE is located in Sections 25 and 36 of T4S R2W, portions of the San Jacinto Viejo land grant within T4-5S R1W, and a portion of the San Jacinto Nuevo y Potrero land grant in T4S R1W, San Bernardino Base Meridian (Fig. 2). The study is part of the environmental review process for the proposed project. The City of San Jacinto, as Lead Agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA).

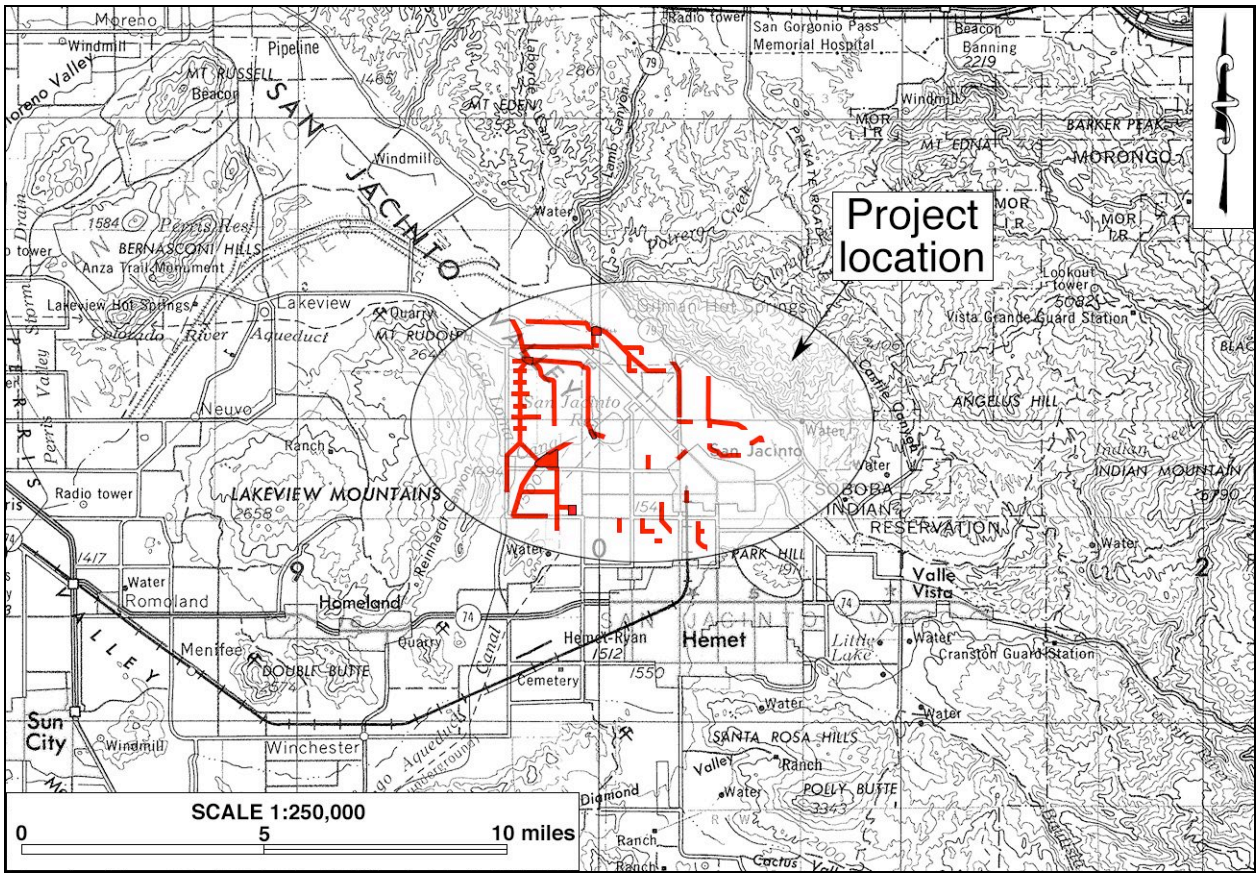


Figure 1. Project vicinity. (Based on USGS Santa Ana, Calif., 1:250,000 quadrangle [USGS 1979a])

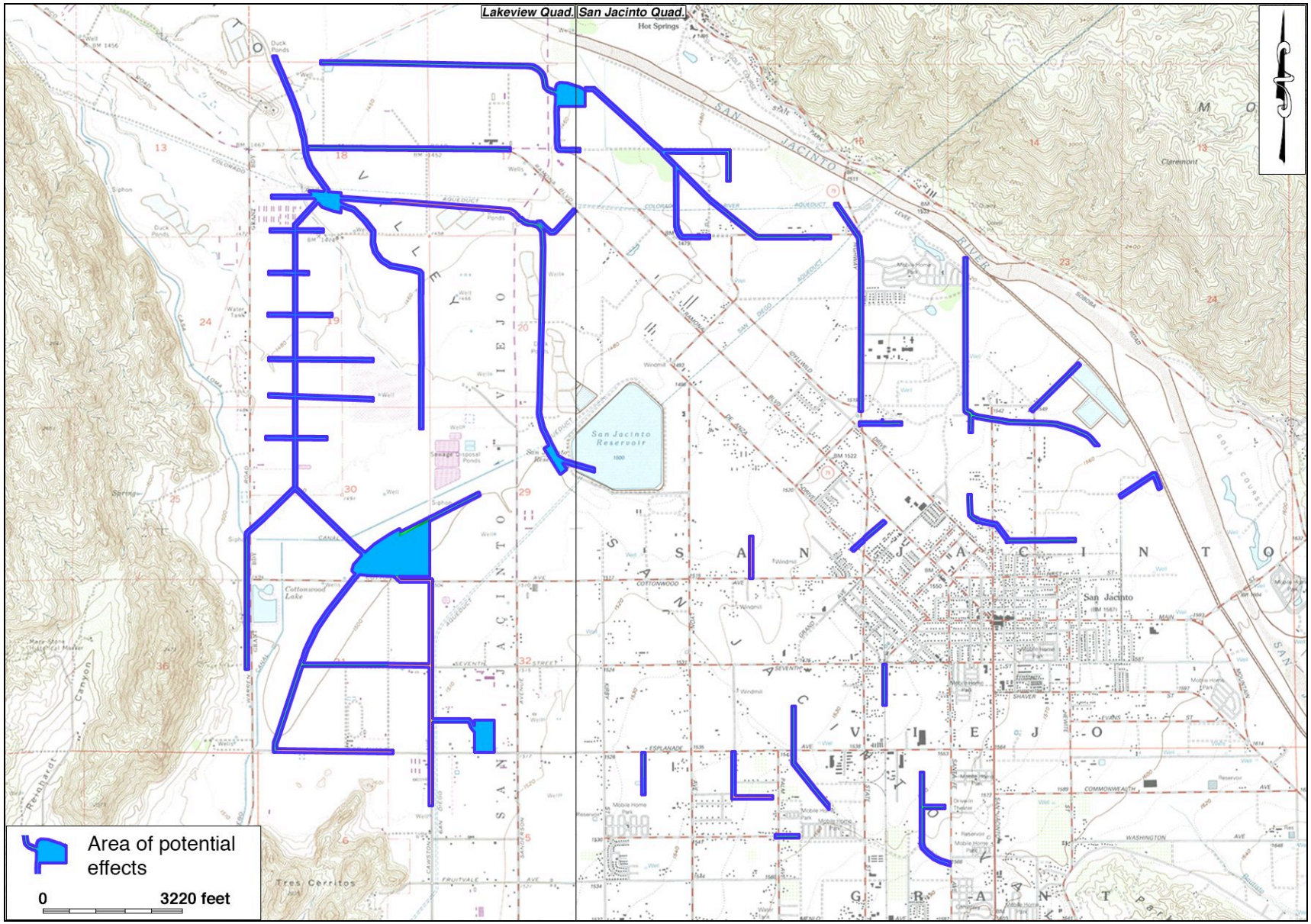


Figure 2. Area of potential effects. (Based on USGS Lakeview and San Jacinto, Calif., 1:24,000 quadrangles [USGS 1979b; 1996])

The purpose of the study is to provide the City with the necessary information and analysis to determine whether future construction activities in the APE would cause substantial adverse changes to any historical/archaeological resources, as mandated by CEQA. 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 following report is a complete account of the methods and results of the various avenues of research, and the final conclusion of the study.

PROJECT DESCRIPTION

As discussed above, the APE for the proposed new drainage system consists of numerous segmented alignments for proposed earthen and concrete-lined drainage channels, reinforced concrete pipelines and box culverts, as well as the future sites of six drainage basins. The APE for the drainage lines measures between 30 and 400 feet wide, and the overall length of the alignments totals approximately 30 miles. Where the drainage line follows existing paved or gravel roads, construction will occur within the existing road right-of-way, which generally measures between 30 and 200 feet wide. In these areas, the project centerline may be in the roadway or along the outer edge of the roadway, often following existing earthen drainage ditches.

Where the project route crosses undeveloped land and agricultural fields, the width of the APE ranges from a minimum of 30 feet to a maximum of 400 feet, allowing enough workspace for the equipment to construct drainage channels or trench for pipelines. A maximum width of 350 feet will be necessary for earthen channels, including access roads, while concrete-lined channels will be 100 feet wide. The six proposed drainage basins will be constructed on parcels measuring between 5 and 40 acres each, scattered at different locations along the project route. The maximum vertical extent of ground disturbances within the APE is expected to be around 25 feet deep for the proposed drainage basins and 12 feet deep for the pipelines and channels.

SETTING

CURRENT NATURAL SETTING

The APE is situated in the southeastern portion of the San Jacinto Valley, a southeast-northwest trending valley situated below the western slopes of the San Jacinto Mountains. More specifically, it lies to the southwest of the San Jacinto River, to the east of the Lakeview Mountains, and to the north of Menlo Avenue. The proposed drainage lines traverse across agricultural land, but also follow existing roadways and cross vacant or partially developed parcels through residential, commercial, and light industrial areas (Fig. 3). The drainage basins are located on undeveloped or partially developed parcels of land of irregular shapes and various sizes. Elevations along the APE range between 1,450

Figure 3. Typical landscapes along the APE. *Clockwise from upper left*: gravel-paved segment of Cawston Avenue; existing earthen drainage ditch along the east side of State Street; vacant field; paved road near Mt. San Jacinto Community College. (Photos taken July 15-18, 2008)

feet and 1,570 feet above mean sea level. The climate and environment of the APE and its surrounding region are typical of southern California's inland valleys, with temperatures in the region reaching over 100 degrees in summer, and dipping to near freezing in winter. Vegetation in the non-agricultural and undeveloped areas consists mainly of non-native grasses, weeds, and brush, and the soils are a sandy loam typical of the San Jacinto Valley.

CULTURAL SETTING

Prehistoric Context

It is widely acknowledged that human occupation in what is now the State of California began 8,000-12,000 years ago. In order to understand Native American cultures before European contact, archaeologists have devised chronological frameworks that endeavor to correlate the observable technological and cultural changes in the archaeological record to distinct periods. Unfortunately, none of these chronological frameworks has been widely accepted, and none has been developed specifically for the so-called Inland Empire region of southern California, the nearest ones being for the Colorado Desert and Peninsular Ranges area (Warren 1984) and for the Mojave Desert (Warren and Crabtree 1986).

The development of an overall chronological framework for the region is hindered by the lack of distinct stratigraphic layers of cultural sequences that could be dated by absolute dating methods. Since results from archaeological investigations in this region have yet to be synthesized into an overall chronological framework, most archaeologists tend to follow a chronology adapted from a scheme developed by William J. Wallace in 1955 and modified by others (Wallace 1955; 1978; Warren 1968; Chartkoff and Chartkoff 1984; Moratto 1984). Although the beginning and ending dates of the different horizons or periods may vary, the general framework of prehistory in this region under this chronology consists of the following four periods:

- Early Hunting Stage (ca. 10000-6000 B.C.), which was characterized by human reliance on big game animals, as evidenced by large, archaic-style projectile points and the relative lack of plant-processing artifacts;
- Millingstone Horizon (ca. 6000 B.C.-A.D. 1000), when plant foods and small game animals came to the forefront of subsistence strategies, and from which a large number of millingstones, especially heavily used, deep-basin metates, were left;
- Late Prehistoric Period (ca. A.D. 1000-1500), during which a more complex social organization, a more diversified subsistence base—as evidenced by smaller projectile points, expedient milling stones and, later, pottery—and regional cultures and tribal territories began to develop;
- Protohistoric Period (ca. A.D. 1500-1700s), which ushered in long-distance contact with Europeans and led to the historic period.

Ethnohistoric Context

The APE lies in an area where the traditional territories of two Native American groups, the Luiseño and the Cahuilla, overlapped. Together, the homelands of these two Takic-speaking peoples extend from the Coachella Valley in the northeast to present-day Oceanside in the southwest, encompassing most of the western and central portions of what is now Riverside County. In modern anthropological literature, the leading sources on Luiseño and Cahuilla culture and history include Kroeber (1925), Strong (1929), Bean (1978), and Bean and Shipek (1978).

Despite their differences in the linguistic affiliation and environmental setting, Native Americans who lived in the vicinity of the APE exhibited similar social organization and resource procurement strategies. The traditional societies of both the Luiseño and the Cahuilla were structured around villages based on clan or lineage groups. Archaeologically, the village sites are usually marked by midden deposits and habitation debris, and sometimes include bedrock boulders with evidence of food-processing and/or ritual activities on them. The various clans, and the two groups in general, interacted with one another through trade, intermarriage, ceremonies, and occasionally tribal warfare. During the seasonal rounds to exploit plant resources, small groups often ranged some distances from the villages in search of specific plants and animals. Their gathering strategies often left behind signs of special use sites, such as boulder slicks and metates at certain resource locations.

Since at least the early 1800s, an area to the east of the APE has been the site of the Luiseño village of Soboba, the name of which has also been recorded by Spanish missionaries, early U.S. surveyors, and modern ethnographers as Saboba, Savabo, Sovovo, and Sevobe, among

a host of other versions (Gunther 1984:502-503). During the historic period, the village was home to five Luiseño clans, *Litcic*, *Pokhat*, *Amurax*, *Tcipmal*, and *Tulotcuwat*, who were collectively known as *Sovovoyam* (Kroeber 1925:146; Strong 1929:276). Situated on the northeastern frontier of Luiseño territory, the *Sovovoyam* maintained ceremonial exchange with neighboring Mountain Cahuilla, Gabrielino, and Serrano groups (Strong 1929:13, 98). Considering that it was one of only 19 Luiseño villages remaining in 1856 and one of only 10 by 1873 (Bean and Shipek 1978:558), Soboba was clearly an important settlement for the Luiseño people.

Historic Context

In California, the so-called "historic period" began in 1769, when an expedition sent by the Spanish authorities in Mexico founded Mission San Diego, the first European outpost in Alta California. For several decades after that, Spanish colonization activities were largely confined to the coastal regions, and left little impact on the arid hinterland of the territory. Although the first explorers, including Pedro Fages and Juan Bautista de Anza, traveled through the San Jacinto Plains as early as 1772-1774, no Europeans were known to have settled in the vicinity until the beginning of the 19th century.

Throughout much of the Spanish and Mexican Periods in California history, the San Jacinto Valley was nominally under the control of Mission San Luis Rey, which was established near present-day Oceanside in 1798. By 1821, it had become a part of the loosely defined Rancho San Jacinto, a vast cattle ranch for that mission (Gunther 1984:467). The rancho was headquartered on a small hill near the Lakeview Mountains, where an adobe house for the *mayordomo*, known in later years as Casa Loma, was built sometime before 1827 (*ibid.*:102).

In the 1840s, after secularization of the mission system, three large land grants were created on the former mission rancho of San Jacinto. Among these were Rancho San Jacinto Viejo, granted in 1842 to José Antonio Estudillo, then the *mayordomo* of Mission San Luis Rey, and Rancho San Jacinto Nuevo y Potrero, granted in 1846 to Miguel de Pendrorena of San Diego. As elsewhere in southern California, cattle raising was the most prevalent economic activity on these and other nearby land grants, until the influx of American settlers eventually brought an end to this much-romanticized lifestyle in the second half of the 19th century.

After the American annexation of Alta California in 1848, the first Euroamerican settlers arrived in the San Jacinto Valley in the late 1860s, and settled mostly around the old town of San Jacinto, the earliest non-Indian community in the area. During the great southern California land boom of the 1880s, the new town of San Jacinto was founded in 1883, and soon overtook the old town as the nucleus of the community. In 1888, San Jacinto became the terminus of the newly completed San Jacinto Valley Railway, a Santa Fe subsidiary, and the City of San Jacinto was incorporated in the same year.

To the south of San Jacinto, the town of Hemet was created by the Hemet Land Company in 1893. A relative late-comer among the communities in the San Jacinto Valley, and founded at the onset of a severe drought that hampered development throughout southern California, Hemet prospered nevertheless, thanks to the reliable water supply provided by the Hemet Reservoir that the company constructed in the San Jacinto Mountains. In 1910, Hemet became the second incorporated city in the valley.

Through much of the 20th century, both Hemet and San Jacinto remained small rural towns serving the needs of one of Riverside County's most important agricultural regions. During the recent decades, however, with residential and commercial development increasingly becoming the driving force in regional growth, the forces of urbanization has begun to significantly transform the landscape of the two cities.

RESEARCH METHODS

RECORDS SEARCH

On March 20, 2008, CRM TECH archaeologist Nina Gallardo (see App. 1 for qualifications) completed the records search at the Eastern Information Center (EIC), located at the University of California, Riverside. During the records search, Gallardo examined maps and records on file at the EIC for previously identified cultural resources within or near the APE, and existing cultural resources reports pertaining to the project vicinity. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or Riverside County Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

NATIVE AMERICAN CONSULTATION

On March 21, 2008, CRM TECH submitted a written request to the State of California's Native American Heritage Commission for a records search in the commission's sacred lands file. In the meantime, CRM TECH also contacted the Soboba Band of Luiseño Indians, who had previously provided comments on the project to the City of San Jacinto in 2007, to solicit additional comments, if any. Following the Native American Heritage Commission's recommendations, CRM TECH contacted 15 Native American representatives in the region in writing on March 25 to seek local Native American input regarding any potential cultural resources concerns over the proposed project. Members of the Soboba, Cahuilla, and Temecula (Pechanga) Bands were also notified of the upcoming fieldwork in e-mails sent on March 26, 2008. The correspondences with the Native American representatives are attached to this report in Appendix 2.

FIELD SURVEY

On July 15-18, 2008, CRM TECH archaeologist/field director Daniel Ballester (see App. 1 for qualifications) and archaeologist Nina Gallardo conducted the systematic field survey of the APE. Nearly half of the APE, including many of the proposed drainage lines and all six proposed drainage basin locations, could not be surveyed due to restricted access (Fig. 4). The balance of the APE was surveyed at either an intensive or a reconnaissance level to adequately cover the centerline and width of proposed construction along each drainage line segment. Those alignments that follow existing roads, due to the highly disturbed nature of the rights-of-way, were surveyed at a reconnaissance level by driving along the route and examining the APE for buildings, structures, objects, or features that appear to be more than 45 years old.

Undeveloped fields and other portions of the APE with permissible access were surveyed at an intensive level by walking parallel transects along the project route at 10- to 15-meter (approx. 30- to 50-foot) intervals, covering a corridor that was wide enough to encompass the full width of the APE. In this manner, the portions of the APE that CRM TECH had access to were systematically and carefully examined for any evidence of human activities dating to the prehistoric or historic periods (i.e., 45 years ago or older). Visibility on the native ground surface was excellent (90-100%) in most of the undeveloped areas due to the sparse vegetation, but was poor (0-40%) in developed areas due to the presence of landscaping and pavement.

HISTORICAL BACKGROUND RESEARCH

CRM TECH historian Bai "Tom" Tang and historic archaeologist Josh Smallwood (see App. 1 for qualifications) conducted the historical background research on the basis of published literature in local history and historic maps of the San Jacinto area. Among maps consulted for this study were the U.S. General Land Office's (GLO) land survey plat maps dated 1865-1880, and the U.S. Geological Survey's (USGS) topographic maps dated 1901, 1942-1943 and 1953. These maps are collected at the Science Library of the University of California, Riverside, and the California Desert District of the U.S. Bureau of Land Management, located in Moreno Valley.

RESULTS AND FINDINGS

RECORDS SEARCH

According to records on file at the EIC, only a few portions of the APE may have been covered by previously completed cultural resources studies, leaving much of the APE unsurveyed prior to this study (Fig. 5; Table 1). Only one historic-period resource, Site 33-015743, has been identified within the APE boundaries as a result of past studies that have occurred in the area (Easter and Beedle 2005:4; Table 2). Site 33-015743 is the former San Jacinto Valley Railway, constructed in 1888, that connected the California Southern Railway depot in Perris with the agricultural towns of the San Jacinto Valley, namely Winchester, Hemet, and San Jacinto where it terminated. The line established rapid transport of agricultural products, and eventually passenger service, to other areas of southern California and played an important role in the agricultural development of the San Jacinto Valley. The APE follows the railway right-of-way for approximately 1,000 feet near the rail line's terminus south of Seventh Street.

Outside the project boundaries but within a one-mile radius, EIC records show a total of 106 previous cultural resources studies on various tracts of land and linear features (Fig. 5; Table 1). These studies resulted in the identification of 210 additional historical/archaeological sites and isolates—i.e., localities with fewer than three artifacts—within the scope of the records search, as listed in Table 2. The great majority of these cultural resources were buildings and built-environment features dating to the late 19th century or the early and mid-20th century, attesting to the relatively long history of settlement and land development activities in the San Jacinto area. Some historic-period refuse deposits have also been encountered during previous studies.

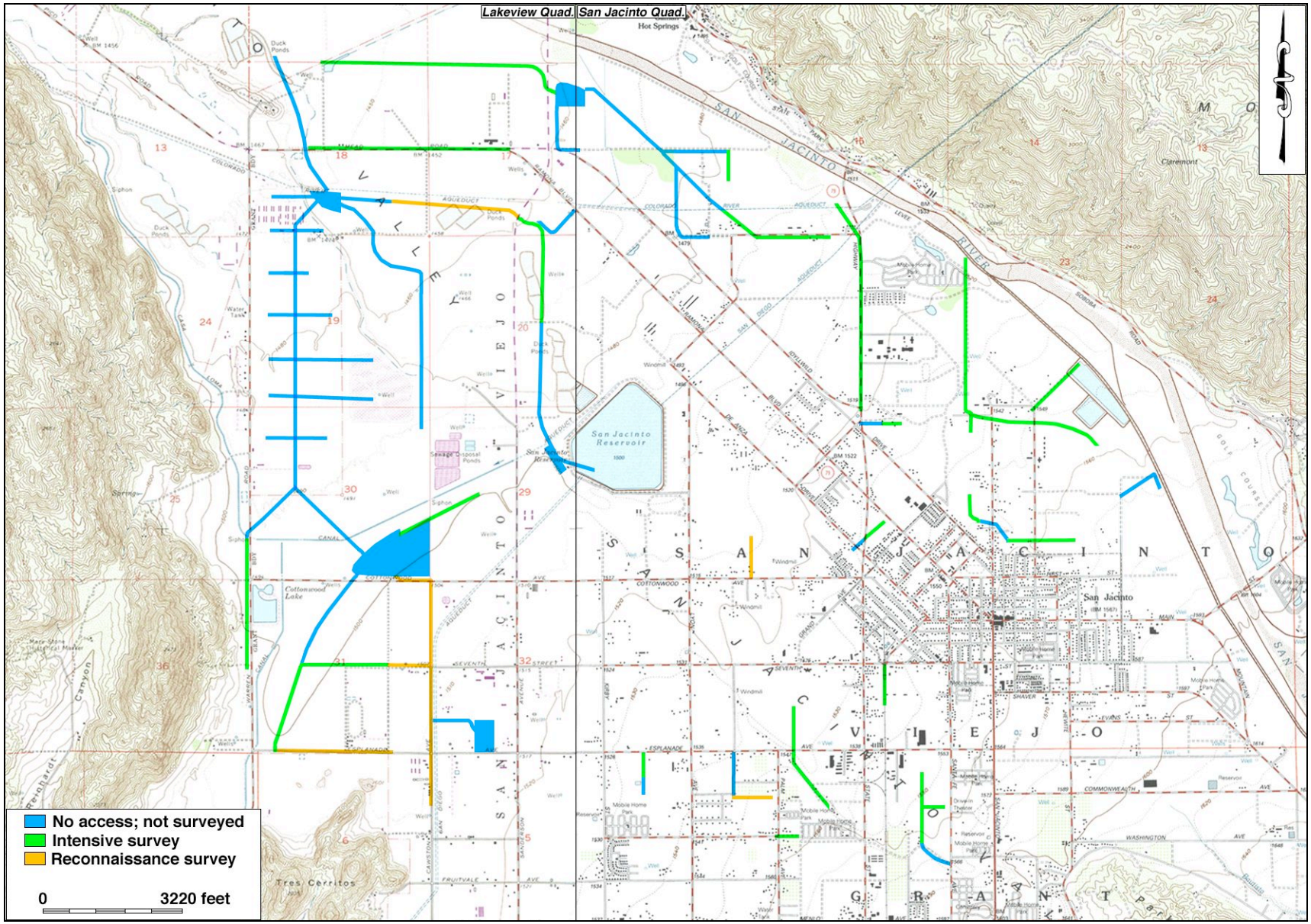


Figure 4. Survey coverage of the APE.

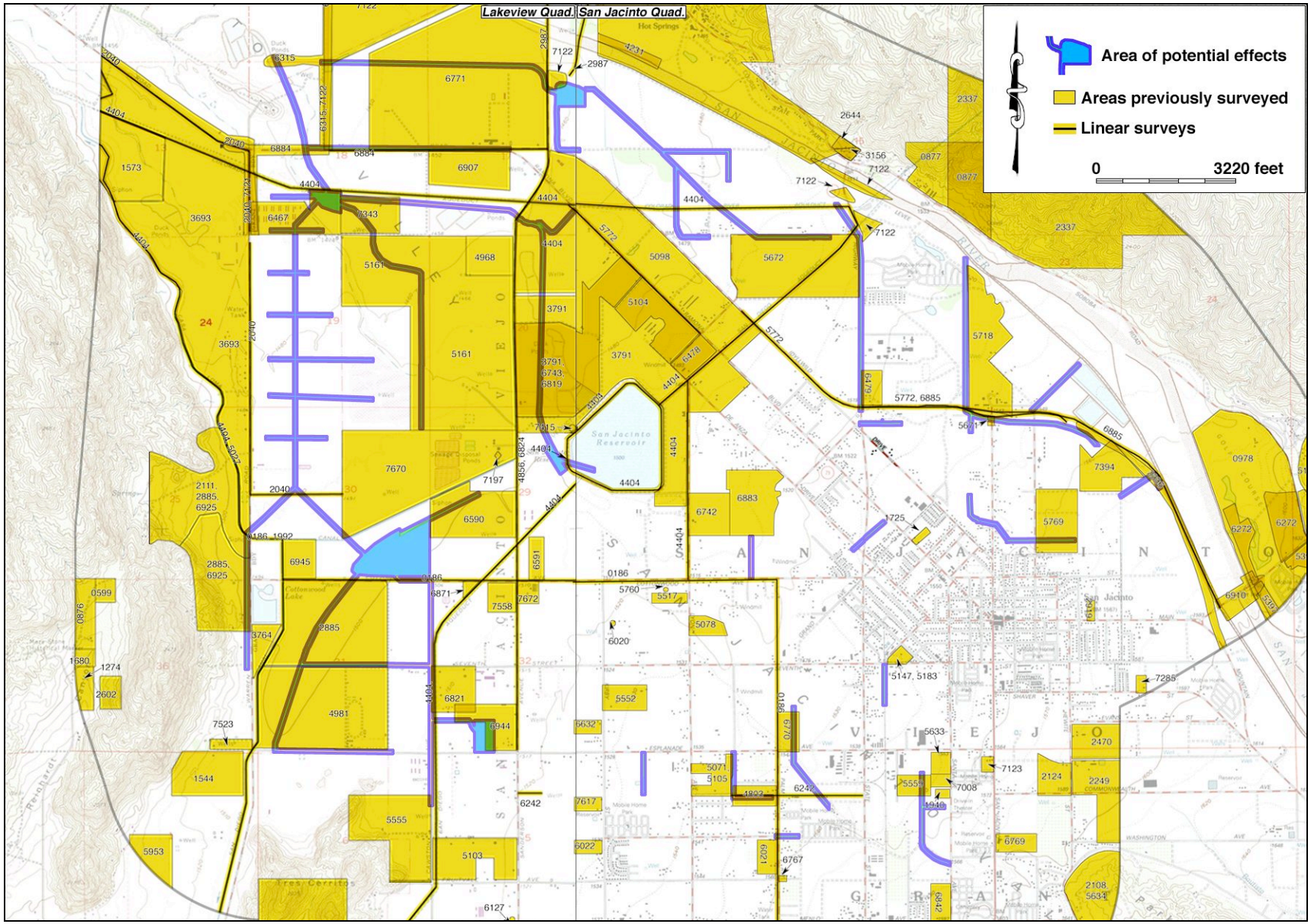


Figure 5. Previous cultural resources studies in the vicinity of the APE, listed by EIC file number. Locations of historical/archaeological sites are not shown as a protective measure.

Numerous prehistoric—i.e., Native American—archaeological sites have been found in the area, consisting of various amounts of habitation debris, such as ceramic sherds, chipped-stone and groundstone tools and debitage, midden soils, fire-affected rock, and sometimes human remains. Bedrock milling features and, less frequently, petroglyphs, have been found in the San Jacinto Valley in areas where bedrock outcrops are present. Their presence attests to the widespread use of the land by Native Americans over millennia. With the exception of Site 33-015743, however, none of these previously recorded sites was located in the immediate vicinity of the APE. Therefore, Site 33-015743 is the only known site that requires further consideration during this study.

Table 1. Previous Cultural Resources Studies Involving the APE

Report No.	Year	Author/Affiliation	Report Title
00186	1975	Wells, Helen; Archaeological Research Unit, U.C. Riverside	Archaeological Impact Report: Eastern Municipal Water District, Riverside County, California: PL984 Water Systems Addition
02040	1986	Yohe, Robert M. II; Archaeological Research Unit, U.C. Riverside	An Archaeological Assessment of the Eastern Municipal Water District's Proposed Reclaimed Water Transmission Line, San Jacinto Area of Riverside County, California
02336	1985	Scientific Resource Surveys, Inc.	Report on an Archaeological and Historical Assessment of the New Alignment of a Section of the Ramona Expressway, Located in Riverside County, California
02885	1990	Arkush, Brooke; Archaeological Research Unit, U.C. Riverside	An Archaeological Assessment of Five Potential Sites for the Perris Water Treatment Plant, Located near Lakeview in Western Riverside County, California
03791	1991	Drover, Christopher	A Cultural Resources Assessment of the 800 Acre Sunrise Ranch, Lakeview and San Jacinto USGS Quads, Riverside County
04404	2000	Jones and Stokes Associates, Inc.	Final Cultural Resources Inventory Report for the Williams Communications, Inc. Fiber Optic Cable System Installation Project, Riverside to San Diego, California, Vol. I-IV
04803	2003	Nixon, Joseph M., and David M. Livingstone; White Oak Environmental Alliance, Inc.	Cultural Resource Survey: Proposed Residential Development Property, 1321 North Palm Avenue, Hemet, California (APN 441-090-051 and 441-100-021)
04981	2003	McKenna et al.	A Phase I Cultural Resources Survey of the Esplanade Specific Plan Project Area near Hemet, Riverside County, California
05071	2003	Applied Earthworks, Inc.	Historical Property Report: CA-RIV-7151H and CA-RIV-7152H Orangewood Investment Partner Tentative Tract 31280 Project, Hemet, California
05105	2003	Applied Earthworks, Inc.	Cultural Resources Survey of 25.86 Acres of Orangewood Investment Partners Tentative Tract 31280, Hemet, California
05161	2004	Moslak, Ken, and John Cook; ASM Affiliates, Inc.	Cultural Resources Study of the Proposed Villages of San Jacinto Project, San Jacinto, Riverside County, California
05559	2006	Applied Earthworks, Inc.	Phase I Cultural Resources Survey of 13.6 Acres in Hemet, Riverside County, California, APNs 439-070-020, -021, and -031

Table 1. Previous Cultural Resources Studies Involving the APE (continued)			
Report No.	**Year**	**Author/Affiliation**	**Report Title**
05671	2004	Thal, Sean; Earthtouch, Inc.	Request for SHPO Review of FCC Undertaking for Project Domenigoni/CA-7260B
05769	2005	Kyle, Carolyn; Kyle Consulting for James and Briggs Archaeological Services	Cultural Resource Survey for the Foothills Ranch Project, A 48.9 Acre Parcel Located in Riverside County, California
05772	2004	Jones and Stokes	Phase I Cultural Resources Study for the North San Jacinto Sewer Project, City of San Jacinto, Riverside County, California
06242	2004	Tang, Bai, Michael Hogan, and Mariam Dahdul; CRM TECH	Historical/Archaeological Resources Survey Report: Hemet/San Jacinto Water Treatment Plant Pipeline, in the Cities of Hemet and San Jacinto, Riverside County, California
06315	2004	Tang, Bai, Michael Hogan, Deirdre Encarnacion, and Josh Smallwood; CRM TECH	Identification and Evaluation of Historic Properties: Eastern Municipal Water District Reclaimed Water Lines, near the City of San Jacinto, Riverside County, California
06467	2005	Tang, Bai, Michael Hogan, Josh Smallwood, Daniel Ballester, and Terri Jacquemain; CRM TECH	Historical/Archaeological Resources Survey Report: Tentative Tract Map 33579, City of San Jacinto, Riverside County, California
06590	2006	Tang, Bai, Michael Hogan, and Thomas J. Melzer; CRM TECH	Historical/Archaeological Resources Survey Report: Tentative Tract Map 33141, City of San Jacinto, Riverside County, California
06743	2006	Austerman, Virginia; LSA Associates, Inc.	Cultural Resources Assessment: Valle Reseda Project, City of San Jacinto, Riverside County, California
06771	2006	Robbins-Wade, Mary; Affinis	Cultural Resources Inventory: San Jacinto Ranch, San Jacinto, Riverside County, California
06819	2006	McKenna, Jeanette A.; McKenna et al.	A Phase I Cultural Resources Survey of the Proposed Valle Reseda, L.P. Project Area, Located in the San Jacinto Area of Riverside County, California
06824	2007	Austerman, Virginia; LSA Associates, Inc.	Cultural Resources Assessment: Sanderson Avenue Widening Project, City of San Jacinto, Riverside County, California
06882	2005	Hunt, Kevin, and Alex Wesson; SWCA Environmental Consultants	Cultural Resources Survey for the Ramona Expressway Gap Closure Project: Seventh Street to Cedar Avenue, San Jacinto, Riverside County, California
06884	2005	Hunt, Kevin, and Alex Wesson; SWCA Environmental Consultants	Cultural Resources Survey for the Ramona Expressway Widening Project: Sanderson Avenue to Bridge Street, San Jacinto, Riverside County, California
06885	2005	Hunt, Kevin, and Alex Wesson; SWCA Environmental Consultants	Cultural Resources Survey for the Ramona Expressway Widening Project: State Street to Lake Park Drive, San Jacinto, Riverside County, California
06944	2006	Demcak, Carol R.; Archaeological Resource Management Corporation	Report of Phase I Archaeological Assessment of West Esplanade Project (APNs 431-190-010 and 431-190-011), City of San Jacinto, Riverside County, California
07008	2006	White, Robert S., and Laura S. White; Archaeological Associates	A Cultural Resources Assessment of a 5+/- Acre Parcel Located Adjacent to Santa Fe Street South of Esplanade Avenue, City of San Jacinto, Riverside County
07122	2007	CRM TECH	Addendum to Historical/Archaeological Resources Survey, San Jacinto River Levee Project
07343	2007	Garnsey, Michael J., and Susan M. Hector; ASM Affiliates	Cultural Resources Study of the San Jacinto Project, City of San Jacinto, Riverside County, California

Table 2. Previously Identified Cultural Resources within the Scope of the Records Search	
CHRIS No.	**Description**
33-000124	Possible site of a Native American village known as *Ivah*
33-000401	Prehistoric site (no further information)
33-000402	Prehistoric habitation site with bedrock milling features, midden soils, chipped-stone and groundstone tools and debitage, ceramic sherds, and fire-affected rocks
33-000403	Prehistoric habitation site with bedrock milling features, petroglyphs, midden soils, chipped-stone and groundstone tools and debitage and fire-affected rocks
33-000408	Possible site of a Native American village, and former location of Gilman Hot Springs Resort
33-000551	Prehistoric habitation site with bedrock milling features, chipped-stone and groundstone tools and debitage and fire-affected rocks
33-000575	Prehistoric habitation site with bedrock milling features, midden soils, chipped-stone and groundstone tools and debitage, and human remains
33-000791	Site of Casa Loma, adobe chapel and later home of Don Francisco Pico, built in 1820
33-001054	Prehistoric habitation site with bedrock milling features, petroglyphs, midden soils, and natural springs
33-001138	Prehistoric habitation site with bedrock milling features, maze-stone petroglyph, midden soils, chipped-stone and groundstone tools and debitage and fire-affected rocks
33-001743	Prehistoric occupation site with midden soils and flaked stone
33-002538	Prehistoric bedrock milling features, one mano and two metavolcanic flakes
33-002539	Prehistoric bedrock milling features
33-002540	Prehistoric bedrock milling features
33-002541	Prehistoric bedrock milling features
33-002542	Prehistoric bedrock milling features and two quartz flakes
33-003310	Prehistoric milling features, groundstone fragment and quartz flake
33-003311	Prehistoric bedrock milling features and two stone flakes
33-003312	Prehistoric bedrock milling feature and one mano
33-003313	Prehistoric bedrock milling feature
33-003314	Prehistoric bedrock milling feature
33-003315	Prehistoric habitation site with bedrock milling features, midden soils, chipped-stone and groundstone tools and debitage and fire-affected rocks
33-003316	Prehistoric bedrock milling features
33-003317	Prehistoric bedrock milling features
33-003318	Prehistoric bedrock milling features
33-003319	Prehistoric bedrock milling features
33-003379	Cached olla found in a rock crevasse
33-003958	Prehistoric bedrock milling features
33-003970	Historic-period trash scatter, 1880s-1950s
33-003971	Historic-period trash scatter, 1880s-1920s
33-004054	Prehistoric bedrock milling features
33-004055	Prehistoric bedrock milling features
33-004056	Prehistoric bedrock milling features
33-004057	Prehistoric bedrock milling feature and one stone projectile point
33-004058	Prehistoric rock shelter and stacked cobbles
33-005789	Vernacular two-story wood-frame hotel, ca. 1886
33-006234	Steel truss bridge over San Jacinto River, constructed in 1927
33-006235	Reinforced concrete bridge over Potrero Creek, constructed in 1926
33-006240	Thompson Street Historic District, four bungalows of similar construction, ca. 1912-1930
33-006241	Wood-frame Bungalow-style single-family residence, ca. 1912
33-006242	Wood-frame Bungalow-style single-family residence, constructed in 1924
33-006243	Wood-frame Bungalow-style single-family residence, constructed in 1925
33-006244	Wood-frame Bungalow-style single-family residence, constructed in 1930

Table 2. Previously Identified Cultural Resources (continued)	
CHRIS No.	**Description**
33-006256	Vernacular wood-frame single-family residence, constructed in 1930
33-006280	Vernacular wood-frame single-family residence, ca. 1900
33-006281	Hemet Stock Farm constructed by W. F. Whittier, race track, horse stables, grandstand, and corrals, ca. 1900-1910
33-006285	Vernacular wood-frame single-family residence, constructed in 1910
33-006286	Vernacular wood-frame single-family residence, constructed in 1939
33-006287	Classical Revival-style single-family residence, ca. 1901
33-006305	Vernacular-style wood-frame single-family residence, constructed in 1912
33-006306	Vernacular wood-frame single-family residence, ca. 1910
33-006307	Vernacular wood-frame single-family residence, ca. 1894
33-006313	Vernacular wood-frame commercial building along the Santa Fe Railway, ca. 1889
33-006317	Vernacular wood-frame single-family residence, ca. 1900
33-006321	Vernacular wood-frame single-family residence, ca. 1910
33-006333	Vernacular wood-frame single-family residence, ca. 1913
33-006340	Eastlake Victorian-style single-family residence constructed in 1890
33-006358	Two-story Victorian-style single-family residence, ca. 1890s
33-006360	Vernacular wood-frame single-family residence, constructed in 1893
33-006369	Kingsbery House, vernacular brick and concrete with Craftsman influence, single-family residence, constructed in 1908
33-007297	Art Moderne-style milk barn constructed in 1957
33-007298	Vernacular wood-frame single-family residence, ca. 1911
33-007299	Vernacular wood-frame single-family residence, ca. 1920
33-007300	Stone-faced brick commercial building, ca. 1910
33-007301	Craftsman-style single-family residence, ca. 1920
33-007302	Vernacular two-story single-family ranch house of E.L. Mayberry, ca. 1920
33-007303	Lime kiln, construction date unknown
33-007304	Ranch buildings and former training camp for prize-fighters, constructed ca. 1920s-1950s
33-007305	Vernacular wood-frame single-family residence constructed in 1920
33-007306	Art Moderne-style milk barn constructed in 1939
33-007307	Vernacular wood-frame single-family residence constructed in 1910
33-007308	Vernacular wood-frame single-family residence constructed in 1913
33-007309	Mediterranean/Spanish Revival-style single-family residence with Monterey Colonial-style influence, ca. 1939
33-007310	Vernacular wood-frame single-family residence, ca. 1930
33-007311	Vernacular octagon-shaped commercial building, ca. 1936
33-007312	Vernacular commercial building, ca. 1946
33-007313	Vernacular two-story single-family ranch house of Nat Goodwin, ca. 1920
33-007314	Mediterranean/Spanish Revival-style single-family residence, ca. 1928
33-007315	Mission Revival-style single-family residence and church, ca. 1920
33-007316	Bungalow-style single-family residence, ca. 1914
33-007317	Bungalow-style single-family residence, ca. 1912
33-007318	Vernacular wood-frame single-family residence, ca. 1917
33-007319	Art Moderne-style milk barn, ca. 1940
33-007320	Vernacular wood-frame single-family residence, ca. 1899
33-007321	Vernacular wood-frame single-family residence, ca. 1890s
33-007322	Bungalow-style single-family residence, ca. 1920s
33-007323	Mediterranean/Spanish Revival-style church, ca. 1920
33-007324	Pueblo Revival-style resort guest cottages at Soboba Hot Springs, constructed in 1926
33-007325	Estudillo Mansion, ca. 1885; same as 33-012194; NRHP #01001178
33-007326	Vernacular wood-frame single-family residence, constructed in 1924
33-007327	Vernacular wood-frame single-family residence, constructed in 1942

Table 2. Previously Identified Cultural Resources (continued)	
CHRIS No.	**Description**
33-007328	Vernacular wood-frame single-family residence, constructed in 1908
33-007329	Vernacular wood-frame single-family residence, ca. 1880s
33-007330	Vernacular wood-frame single-family residence, constructed in 1900
33-007331	Vernacular wood-frame single-family residence, constructed in 1900
33-007332	Vernacular wood-frame single-family residence, ca. 1890
33-007333	Vernacular wood-frame single-family residence, ca. 1916
33-007334	Vernacular wood-frame single-family residence, ca. 1890
33-007335	Vernacular wood-frame single-family residence, ca. 1926
33-007336	Victorian-style single-family residence, ca. 1900
33-007337	Vernacular two-story brick single-family residence, ca. 1890
33-007338	Vernacular ranch house, ca. 1903
33-007339	Vernacular wood-frame single-family residence, ca. 1900
33-007340	Vernacular ranch house single-family residence, ca. 1895
33-007341	Vernacular two-story brick single-family residence, ca. 1890
33-007342	Vernacular wood-frame single-family residence, ca. 1926
33-007343	Eastlake-style two-story ranch house, ca. 1888
33-007344	Vernacular wood-frame single-family residence, ca. 1920
33-007345	Vernacular wood-frame barn, ca. 1924
33-007346	Bungalow-style single-family residence, ca. 1925
33-007347	Vernacular wood-frame single-family residence constructed in 1900
33-007348	Spanish Revival-style single-family residence constructed in 1930
33-007349	Vernacular wood-frame single-family residence constructed in 1890
33-007350	Craftsman Bungalow-style single-family residence constructed in 1912
33-007351	Art Deco/Art Moderne-style dairy house, ca. 1937
33-007352	Vernacular wood-frame single-family residence, ca. 1900
33-007353	Vernacular wood-frame commercial building and single-family residence, ca. 1922
33-007354	Bungalow-style single-family residence, ca. 1916
33-007355	Vernacular wood-frame single-family residence, ca. 1890
33-007356	Queen Anne-style single-family residence, ca. 1897
33-007357	Craftsman Bungalow-style single-family residence, ca. 1925
33-007358	Craftsman Bungalow-style single-family residence, constructed in 1914
33-007359	Craftsman Bungalow-style single-family residence, constructed in 1939
33-007360	Bungalow-style single-family residence, ca. 1930
33-007361	Vernacular wood-frame single-family residence, ca. 1910
33-007362	Vernacular wood-frame single-family residence, ca. 1917
33-007363	Bungalow-style single-family residence, ca. 1905
33-007364	Provincial Revival-style single-family residence, ca. 1940
33-007365	Queen Anne-style single-family residence, ca. 1890
33-007366	Pueblo Revival- and Mediterranean/Spanish revival-style single-family residence, ca. 1926
33-007367	Eastlake-style single-family residence, ca. 1890
33-007368	Eastlake-style two-story single-family residence, ca. 1898
33-007369	Queen Anne-style single-family residence, ca. 1897
33-007370	Vernacular wood-frame single-family residence, ca. 1900
33-007371	Vernacular wood-frame single-family residence, ca. 1920
33-007372	Vernacular wood-frame single-family residence, ca. 1926
33-007373	Vernacular wood-frame single-family residence, ca. 1920
33-007374	Bungalow-style single-family residence, ca. 1920
33-007375	Bungalow-style single-family residence, ca. 1910
33-007376	Bungalow-style single-family residence, ca. 1910
33-007377	Vernacular wood-frame single-family residence, ca. 1910
33-007378	Vernacular wood-frame single-family residence, ca. 1885
33-007379	Vernacular wood-frame single-family residence, ca. 1916
33-007380	Vernacular wood-frame single-family residence, ca. 1920

Table 2. Previously Identified Cultural Resources (continued)	
CHRIS No.	**Description**
33-007381	Craftsman Bungalow-style single-family residence, ca. 1916
33-007382	Vernacular wood-frame single-family residence, ca. 1913
33-007383	Vernacular wood-frame single-family residence, ca. 1910
33-007384	Durand Ranch concrete grain silo constructed ca. 1950s
33-007385	Vernacular wood-frame single-family residence, ca. 1911
33-007386	Vernacular wood-frame and brick single-family residence constructed in 1900
33-007387	Vernacular wood-frame single-family residence constructed in 1920
33-007388	Bungalow-style single-family residence, ca. 1920
33-007389	Bungalow-style single-family residence, ca. 1920
33-007390	Bungalow-style single-family residence, ca. 1933
33-007391	Vernacular wood-frame single-family residence, ca. 1915
33-007392	Vernacular wood-frame single-family residence, ca. 1920
33-007393	Vernacular wood-frame single-family residence, ca. 1915
33-007394	West portal of the San Jacinto tunnel of the Colorado River Aqueduct, constructed in 1939
33-007395	Bungalow-style single-family residence, ca. 1906
33-007396	Bungalow-style single-family residence, ca. 1920
33-007397	Vernacular wood-frame single-family residence, ca. 1932
33-007398	Vernacular wood-frame single-family residence, ca. 1883
33-007399	Craftsman Bungalow-style single-family residence, ca. 1910
33-007400	Vernacular wood-frame single-family residence, ca. 1932
33-007401	Vernacular wood-frame single-family residence, ca. 1936
33-007402	Vernacular wood-frame single-family residence, ca. 1915
33-007403	Vernacular wood-frame single-family residence, ca. 1910
33-007404	Vernacular wood-frame single-family residence, ca. 1910
33-007405	Vernacular wood-frame hotel, ca. 1920
33-007406	Vernacular wood-frame multiple-family residence, ca. 1915
33-007407	Reinforced concrete bridge over San Jacinto River, constructed in 1929
33-007408	Reinforced concrete bridge over North Fork San Jacinto River, constructed in 1929
33-007409	Vernacular wood-frame firehouse, 1938
33-009697	Russian Transpolar Landing Site of 1937; CHL No. 989
33-011165	Prehistoric bedrock milling features
33-011166	Prehistoric bedrock milling feature with one slick
33-011265	Riverside County portion of the Colorado River Aqueduct, constructed in 1933
33-011580	Prehistoric bedrock milling features, pictographs, habitation debris, and historic-period refuse
33-011581	Prehistoric bedrock milling features and habitation debris, such as groundstone and chipped-stone debitage
33-012194	Estudillo Mansion, ca. 1885; same as 33-007325; NRHP #01001178)
33-012804	Scattered historic-period structural debris and landscaping, no temporal estimate
33-012805	Scattered historic-period structural debris and landscaping, no temporal estimate
33-013241	Remnants of agricultural irrigation system, ca. 1930s
33-013895	Prehistoric bedrock milling feature with two slicks
33-013896	Prehistoric bedrock milling feature with one slick
33-013897	Prehistoric bedrock milling feature with one slick
33-014281	Wood-frame Liberty-style single-family residence, constructed in 1946
33-014282	Structural remains of Bothin villa, constructed in 1907-1909, demolished in 1931
33-014318	Structural remains of Bothin reservoir, constructed in 1907
33-014319	Structural remains of Bothin garage, constructed in 1908
33-014709	Remnants of a concrete standpipe irrigation system, ca. 1950s
33-014710	Isolated prehistoric metate
33-014791	Folk-style and Bungalow-style single-family residences, ca. early 20th century

Table 2. Previously Identified Cultural Resources (continued)	
CHRIS No.	**Description**
33-014836	Prehistoric bedrock milling features and sparse lithic scatter
33-014910	Shepherds House Church of the Nazarene, ca. 1952; same as 33-015749
33-014994	Dairy farm complex, ca. 1950s-1960s
33-015010	Prehistoric bedrock milling feature
33-015267	Ranch-style single-family residence constructed in 1954
33-015664	Late 19th and early 20th century refuse
33-015734	San Diego Aqueduct, , constructed in 1947-1951
33-015741	Reflection Lake, constructed by the Army Corps of Engineers ca. 1946
33-015743 *	San Jacinto Valley Railway, constructed in 1888
33-015748	Ranch-style single-family residence constructed ca. 1950s
33-015749	Shepherds House Church of the Nazarene, ca. 1952; same as 33-014910
33-015752	Various buildings at the CBJ Dairy, constructed in 1959
33-016028	Wood-frame vernacular single-family residence, ca. 1915
33-016637	Abandoned extension of North Ramona Boulevard
33-016638	Historic-period refuse, ca. 1940s
33-016639	Electric-powered irrigation well
33-016640	Electric-powered irrigation well
33-016708	Late 19th and early 20th century refuse and structural remains

*Located within or immediately adjacent to the APE;
NRHP=National Register of Historic Places;
CHL=California Historical Landmark

NATIVE AMERICAN CONSULTATION

In response to CRM TECH's inquiry, the Native American Heritage Commission reported that the sacred lands record search identified the presence of Native American cultural resources in the immediate APE (App. 2). The commission suggested Harold Arres of the Soboba Band of Luiseño Indians be contacted for further information, along with 10 other local Native American representatives (App. 2).

Upon receiving the commission's response, CRM TECH initiated correspondence with all 11 individuals on the referral list and the organizations they represent. In addition, John Gomez, Jr., Cultural Resources Coordinator for the Ramona Band of Cahuilla Indians, Franklin Dancy, Project Manager for the Morongo Band of Indians, Darren Hill, Cultural Resources Coordinator for the Soboba Band of Luiseño Indians, and Anna Hoover, Cultural Analyst for the Temecula Band of Luiseño Mission Indians, were also contacted. As of this time, representatives of the Cahuilla Band, the Soboba Band, and the Temecula Band have responded to CRM TECH's request for comment. In addition, as mentioned above, a representative of the Soboba Band had previously commented directly to the City of San Jacinto in June 2007 (App. 2).

In the June 20, 2007, letter to Asher Hartel at the City of San Jacinto, Erica Helms of the Soboba Band's Cultural Resources Department requests that a Native American monitor from the tribe be present during all ground-disturbing activities associated with the project. Ms. Helms also requests that the tribe be involved in all future consultations with the project proponent and the Lead Agency. In a letter to CRM TECH, dated April 14, 2008, Darren Hill reiterated the tribes requests. Anna Hoover of the Temecula Band identifies the project area as a part of her tribe's ancestral lands in a letter dated March 28, 2008. In addition to further consultation with the project proponent and the Lead Agency, Ms. Hoover requests copies of all archaeological documentations pertaining to the project.

In a telephone conversation on March 27, 2008, Maurice Chacon, Cultural Resources Coordinator for the Cahuilla Band of Indians, stated that his tribe had concerns regarding Native American cultural resources within the APE, and that members of the tribe may be interested in a site visit. Shortly afterward, however, Mr. Chacon left his position with the Cahuilla Band, and CRM TECH then followed up with Anthony Madrigal, Chairperson of the Cahuilla Band, who indicated that he wished to review the inquiry letter for the project.

CRM TECH contacted Mr. Madrigal again in July 2008 concerning the field survey results and a possible site visit with CRM TECH archaeologist/field director Daniel Ballester. At that time, Mr. Madrigal replied that he would contact Mr. Ballester directly if he felt that the APE warranted a site visit. To date, Mr. Ballester has not heard back from Mr. Madrigal or any other Cahuilla Band members. Throughout the course of the Native American consultation, no specific sites of Native American cultural concern were identified in the APE by any of the tribal representatives contacted.

POTENTIAL HISTORICAL RESOURCE

As discussed above, nearly half of the APE could not be accessed during the field survey, and so were not surveyed during this study (Fig. 4). The only cultural resource encountered within the APE boundaries during the field survey was a segment of the former San Jacinto Valley Railway located south of Seventh Street, a part of the previously recorded Site 33-015743 (Fig. 6). Several of the steel rails had date stamps from the late-1880s or the early 20th century, and the right-of-way at this location is fenced and clear of vegetation, which suggests that while the railway has been largely in disuse for a number of years, the materials and design of the structure are still intact. The right-of-way is bounded by commercial development and vacant land. The rail line and right-of-way appears to be in good condition and retains sufficient integrity to be considered a potential "historical resource," as defined by CEQA.

Figure 6. A segment of the San Jacinto Valley Railway within the APE (view to the north, photo taken on July 18, 2008).

No evidence of any prehistoric—i.e., Native American—cultural resources was found within or adjacent to the APE during the survey. A vernacular commercial building at 301 N. State Street, known as "Rocios Party Rentals," was encountered within the APE, but according to historic aerial photographs it post-dates 1967 (Historic-Aerial.com n.d.). Therefore, it is not considered a potential historical resource (Fig. 7).

HISTORICAL BACKGROUND

Based on historic maps consulted for this study, the project vicinity showed clear evidence of settlement and development activities as early as the 1850s-1860s, when the first U.S.

land surveys revealed the presence of the Casa Loma ranch house, Don José Estudillo's residence, and a number of wagon roads in the present-day San Jacinto area (Fig. 8). The buildings were well outside of the APE, however, although a few of the wagon roads crossed the APE at different locations along various alignments (Fig. 8).

Between the 1860s and the 1890s, the San Jacinto area experienced a notable growth spurt, due in part to a development boom that swept across southern California in the 1880s-1890s, and the advent of the San Jacinto Valley Railway through the valley, an important agricultural region at that time (Fig. 9). By the end of the century, the town of San Jacinto had taken shape, with a densely packed downtown area surrounded by more sparsely populated rural land featuring crisscrossing roads and scattered farmsteads (Fig. 9).

Figure 7. Modern building at 301 N. State Street (view to the southeast; photo taken on July 18, 2008).

During the mid-20th century, as the San Jacinto Valley embarked on a period of rapid growth, especially amid the post-WWII boom, the pace of development accelerated in the vicinity of the APE, as demonstrated by the increased number of built-environment features, most notably the grid of roads that remains in use today (Figs. 10-11). However, throughout the historic period, the area around the APE remained rural in character, used predominantly for agricultural purposes (Figs. 10-11).

DISCUSSION

The purpose of this study is to identify any cultural resources within or adjacent to the APE, and to assist the City of San Jacinto in determining whether such resources meet the official definitions of "historical resources," as provided in the California Public Resources Code, in particular CEQA. As stated above, the only potential "historical resource"

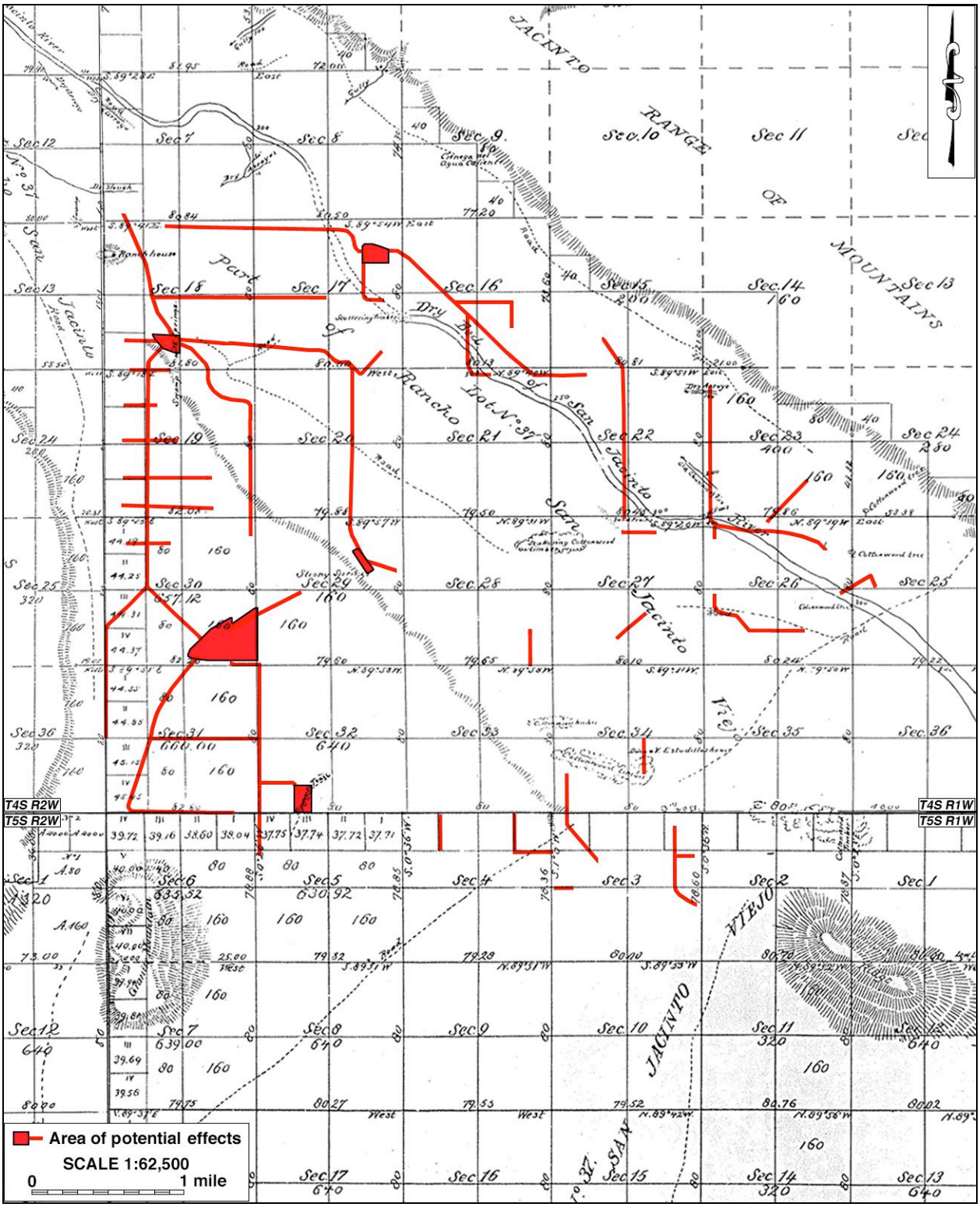


Figure 8. The APE and vicinity in 1852-1880. (Source: GLO 1865; 1867a; 1867b; 1880)

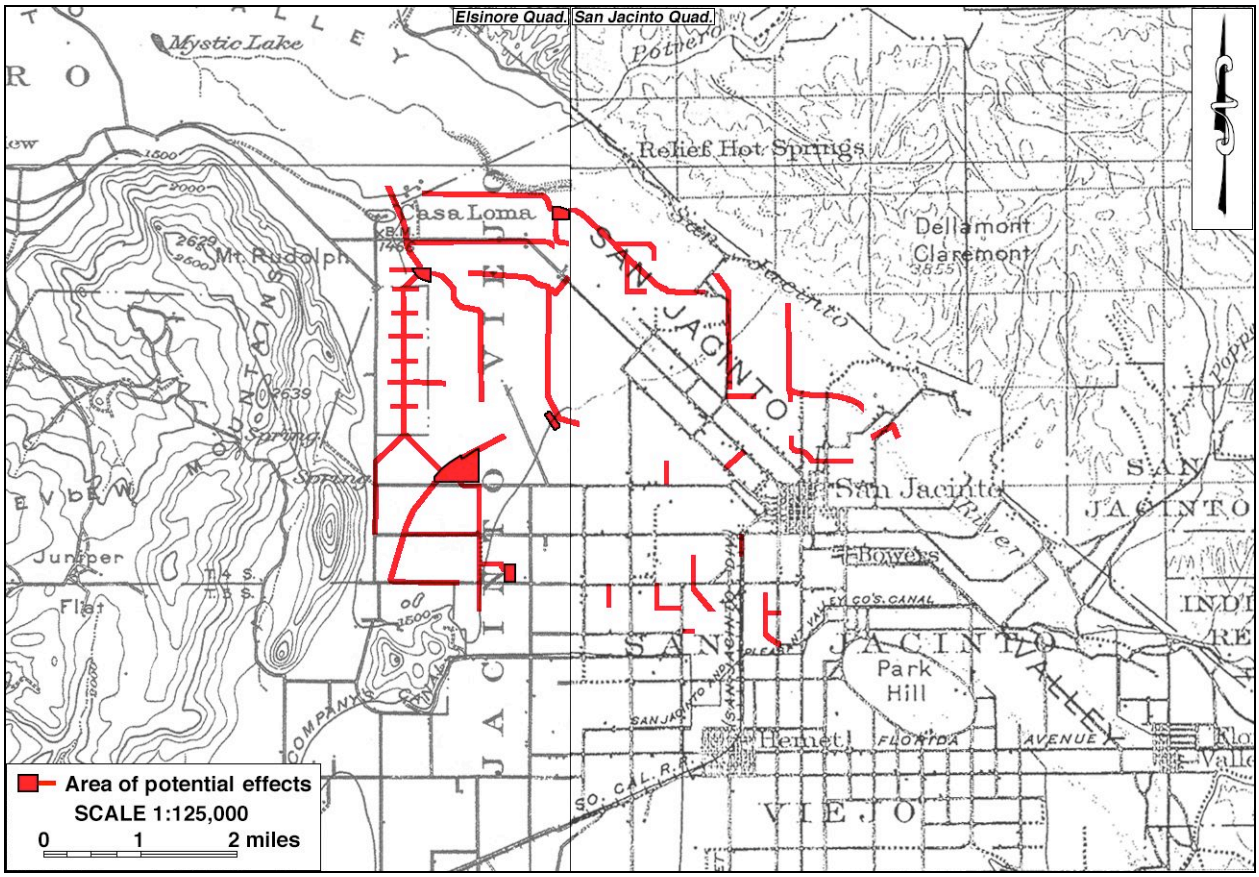


Figure 9. The APE and vicinity in 1897-1898. (Source: USGS 1901a; 1901b)

encountered within the APE during this study was a segment of the former San Jacinto Valley Railway (Site 33-015743). The following sections discuss the historical significance of Site 33-015743 and its qualification as a "historical resource," as defined by CEQA.

DEFINITION

According to PRC §5020.1(j), "'historical resource' includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." More specifically, CEQA guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the Lead Agency (Title 14 CCR §15064.5(a)(1)-(3)).

Regarding the proper criteria of historical significance, CEQA guidelines mandate that "a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

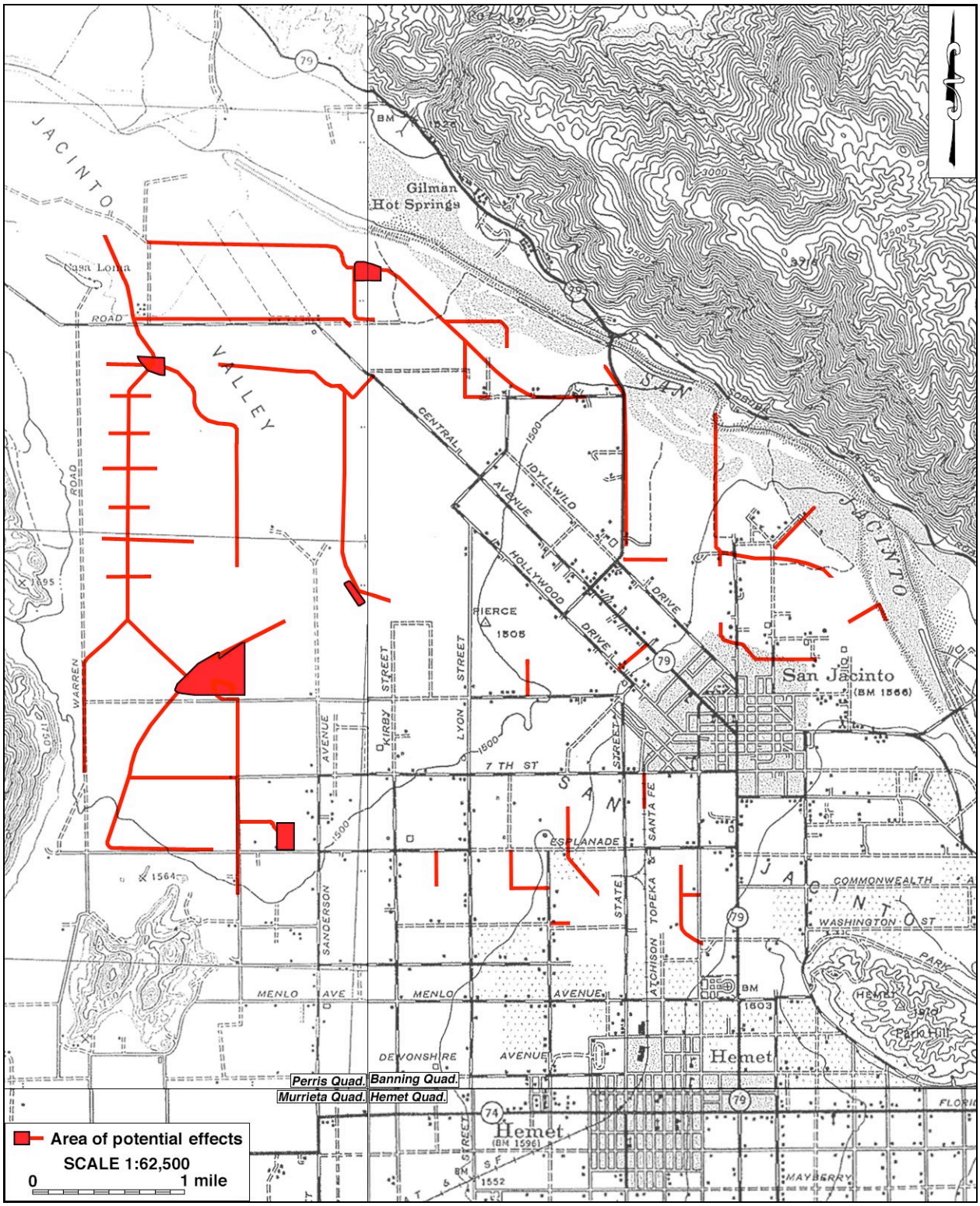


Figure 10. The APE and vicinity in 1939-1941. (Source: USGS 1942a-c; 1943)

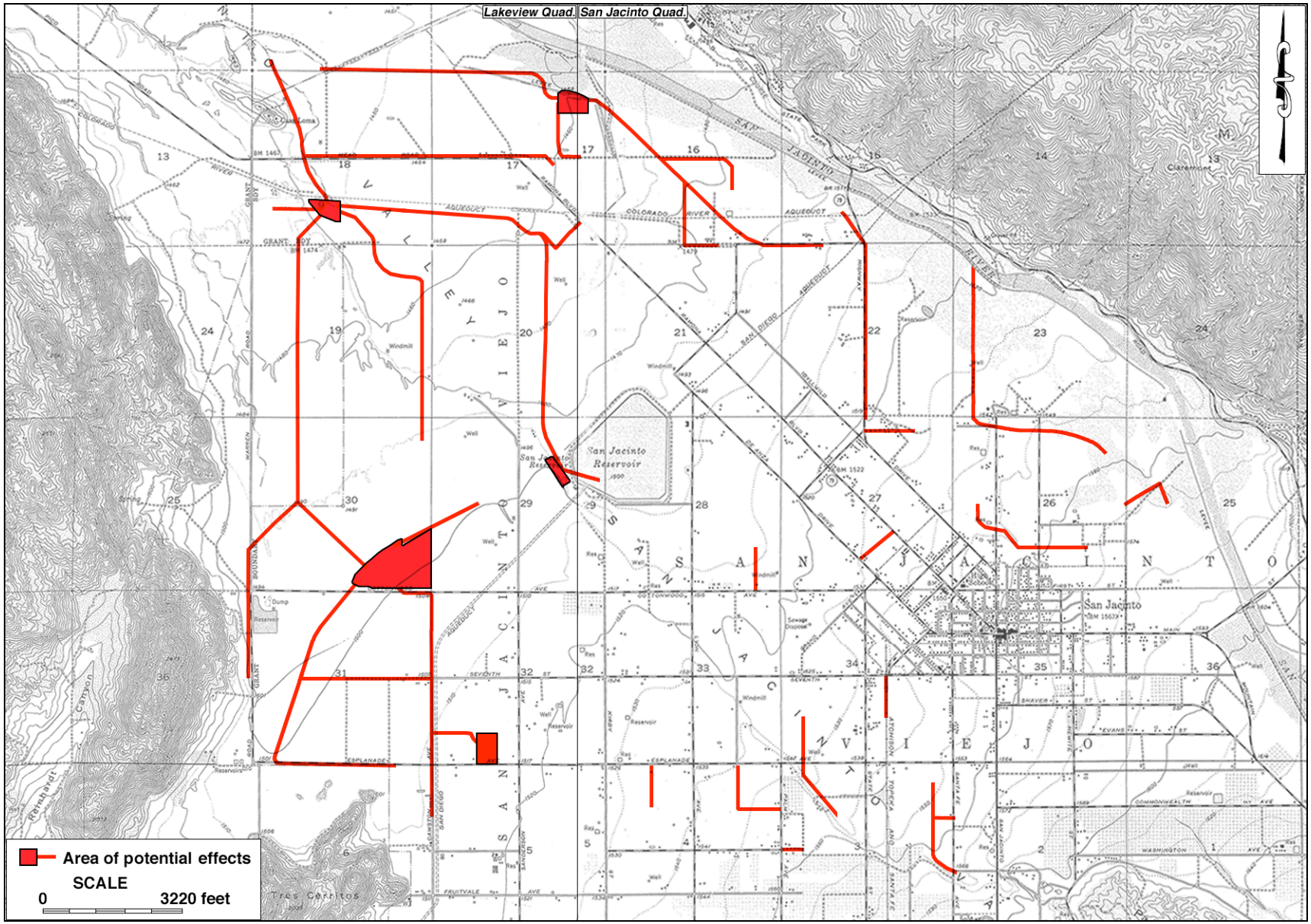


Figure 11. The APE and vicinity in 1949-1951. (Source: USGS 1953a; 1953b)

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1(c))

SITE EVALUATION

Site 33-015743, as mentioned above, represents the former San Jacinto Valley Railway, which was constructed as a Santa Fe subsidy in 1888. As the first modern transportation artery to reach the heart of the San Jacinto Valley, the rail line played an important role in the growth of the region, particularly its agriculture-based economy, during the late 19th and early 20th centuries. In light of its close association with a pattern of events or a historical trend that made important contributions to the local and regional history, Easter and Beedle (2005:4) concluded that Site 33-015743 was locally significant under Criterion 1 for the California Register. Based on the same considerations, and on the fact that the rail line appears to retain sufficient integrity to relate to its period of significance, the present study concurs with Easter and Beedle's previous evaluation of the site, and concludes that 33-015743 qualifies as a "historical resource" under CEQA.

PROJECT EFFECTS ASSESSMENT

CEQA establishes that "a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

According to current plans, the proposed project at the location of Site 33-015743 will be limited to trenching for the installation of underground pipe within the railway right-of-way, but will not intersect the rail line itself or any associated railway structures. The project will not result in the destruction or relocation of the railway, nor will it alter the basic characteristics of the site. Therefore, CRM TECH concludes that the proposed project will not cause a substantial adverse change in the significance of Site 33-015743, the only "historical resource" encountered within the APE during this study.

However, if project plans should change to include construction of above-ground structures or removal of existing track or other railroad-related structures within the right-of-way, then mitigation of project effects will be required under CEQA provisions, including, but not limited to, extensive historical background research and physical recordation of the segment of railway that will be impacted at a level comparable to the Historic American Engineering Record (HAER).

CONCLUSION AND RECOMMENDATIONS

The foregoing report has provided background information on the area of potential effects, outlined the methods used in the current study, and presented the results of the various avenues of research. During the course of the study, a portion of the APE south of Seventh Street was found to be located within the boundaries of Site 33-015743, a segment of the former San Jacinto Valley Railway that dates to 1888. The site was previously recorded and evaluated for historical significance, and it appears to qualify as a "historical resource" under CEQA. According to current plans, the proposed project at this location will be limited to trenching for the installation of underground pipe within the railway right-of-way, but will not impact the rail line itself or any associated railway structures. Therefore, the project as currently planned will not adversely affect Site 33-015743. No other potential "historical resources" were encountered within or adjacent to the APE during this study. Based on these findings, CRM TECH concludes that the proposed project will not cause "a substantial adverse change in the significance of a historical resource" (PRC §21084.1).

Accordingly, CRM TECH presents the following recommendations to the City of San Jacinto:

- No historical resources have been identified within the surveyed portions of the project area, and thus future development in those portions of the project area will not cause substantial adverse changes to any known historical resources;
- Areas that could not be surveyed adequately during this study (see Fig. 4) should be re-surveyed once a specific project is proposed and permission has been obtained to access the property;
- If buried cultural materials are discovered during any earth-moving operations associated with the undertaking, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

REFERENCES

Bean, Lowell John
1978 Cahuilla. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*, pp. 575-587. Smithsonian Institution, Washington, D.C.

Bean, Lowell John, and Florence C. Shipek
1978 Luiseño. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*, pp. 550-563. Smithsonian Institution, Washington, D.C.

Chartkoff, Joseph L., and Kerry Kona Chartkoff
1984 *The Archaeology of California*. Stanford University Press, Stanford, California.

Easter, P., and P. Beedle
2005 Historic Resources Inventory Record, Site 33-015743. On file, Eastern Information Center, University of California, Riverside.

GLO (General Land Office, U.S. Department of the Interior)
1865 Plat Map: Township No. 5 South Range No. 2 West, San Bernardino Meridian; surveyed in 1853-1865.
1867a Plat Map: Township No. 4 South Range No. 1 West, San Bernardino Meridian; surveyed in 1853-1867.
1867b Plat Map: Township No. 4 South Range No. 2 West, San Bernardino Meridian; surveyed in 1853-1867.
1880 Plat Map: Township No. 5 South Range No. 1 West, San Bernardino Meridian; surveyed in 1852-1880.

Gunther, Jane Davies
1984 *Riverside County, California, Place Names: Their Origins and Their Stories*. Jane Davies Gunther, Riverside.

HistoricAerials.com
n.d. Aerial Photography from the Past to the Present. Http://www.historic aerials.com.

Kroeber, Alfred L.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Government Printing Office, Washington, D.C.

Moratto, Michael J. (ed.)
1984 *California Archaeology*. Academic Press, Orlando, Florida.

Strong, William Duncan
1929 *Aboriginal Society in Southern California*. University of California Publications in American Archaeology and Ethnology, Vol. 26. Reprinted by Malki Museum Press, Banning, California, 1972.

USGS (United States Geological Survey, U.S. Department of the Interior)
1901a Map: Elsinore, Calif. (30', 1:125,000); surveyed in 1897-1898.

1901b Map: San Jacinto, Calif. (30', 1:125,000); surveyed in 1897-1898.
1942a Map: Banning, Calif. (15', 1:62,500); aerial photographs taken in 1939 and 1941.
1942b Map: Hemet, Calif. (15', 1:62,500); aerial photographs taken in 1939 and 1941.
1942c Map: Murrieta, Calif. (15', 1:62,500); aerial photographs taken in 1939.
1943 Map: Perris, Calif. (15', 1:62,500); aerial photographs taken in 1939.
1953a Map: Lakeview, Calif. (7.5', 1:24,000); aerial photographs taken in 1951.
1953b Map: San Jacinto, Calif. (7.5', 1:24,000); aerial photographs taken in 1949.
1979a Map: Santa Ana, Calif. (1:250,000); 1959 edition revised.
1979b Map: Lakeview, Calif. (7.5', 1:24,000); 1967 edition photorevised in 1967.
1996 Map: San Jacinto, Calif. (7.5', 1:24,000); 1953 edition photorevised in 1994.

Wallace, William J.
1955 A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Archaeology* 11(3):214-230.
1978 Post-Pleistocene Archeology, 9,000 to 2,000 BC. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 25-36. Smithsonian Institution, Washington, D.C.

Warren, Claude N.
1968 Cultural Traditions and Ecological Adaptations on the Southern California Coast. In Cynthia Irwin-Williams (ed.): *Archaic Prehistory in Western United States*; pp. 1-14. Eastern New Mexico University Contributions in Anthropology 1(3). Portales, New Mexico.
1984 The Desert Region. In Michael J. Moratto (ed.): *California Archaeology*; pp. 339-430. Academic Press, Orlando, Florida.

Warren, Claude N., and Robert H. Crabtree
1986 Prehistory of the Southwestern Area. In Warren L. D'Azevedo (ed.): *Handbook of North American Indians*, Vol. 11: *Great Basin*; pp. 183-193. Smithsonian Institution, Washington, D.C.

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.

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.

PROJECT 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/FIELD DIRECTOR
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 writing, 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.

PROJECT ARCHAEOLOGIST/NATIVE AMERICAN LIAISON
Laura Hensley Shaker, B.S.

Education

1998	B.S., Anthropology (with emphasis in Archaeology), University of California, Riverside.
1997	Archaeological Field School, University of California, Riverside.
2002	"Historic Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base; presented at CRM TECH, Riverside, California.
1999	"Unexploded Ordinance Training," presented by EOD officers; Fort Irwin Army Training Facility, Barstow, California.

Professional Experience

1999-	Project Archaeologist, Native American Liaison, CRM TECH, Riverside/ Colton, California.
1999	Archaeological survey and excavation at Vandenburg Airforce Base; Applied Earthworks, Lompoc, California.
1999	Archaeological survey at Fort Irwin Army Training Facility, Barstow; ASM Affiliates, Encinitas, California.
1998-1999	Paleontological fieldwork and laboratory procedures, Eastside Reservoir Project; San Bernardino County Museum, Redlands, California.
1998	Archaeological survey at the Anza-Borrego State Park; Archaeological Research Unit, University of California, Riverside.
1997-1998	Archaeological survey and excavation at the Twentynine Palms Marine Corps Air and Ground Combat Center; Archaeological Research Unit, University of California, Riverside.

PROJECT ARCHAEOLOGIST
Nina Gallardo, B.A.

Education

2004	B.A., Anthropology/Law and Society, University of California, Riverside.

Professional Experience

2004- Project Archaeologist, CRM TECH, Riverside/Colton, California.
- Surveys, excavations, mapping, and records searches.

Honors and Awards

2000-2002 Dean's Honors List, University of California, Riverside.

APPENDIX 2

CORRESPONDENCE WITH NATIVE AMERICAN REPRESENTATIVES*

* A total of 15 local Native American representatives were contacted; a sample letter is included in this report.

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:
March 21, 2008

Number of pages (including this cover sheet):
6

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:
San Jacinto Master Drainage Plan
CRM TECH #2225A

Project size:
90+ acres plus linear pipelines

Location:
In the Cities of Hemet & San Jacinto
Riverside County

USGS 7.5' quad sheet data:
Lakeview, Calif.
T4S R1W, SBBM
Sections: 7,8, 17-20, 29-32

San Jacinto, Calif.
T4S R1W, SBBM
Sections: 15-17, 22, 23, 25-27, 32
T5S R1W, SBBM
Sections: 3, 4

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

March 25, 2008

Maurice Chacon, Cultural Resources
Cahuilla Band of Indians
P. O. Box 391760
Anza, CA 92539

RE: San Jacinto Master Drainage Plan
In the Cities of San Jacinto and Hemet, Riverside County
CRM TECH Contract #2225

Dear Mr. Chacon:

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 project area. The lead agency for this project is the City of San Jacinto for CEQA-compliance purposes.

The proposed project is located throughout the City of San Jacinto and in the northern portion of Hemet, Riverside County. The accompanying map depicts the location of the project area in Sections 7, 8, 17, 18, 19, 29, 30, 31, and 32, T4S R1W, of the Lakeview, Calif., 7.5' quadrangle, and Sections 15, 16, 17, 22, 23, 25, 26, 27 and 32, T4S R1W, and Sections 3 and 4, T5S R1W, of the San Jacinto, Calif., 7.5' quadrangle.

Any information, concerns or recommendations regarding cultural resources in the vicinity of the project area may be forwarded to CRM TECH by telephone, e-mail, facsimile or standard mail. Requests for documentation or information we cannot provide will be forwarded to our client and/or the lead agency. We would also like to clarify that CRM TECH, acting on behalf of Albert A. Webb and Associates, is not the appropriate entity to initiate government-to-government consultations. Thank you for the time and effort in addressing this important matter.

Respectfully,

Laura Hensley Shaker
CRM TECH

Encl.: Project location map

From: lshaker@crmtech.us
To: "Daren Hill" <dhill@soboba-nsn.gov>
Subject: project 2225
Date: Tue, 25 Mar 2008 14:37:13 -0400

Mr. Hill,

The Soboba Band sent an initial reply to the City of San Jacinto for the San Jacinto Drainage Area Master Plan project on June 20, 2007. I have attached a copy of Erica Helms' letter to this email message. If you have any additional information or concerns please notify CRM TECH.

Sincerely,
Laura Hensley Shaker
CRM TECH
(909) 376-7844
lshaker@crmtech.us

From: lshaker@crmtech.us
To: "Anna Hoover" <ahoover@pechanga-nsn.gov>,
"Daren Hill" <dhill@soboba-nsn.gov>,
"Maurice Chacon" <environmental@cahuilla.net>
Reply-To: lshaker@crmtech.us
Subject: CRM TECH Project 2225 San Jacinto Drainage Plan Project
Date: Wed, 26 Mar 2008 12:58:32 -0400

Dear Native American Representative,

CRM TECH will be conducting the archaeological field survey for the San Jacinto Drainage Plan Project, in the near future, and is seeking consultation from the Native American tribes in hopes of gaining knowledge regarding cultural resources within or in the immediate vicinity of the property. Tribal members who have specific knowledge of sacred/religious sites or other sites of Native American traditional cultural significance within or near the project area are encouraged to contact us with recommendations on how to proceed with the project.

Name of project:
San Jacinto Master Drainage Plan
CRM TECH #2225A

Project size:
90+ acres plus linear pipelines

Location:
In the Cities of Hemet & San Jacinto
Riverside County

USGS 7.5' quad sheet data:
Lakeview, Calif.
T4S R1W, SBBM
Sections: 7,8, 17-20, 29-32

San Jacinto, Calif.
T4S R1W, SBBM
Sections: 15-17, 22, 23, 25-27, 32
T5S R1W, SBBM
Sections: 3, 4

If a member of your tribe is interested in participating in the field survey, please contact me for details.

Thank you,
Laura Hensley Shaker
lshaker@crmtech.us

Mission:

[redacted]

June 20, 2007

Attn: Asher Hartel
City of San Jacinto
248 East Main Street
San Jacinto, Ca 92583

Re: San Jacinto Avenue Area Master Plan

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided on said project(s) has been reviewed through our Cultural Resources Department, where it was concluded that although the site is outside the existing reservation, the project area does fall within the bounds of our Tribal Traditional Use Areas.

At this time the Soboba Band does see a direct need for Native American Monitoring and Consultation. This will be required whenever Native American Monuments are present during any and all ground disturbing activities. Soboba requests this, until deemed unnecessary by both Archaeological and Native American Monitors. Also the Tribe requests to be involved in any and all consultations throughout the project. If you have any questions or concerns, please do not hesitate to contact the Cultural Resource Department.

[redacted]

Joseph Ontiveros
Soboba Cultural Resource Department
Cell (951) 663-5279
Phone (951) 654-5544
ontiveros@soboba-nsn.gov

Mission:

[redacted]

June 21, 2007

Attn: Asher Hartel
City of San Jacinto
248 East Main Street
San Jacinto, Ca 92583

Re: San Jacinto Avenue / Area Master Plan

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided on said project(s) has been reviewed through our Cultural Resource Department, where it was concluded that although the site is outside the existing reservation, the project area does fall within the bounds of our Tribal Traditional Use Areas.

At this time the Soboba Band does see a direct need for Native American Monitoring and Consultation. This will be required whenever Native American Monuments are present during any and all ground disturbing activities. Soboba requests this, until deemed unnecessary by both Archaeological and Native American Monitors. Also the Tribe requests to be involved in any and all consultations throughout the project. If you have any questions or concerns, please do not hesitate to contact the Cultural Resource Department.

[redacted]

Joseph Ontiveros
Soboba Cultural Resource Department
Cell (951) 663-5279
Phone (951) 654-5544
ontiveros@soboba-nsn.gov

Mission:

[redacted]

June 20, 2007

Attn: Asher Hartel
City of San Jacinto
248 East Main Street
San Jacinto, Ca 92583

Re: San Jacinto Avenue Area Master Plan

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided on said project(s) has been reviewed through our Cultural Resource Department, where it was concluded that although the site is outside the existing reservation, the project area does fall within the bounds of our Tribal Traditional Use Areas.

At this time the Soboba Band does see a direct need for Native American Monitoring and Consultation. The Tribe requests a Native American Monitor be present during any and all ground disturbing activities. Soboba requests this, until deemed unnecessary by both Archaeological and Native American Monitors. Also the Tribe requests to be involved in any and all consultations throughout the project. If you have any questions or concerns, please do not hesitate to contact the Cultural Resource Department.

[redacted]

Joseph Ontiveros
Soboba Cultural Resource Department
Cell (951) 663-5279
Phone (951) 654-5544
ontiveros@soboba-nsn.gov

[redacted]

APPENDIX 3

CALIFORNIA HISTORICAL RESOURCES INVENTORY RECORD UPDATE

Recorded by Daniel Ballester ***Date** July 18, 2008 ___ Continuation √ Update

CRM TECH encountered an approximately 1,400-foot-long segment of the former San Jacinto Valley Railway located south of Seventh Street in San Jacinto during a 2008 survey for a proposed drainage system. Several of the steel rails along the segment had date stamps from the late-1880s and early 20th century, and the right-of-way at this location is fenced and clear of vegetation, which suggests that while the railway has been largely in disuse for a number of years, the materials and design of the structure are still intact. The right-of-way is bounded by commercial development and vacant land. Overall, the rail line and right-of-way appears to be in good condition.

Report Citation:

Josh Smallwood, Daniel Ballester, and Laura H. Shaker
2008 Historical/Archaeological Resources Survey Report: San Jacinto Master Drainage Plan, in and near the City of San Jacinto, Riverside County, California. On file, Eastern Information Center, University of California, Riverside.

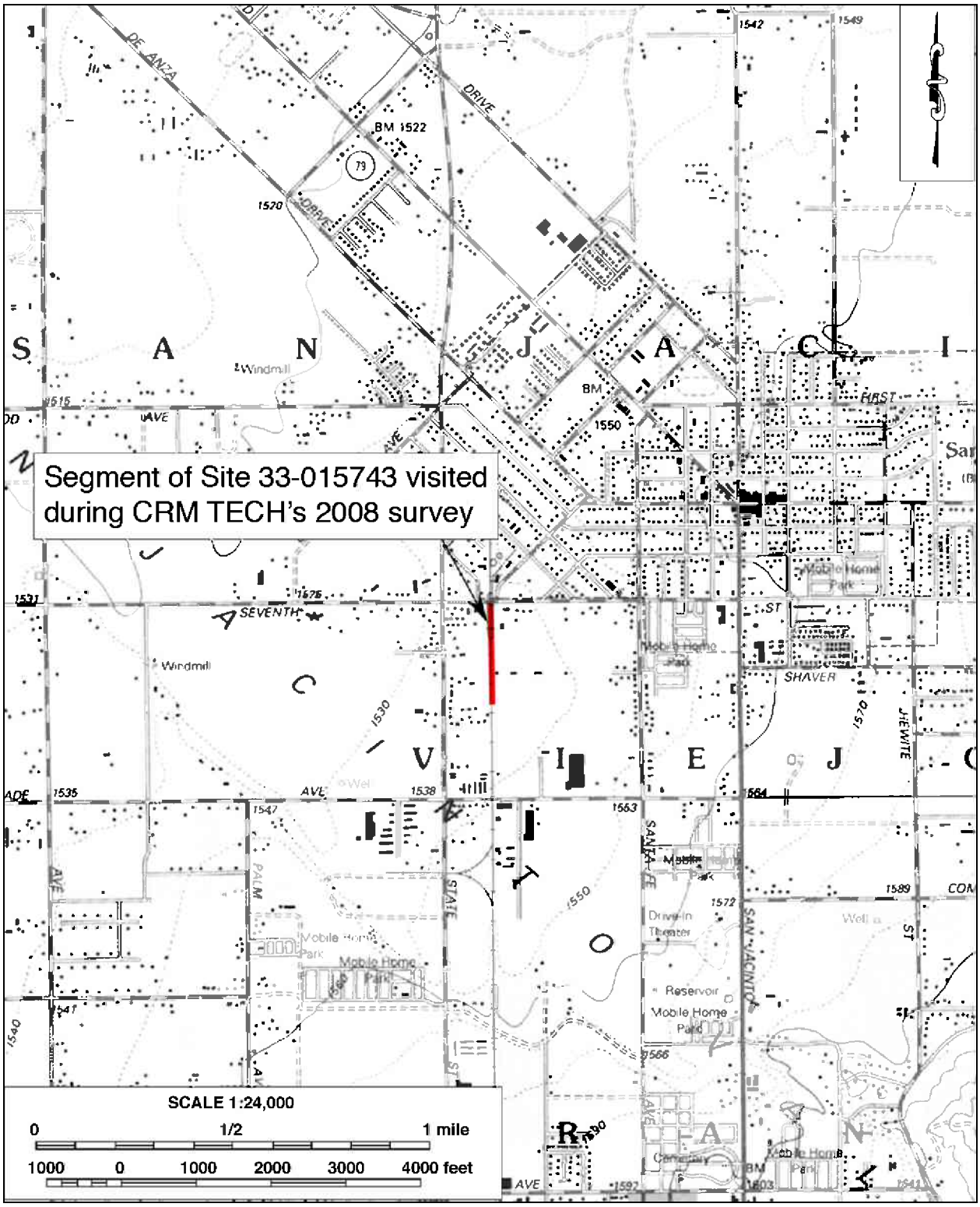
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 33-015743 (Update)
HRI #
Trinomial CA-RIV-8196 (Update)

Page 2 of 2 Resource name or # (Assigned by recorder) CRM TECH 2225-1H

*Map Name: San Jacinto, Calif. *Scale: 1:24,000 *Date of Map: 1996



DPR 523J (1/95) *Required information