County of Fresno
DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

INITIAL STUDY
ENVIRONMENTAL CHECKLIST FORM

1. **Project title:**
   Jacalitos Creek Bridge Replacement Project, Initial Study No. 7530

2. **Lead agency name and address:**
   County of Fresno Department of Public Works and Planning
   2220 Tulare Street, 6th Floor
   Fresno, CA 93721

3. **Contact person and phone number:**
   Thomas Kobayashi, Planner
   (559)600-4224

4. **Project location:**
   The project site is located on Lost Hills Road, just west of Jacalitos Creek Road. The project site is located approximately 2.05 miles southeast of the nearest city limits of the City of Coalinga.

5. **Project sponsor's name and address:**
   Alexis Rutherford
   County of Fresno Department of Public Works and Planning, Design Division
   2220 Tulare Street, 7th Floor
   Fresno, CA 93721

6. **General Plan designation:**
   Agriculture per the County adopted Coalinga Regional Plan

7. **Zoning:**
   AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone District.

8. **Description of project: (Describe the whole action involved, including, but not limited to, later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)**
   Replace the existing Jacalitos Creek Bridge, make associated improvements that would address scour problems at the bridge, and repair and/or stabilize the creek banks upstream and downstream of the bridge. Specifically the project would: replace the existing two-lane bridge with a new two-lane bridge built to current standards; taper widen the roadway approaches to current standards up to approximately 400 feet on either side of the bridge; shift the intersection of Lost Hills Avenue and Jacalitos Creek Road slightly to the east to accommodate new approach rail, work on Jacalitos road would extend approximately 425 feet from the intersection; install rock slope protection, approximately 5 feet to 6 feet, up and downstream from the existing bridge to counteract high velocity flows; install a series of stream barbs along the southeasterly abutment and upstream and downstream of the bridge to redirect the channel thalweg closer to the center of the bridge as an erosion control measure in the channel; construct a temporary onsite low water crossing detour approximately 100 feet north of the existing bridge for use during construction activities; and relocate utilities if necessary.

9. **Surrounding land uses and setting: Briefly describe the project's surroundings:**
   The project is located in a rural setting with vacant fields on either side of Lost Hills Road. Other than the existing road and bridge, no other structures are located within or immediately adjacent to the Project Area.

10. **Other public agencies whose approval is required (g., permits, financing approval, or participation agreement.)**

    Caltrans
    The United States Army Corps of Engineers
    California Regional Water Quality Control Board

11. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?**

    Participating California Native American tribes have been notified of the project proposal and given the opportunity to enter consultation with the County. California Native American tribes that were contacted either did not respond or declined the opportunity to enter consultation.

NOTE: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- ☐ Aesthetics
- ☐ Agriculture and Forestry Resources
- ☐ Air Quality
- ☐ Biological Resources
- ☐ Cultural Resources
- ☐ Energy
- ☐ Geology/Soils
- ☐ Greenhouse Gas Emissions
- ☐ Hazards & Hazardous Materials
- ☐ Hydrology/Water Quality
- ☐ Land Use/Planning
- ☐ Mineral Resources
- ☐ Noise
- ☐ Population/Housing
- ☐ Public Services
- ☐ Recreation
- ☐ Transportation
- ☐ Tribal Cultural Resources
- ☐ Utilities/Service Systems
- ☐ Wildfire
- ☐ Mandatory Findings of Significance

DETERMINATION OF REQUIRED ENVIRONMENTAL DOCUMENT:

On the basis of this initial evaluation:

☐ I find that the proposed project **COULD NOT** have a significant effect on the environment. **A NEGATIVE DECLARATION WILL BE PREPARED**.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the Mitigation Measures described on the attached sheet have been added to the project. **A MITIGATED NEGATIVE DECLARATION WILL BE PREPARED.**

☐ I find the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required

☐ I find that as a result of the proposed project, no new effects could occur, or new Mitigation Measures would be required that have not been addressed within the scope of a previous Environmental Impact Report.

PERFORMED BY:

Thomas Kobayashi, Planner

Date: 3/19/20

REVIEWED BY:

M Mollring

Marianne Mollring, Senior Planner

Date: 3-19-20

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INITIAL STUDY
ENVIRONMENTAL CHECKLIST FORM
(Initial Study Application No. 7530)

The following checklist is used to determine if the proposed project could potentially have a significant effect on the environment. Explanations and information regarding each question follow the checklist.

1 = No Impact

2 = Less Than Significant Impact

3 = Less Than Significant Impact with Mitigation Incorporated

4 = Potentially Significant Impact

I. AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:

1 a) Have a substantial adverse effect on a scenic vista?

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

1 c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

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

II. AGRICULTURAL AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology in Forest Protocols adopted by the California Air Resources Board. Would the project:

1 a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

1 b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?

1 c) Conflict with existing zoning for forest land, timberland or timberland zoned Timberland Production?

1 d) Result in the loss of forest land or conversion of forest land to non-forest use?

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

III. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:

2 a) Conflict with or obstruct implementation of the applicable Air Quality Plan?

2 b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

2 c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under a Federal or State ambient air quality standard?

1 d) Expose sensitive receptors to substantial pollutant concentrations?

1 e) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

IV. BIOLOGICAL RESOURCES

Would the project:

3 a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

2 b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

3 c) Have a substantial adverse effect on state or federally-protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

3 d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

1 e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

1 f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan?

V. CULTURAL RESOURCES

Would the project:

3 a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

3 b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

3 c) Disturb any human remains, including those interred outside of formal cemeteries?

VI. ENERGY

Would the project:

3 a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

1 b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

VII. GEOLOGY AND SOILS

Would the project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

1 i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

2 ii) Strong seismic ground shaking?

2 iii) Seismic-related ground failure, including liquefaction?

2 iv) Landslides?

2 b) Result in substantial soil erosion or loss of topsoil?

2 c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

1 d) Be located on expansive soil as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

1 e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

1 f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

VIII. GREENHOUSE GAS EMISSIONS

Would the project:

2 a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

2 b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

3 a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

3 b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

1 c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

1 d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

1 e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

2 f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

1 g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

X. HYDROLOGY AND WATER QUALITY

Would the project:

3 a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

3 b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

3 c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on or off site?

3 i) Result in substantial erosion or siltation on- or off-site;

3 ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

3 iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

3 iv) Impede or redirect flood flows?

1 d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

2 e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

XI. LAND USE AND PLANNING

Would the project:

1 a) Physically divide an established community?

1 b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

XII. MINERAL RESOURCES

Would the project:

2 a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

2 b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local General Plan, Specific Plan or other land use plan?

XIII. NOISE

Would the project result in:

2 a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

2 b) Generation of excessive ground-borne vibration or ground-borne noise levels?

1 c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

XIV. POPULATION AND HOUSING

Would the project:

1 a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

1 b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

XV. PUBLIC SERVICES

Would the project:

1 a) Result in substantial adverse physical impacts associated with the provision of new or physically-altered governmental facilities, or the need for new or physically-altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

1 i) Fire protection?

1 ii) Police protection?

1 iii) Schools?

1 iv) Parks?

1 v) Other public facilities?

XVI. RECREATION

Would the project:

1 a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

1 b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

XVII. TRANSPORTATION

Would the project:

2 a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

2 b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

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

2 d) Result in inadequate emergency access?

XVIII. TRIBAL CULTURAL RESOURCES

Would the project:

2 a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

2 i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

2 ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

XIX. UTILITIES AND SERVICE SYSTEMS

Would the project:

1 a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

1 b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

1 c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

2 d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

2 e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

XX. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

2 a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

1 b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

1 c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

1 d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:

3 a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

1 b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)

1 c) Have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

Documents Referenced:

This Initial Study is referenced by the documents listed below. These documents are available for public review at the County of Fresno, Department of Public Works and Planning, Development Services and Capital Projects Division, 2220 Tulare Street, Suite A, Fresno, California (corner of M & Tulare Streets).

Fresno County General Plan, Policy Document and Final EIR
Fresno County Zoning Ordinance
Important Farmland 2014 Map, State Department of Conservation
Live Oak Associates Inc., Jurisdictional Waters Investigation, Biological Assessment, and Natural Environment Study
Haro Environmental, Hazardous Waste Initial Site Assessment
WRECO, Location Hydraulic Study
SWCA Environmental Consultants, Water Quality Memorandum
State Department of Conservation, Earthquake Zone Application
Cal Fire, State Responsibility Area Viewer

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County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

EVALUATION OF ENVIRONMENTAL IMPACTS

APPLICANT: Fresno County Department of Public Works and Planning, Design Division

APPLICATION NOS.: Initial Study Application No. 7530

DESCRIPTION: Replace the existing Jacalitos Creek Bridge, make associated improvements that would address scour problems at the bridge, and repair and/or stabilize the creek banks upstream and downstream of the bridge. Specifically the project would: replace the existing two-lane bridge with a new two-lane bridge built to current standards; taper widen the roadway approaches to current standards up to approximately 400 feet on either side of the bridge; shift the intersection of Lost Hills Avenue and Jacalitos Creek Road slightly to the east to accommodate new approach railed, work on Jacalitos Road would extend approximately 425 feet from the intersection; install rock slope protection, approximately 5 feet to 6 feet, up and downstream from the existing bridge to counteract high velocity flows; install a series of stream barbs along the southeasterly abutment and upstream and downstream of the bridge to redirect the channel thalweg closer to the center of the bridge as an erosion control measure in the channel; construct a temporary onsite low water crossing detour approximately 100 feet north of the existing bridge for use during construction activities; and relocate utilities if necessary.

LOCATION: The Jacalitos Creek Bridge is located on Lost Hills Avenue, just west of Jacalitos Creek Road. The project site is located approximately 2.05 miles southeast of the nearest city limits of the City of Coalinga. (SUP. DIST.: 4)

I. AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:

A. Have a substantial adverse effect on a scenic vista; or

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

C. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

FINDING: NO IMPACT:

The project will be conducted at grade or below grade and will not affect a scenic vista. The project will not damage any scenic resource including trees, rock outcroppings, and/or historic buildings and is not identified as a scenic road or highway. The project will not degrade the existing visual character or quality of the site and its surroundings nor will the quality of public views of the site and its surroundings degrade.

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

FINDING: NO IMPACT:

The project will not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

II. AGRICULTURAL AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology in Forest Protocols adopted by the California Air Resources Board. Would the project:

A. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use; or

B. Conflict with existing zoning for agricultural use, or a Williamson Act Contract?

FINDING: NO IMPACT:

According to the 2014 Fresno County Important Farmland Map, the project site is located in land designated as Grazing. The project will not convert prime or unique

farmlands or farmland of state-wide importance. The project site is an existing road, bridge, and creek and is not under Williamson Act Contract.

C. Conflict with existing zoning for forest land, timberland or timberland zoned Timberland Production; or

D. Result in the loss of forest land or conversion of forest land to non-forest use?

FINDING: NO IMPACT:

The project site is not located in forest land or timberland and the project will not result in loss of forest land nor will it conflict with existing zoning for forest land, timberland or timberland zoned Timberland Production.

E. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

FINDING: NO IMPACT:

The project will not result in the conversion of farmland or forest land into non-agricultural uses. The project site is an existing road, bridge, and creek.

III. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:

A. Conflict with or obstruct implementation of the applicable Air Quality Plan; or

B. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard; or

C. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under a Federal or State ambient air quality standard?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The San Joaquin Valley Air Pollution Control District (Air District) reviewed this project and did not identify any concerns with potential air quality standards violations or nonconformity with existing Air Quality Plans. Based on information provided to the Air District, Project specific annual emissions of criteria pollutants are not expected to exceed any of the Air District significance thresholds. The Air District also concluded that the proposed project would result in the reconstruction of any development project that is damaged or destroyed, or is retrofitted solely for seismic safety, and is rebuilt to

essentially the same use and intensity, therefore the proposed project is not subject to an Indirect Source Review (District Rule 9510).

D. Expose sensitive receptors to substantial pollutant concentrations; or

E. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

FINDING: NO IMPACT:

The demolition and construction of the bridge are not anticipated to release substantial pollutant concentrations or create objectionable odors. Further, the nearest sensitive receptor is a single-family residence approximately 800 feet south of the project site.

IV. BIOLOGICAL RESOURCES

Would the project:

A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

A Biological Assessment and Natural Environment Study was prepared by Live Oaks Associates, Inc. for the Jacalitos Creek Bridge Replacement project. Both documents were routed to the United States Fish and Wildlife Services (USFWS) and the California Department of Fish and Wildlife (CDFW). The proposed project will occur within an area of approximately 8.0 acres, hereafter referred to as the Biological Study Area or BSA. The project will result in approximately 1.9 acres of permanent impacts, much of which constitutes previously developed land that experiences regular disturbance from vehicle traffic and road shoulder maintenance.

The BSA provides potential habitat for seven (7) regionally-occurring special-status plant species. These comprise of the state and federally endangered California jewelflower (caulanthus Californicus), the federally endangered San Joaquin woollythread (Monolopia Congdonil), and the following five (5) CNPS-listed 1B species: Lemmon's Jewelflower (caulanthus Coulteri Var. Lemmonii), Hall's Tarplant (Deinandra Halliana), recurved larkspur (Delphinium recurvatum), pale-yellow layia (Layia heterotricha), and showy madia (madia radiata).

Protocol level surveys were conducted during the appropriate blooming periods for these species during the spring of 2016. A California jewelflower reference population was visited on February 23, 2016 in Kern County and was verified to be in bloom. On February 24, 2016, San Joaquin woollythread populations along Panoche Road in Fresno County were visited and confirmed to be in bloom. The site survey conducted

on February 25, 2016 identified and recorded all plant species occurring on the project site. Follow-up botanical surveys were conducted on March 18 and April 20 to further assure the blooming periods of all potentially occurring rare plant species would be captured. None of these special status plan species were observed. The project is not expected to produce direct or indirect effect on special status plants.

The BSA provides potential habitat for four (4) special status animal species potentially occurring on the project site. The California glossy snake (Arizona elegans occidentalis), loggerhead shrike (lanuis ludovicianus), American badger (Taxidea taxus), and the San Joaquin kit fox (vulpes macrotis mutica). Additionally, the BSA provides habitat for three (3) of eight (8) federally listed animal species occurring in the project vicinity. These species include the blunt-nosed leopard lizard (Gambelia sila), giant kangaroo rat (Dipodomys ingens), and the San Joaquin kit fox (vulpes macrotis mutica). Surveys of the BSA found no evidence of utilization, but the San Joaquin kit fox could potentially occur in the project area. A combination of preconstruction surveys, relocation, avoidance of active nests and potentially occupied burrows, construction minimization measures and environmental training of construction personnel are proposed to avoid and/or reduce impacts to these four (4) species.

Multiple surveys of the BSA were conducted during June, July, August, and September in 2015. Additionally, authorized small mammal trapping surveys for giant kangaroo rats occurred in May 2017. Surveys were conducted with transects spaced approximately 15 meters apart. Of the number of Federal and State species of special concern, the NES identified the San Joaquin kit fox, California Glossy Snake, the Loggerhead Shrike, and the American Badger as potentially being present in the project site, based on surveys and additional resources. The project site is identified as having habitat present for the San Joaquin kit fox, but were not observed during field surveys. The California Glossy Snake is labeled as present as a 2000 and 2004 collection of the species has been documented as occurring at the location of the West Lost Hills Road crossing of Jacalitos Creek. The Loggerhead Shrike was observed in the BSA during field surveys. The NES also states that the BSA contains marginal nesting habitat for this species. The American Badger was not observed during surveys of the site, but is identified as having habitat present in the BSA. Burrows of suitable size were not seen during surveys to indicate the presence of American Badger in the BSA. A documented occurrence of the species approximately 4 miles downstream of the BSA could indicate that the species outside the BSA could occur in the BSA prior to construction.

USFWS concurred with the determination that the project may affect, but is not likely to adversely affect the San Joaquin kit fox, blunt-nosed leopard lizard, and giant kangaroo rat. USFWS also stated that as part of the project, Caltrans staff and its contractors will implement Avoidance and Minimization Measures (AMM) and Best Management Practices prior to and during construction activities to minimize and avoid effects to sensitive species. The requirements will be included as mitigation measures.

CDFW has reviewed the project and supporting documents and have offered comments and recommendations to assist Fresno County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

The Biological Assessment and Natural Environment Study has also recommended additional measures to be included as mitigation measures related to construction activities which can be seen below.
Implementation of recommended Mitigation Measures from the USFWS, CDFW, and the Biological Assessment and Natural Environment Study by Live Oak Associates will reduce impacts to Federal and State species of special concern to a less than significant impact.

* ***Mitigation Measure(s)***

1. *The entire project limits shall be resurveyed for special-status plants by a qualified botanist following the "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities" and that reference populations be visited to ensure proper timing (CDFW 2018b).*

2. *The following Mitigation Measures shall be implemented to address impacts to special-status species during construction of the project.*

    a. *To avoid impact to any special status species that may occur within the entire project limits, all work shall occur during daylight hours and project-related vehicles shall observe a 20 mph speed limit within the entire project limits during construction, except on country roads and State and Federal highways.*

    b. *All excavated steep-walled holes or trenches more than 6 inches deep will be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Areas that are covered will be inspected daily, for as long as they are covered, to ensure that no special-status species have become trapped despite the presence of covers. Before such holes or trenches are filled, they should be thoroughly searched for trapped animals.*

    c. *All small diameter construction pipes or similar structures with a diameter of 4 inches or less that are stored within the entire project limits shall be thoroughly inspected for special-status species before the pipe is subsequently buried, capped, or otherwise used or moved in any way.*

    d. *In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape.*

    e. *All areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and re-vegetated to promote restoration of the area to pre-project conditions.*

f. *To prevent injury or mortality of special-status species by cats or dogs, no pets shall be permitted within the entire project limits during construction.*

g. *Use of rodenticide and herbicides in the entire project limits will be restricted. If it is later determined that the use of rodenticides and herbicides is needed, consultation with the USFWS must be reinitiated.*

h. *All food related trash items shall be disposed of in closed containers and removed at least once a week from the project limits.*

i. *No firearms shall be allowed on the project limits.*

j. *Retain a qualified biologist to conduct an employee education program. The program should consist of a brief presentation prepared by persons knowledgeable in blunt-nosed leopard lizard (BNLL), giant kangaroo rat and San Joaquin kit fox (SJKF) biology and legislative protection to explain endangered species concerns to contractors, their employees, and agency personnel involved in the project. The program should include the following: a description of these species and their habitat needs; a report of the occurrence of these species in the entire project limits; an explanation of the status of these species and their protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to these species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to program attendees and anyone else who may enter the project limits.*

3. *Conduct a preconstruction survey for SJKF, BNLL, and giant kangaroo rat. If any new dens or signs of a federally-listed species are discovered or potential dens show signs of use, avoidance of the dens will follow U.S. Fish and Wildlife (USFWS) Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox prior to ground disturbance. If a natal/pupping den is discovered within the project limits or within 200 feet of the project limits boundary, the USFWS shall be notified and, under no circumstances, should the den be disturbed or destroyed without an Incidental Take Statement*

4. *The following Mitigation Measures shall be implemented to address impacts to Blunt-Nosed Leopard Lizard (BNLL).*

    a. *A complete set of blunt-nose leopard lizard (BNLL) protocol surveys following California Department of Fish and Wildlife (CDFW) guidelines will be conducted within 1 year of the start of the project. BNLL detection during protocol level surveys warrants consultation with CDFW to discuss how to implement ground-disturbing activities to avoid take.*

    b. *To ensure BNLLs do not occupy open burrows during the time between the end of the protocol surveys and the start of project construction, the protocol surveys will be timed such that the last survey will coincide with the beginning of construction. This will be accomplished by conducting*

the juvenile surveys during August/September and the adult surveys from April 15 to July 15. The day following the last survey-day burrows will be collapsed/filled under the direction of a Level II BNLL biologist. Once those burrows are collapsed/filled, construction activities will immediately commence. Only those burrows that will be directly impacted by the project will be collapsed and no burrows will be collapsed if any BNLL is observed during the protocol surveys or at any other time prior to the start of the project.

5. *The following Mitigation Measure shall be implemented to address impacts to San Joaquin Kit Fox (SJKF).*

    a. *SJKF detection warrants consultation with CDFW to discuss how to avoid take, or if avoidance is not feasible, to acquire an ITP prior to ground-disturbing activities, pursuant to Fish and Game code Section 2081 (b).*

6. *The following Mitigation Measures shall be implemented to address impacts to San Joaquin Antelope Squirrel.*

    a. *SJAS detection warrants consultation with CDFW to discuss how to avoid take, or if avoidance is not feasible, to acquire an Incidental Take Permit (ITP) prior to ground-disturbing activities, pursuant to Fish and Game Code Section 2081 (b).*

    b. *If suitable habitat is present and surveys or trapping are not feasible, maintenance of a 50-foot minimum no-disturbance buffer around all small mammal burrows of suitable size for SJAS shall be implemented.*

7. *The following Mitigation Measures shall be implemented to address impacts to California Glossy Snake.*

    a. *California glossy snake detection during preconstruction surveys warrants consultation with CDFW to discuss how to implement ground-disturbing activities and avoid take. However, CDFW recommends that if any California glossy snake are discovered at a site immediately prior to or during Project activities they be allowed to move out of the area on their own volition. If this is not feasible, CDFW recommends that a qualified biologist who holds a Scientific Collecting Permit for the species, capture and relocate the snake(s) out of harm's way to the nearest suitable habitat immediately adjacent to the project site. Avoidance of refuge habitat (i.e. burrows) whenever possible is encouraged via delineation and observing a 50-foot no-disturbance buffer around burrows.*

8. *The following Mitigation Measures shall be implemented to address impacts to American badger.*

a. *Avoidance whenever possible is encouraged via delineation and observation of a 50-foot no-disturbance buffer around dens until it is determined through non-invasive means that individuals occupying the den have dispersed.*

9. *The following Mitigation Measures shall be implemented to address impacts to burrowing owl.*

    a. *Reassess the presence/absence of burrowing owl (BUOW) by having a qualified biologist conduct surveys following the California Burrowing Owl Consortium's "Burrowing Owl Survey Protocol and Mitigation Guidelines" (CBOC 1993) and CDFW's Staff Report on "Burrowing Owl Mitigation" (CDFG 2012).*

    b. *Should a BUOW be detected, CDFW recommends no-disturbance buffers, as outlined in the "Staff Report on Burrowing Owl Mitigation" (CDFG 2012), be implemented prior to and during any ground-disturbing activities.*

    c. *If necessary, burrow exclusion shall be conducted by qualified biologists and only during the non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance.*

B. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

FINDING: LESS THAN SIGNIFICANT IMPACT:

Based on produced studies and surveys, the bottom and lower sides of the channel below the ordinary high water mark were sparsely vegetated with mostly native upland forbs and shrubs. The bridge is existing and the replacement bridge will not expand or change from the existing location. Improvements will be made to the creek to direct the thalweg towards the center of the bridge to control erosion and also install rock slope protection to counteract high velocity flows. Based on studies and surveys conducted for this project, and the existing nature of the project site along with the project scope, it will not significantly impact any riparian habitat or sensitive natural community identified in local or regional plans, policies, or regulations or identified by the California Department of Fish and Wildlife or The U.S. Fish and Wildlife Service.

C. Have a substantial adverse effect on state or federally-protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; or

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

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

The National Wetland Inventory has identified Jacalitos Creek as a Riverine system, intermittent subsystem, streambed class, and temporary flooded water regime. Minor alterations will be made to the creek to bring the creek's thalweg towards the center of the bridge and install rock slope protection to counteract high velocity flows. The creek flow will remain unchanged. Alterations to the creek will not have a substantial adverse effect on this wetland.

Project site surveys did not identify any trees for removal. Surveys did note that a small population of Mexican free-tailed bats (Tadarida brasiliensis) were observed under the existing onsite bridge during spring and summer surveys. Preconstruction surveys and appropriate exclusion measures are proposed to avoid construction related bat mortality. Mitigation measures will be incorporated to avoid any bat mortalities with regards to this project. The project will not interfere substantially with the movement of any native residence or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

The BSA provides potential nesting habitat for a number of migratory birds that are protected under the federal Migratory Bird Treaty Act. Preconstruction surveys prior to any work occurring during the nesting season and avoidance of active nests are proposed to minimize project effects on nesting birds.

* ***Mitigation Measure(s)***

1. *The following Mitigation Measures shall be implemented to address impacts to nesting birds.*

    a. *If construction activities will occur between February 1 and August 31, a qualified wildlife biologist shall conduct pre-activity surveys for active nests of a special-status bird no more than 10 days prior to the start of ground disturbance to maximize probability that nests that could potentially be impacted are detected. If detected, a qualified biologist shall continuously monitor nests to detect behavioral changes resulting from the project. CDFW shall be consulted for additional avoidance and minimization measures.*

    b. *If continuous monitoring of identified nests by a qualified wildlife biologist is not feasible, a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the nesting season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. CDFW shall be consulted if a Variance from the aforementioned no-disturbance buffer is sought.*

2. *The following Mitigation Measures shall be implemented to address impacts to Loggerhead Shrikes.*

    a. *In order to avoid impacts to loggerhead shrikes, initial ground disturbance activities such as grading, scraping, material stockpiling, etc. will be initiated between September 1 and January 31. This will ensure that Project activities potentially impacting nesting shrikes will not coincide with their nesting season (February 1 to August 31). If ground disturbance must be initiated between February 1 and August 31, a qualified biologist will conduct a preconstruction survey for active shrike nests within 15 days of the onset of these activities. Should any active shrike nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.*

3. *The following Mitigation Measures shall be implemented to address impacts to roosting bats.*

    a. *Bats shall not be disturbed without specific notice to and consultation with CDFW. If a bat roost is detected, CDFW advises a minimum 50-foot no-disturbance buffer during activity, or postponing activity until repeat surveying documents that bats no longer use the roost. If avoidance or postponement is not feasible, a request for a reduced buffer or a Bat Eviction Plan shall be submitted to CDFW for written approval prior to implementation.*

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

F. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan?

FINDING: NO IMPACT

The project will not conflict with any local policies or ordinances protecting biological resources. No Critical Habitat for any special status species was identified. The project will not conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

V. CULTURAL RESOURCES

Would the project:

A. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5; or

B. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5; or

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

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

An Archaeological and Historical Survey Report was prepared by Applied EarthWorks, Inc. for this project. CA-FRE-3761 had been identified as occurring in the project site. The Office of Historic Preservation, State Historic Preservation Officer was contacted in an attempt to concur a determination that the project will not affect historical resources identified in the area. The report determined that CA-FRE-3761 is ineligible for listing on the National Register of Historic Places (NRHP). The State Historic Preservation Officer concurred with the determination that CA-FRE-3761 is ineligible for listing in the NRHP. The Archaeological Survey Report includes a records search at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System; a cursory review of materials from historical archives; Native American consultation; and pedestrian surveys of an approximately 29.4-acre study area surrounding the existing bridge. Native American tribes under Assembly Bill 52 were also notified of the project proposal. No Native American tribes has requested consultation within the thirty (30) day period. Surveys conducted within the project area identified three cultural resources. CA-FRE-3761 (sparse lithic scatter) was identified with three artifacts identified. An isolated artifact (P-10-006514) is also in the project area found along the northwestern bank of Jacalitos Creek. P-10-006514 was located 70 meters southwest of the sparse lithic scatter (CA-FRE-3761) and it is possible that the isolated artifact is associated with CA-FRE-3761. One built environment cultural resources, Jacalitos Creek Bridge (42C0078) occurs within the project area and is listed in the Caltrans Historic Bridge Inventory as Category 5 and is not eligible for the NRHP. Although artifacts were discovered in the project area, the volume, spacing, proximity to the creek, and evidence of human disturbance in the area, there will be a less than significant impact. As a mitigation measure and standard practice of Caltrans, if previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

* ***Mitigation Measure(s)***

1. *In the event that cultural resources are unearthed during ground-disturbing activities, all work shall be halted in the area of the find. An archeologist shall be called to evaluate the findings and make any necessary mitigation recommendations. If human remains are unearthed during ground-disturbing activities, no further disturbance is to occur until the Fresno County Sheriff-Coroner has made the necessary findings as to origin and disposition. All normal evidence procedures should be followed by photos, reports, video, etc. If such remains are determined to be Native American, the Sherriff-Coroner must notify the Native American*

Commission within 24 hours. Additional archaeological surveys will be needed if project limits are extended beyond the present survey limits.

VI. ENERGY

Would the project:

A. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

A Mitigation Measure will be incorporated to reduce the potential for wasteful, inefficient or unnecessary consumption of energy resources during project construction and operation. Idling of onsite equipment and vehicles will be avoided to the most possible extent. With the Mitigation Measure incorporated during the construction of the project, staff believes that the energy impact will be less than significant.

* ***Mitigation Measure(s)***

1. *Idling of onsite equipment and vehicles will be avoided to the most possible extent.*

B. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

FINDING: NO IMPACT:

The project will not conflict or obstruct a state of local plan for renewable energy or energy efficiency.

VII. GEOLOGY AND SOILS

Would the project:

A. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

FINDING: NO IMPACT:

The project site is located in southwest Fresno County approximately 2.05 miles southeast of the city limits of the City of Coalinga. According to the California Hazards Zone Application (EQ Zapp) administered by the California Department of Conservation,

the project site is not located near a rupture of a known earthquake or earthquake hazard zone.

2. Strong seismic ground shaking?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The project site is located in an area that has peak horizontal ground acceleration of 40-60 percent per Figure 9-5 in the Fresno County General Plan Background Report (FCGPBR), with a 10 percent chance of exceeding that percentage in 50 years. The new bridge will be built to current building code standards and no agencies expressed concerns specific to seismic hazards.

3. Seismic-related ground failure, including liquefaction?

FINDING: LESS THAN SIGNIFICANT IMPACT:

According to Figure 9-5 of the FCGPBR, the project site is located in an area that has peak horizontal ground acceleration of 40-60 percent. Although the project site is located in the identified area, no known earthquake hazard zone is near the project area and no agency expressed concern with seismic-related ground failure.

4. Landslides?

FINDING: LESS THAN SIGNIFICANT IMPACT:

According to the Figure 9-6 of the FCGPBR, the project site is in or near an area identified as a Moderate Landslide Area. The project area is mostly flat with some foothills near the site. No steep slopes are located near the project site. No reviewing agencies expressed concerns regarding landslides.

B. Result in substantial soil erosion or loss of topsoil?

FINDING: LESS THAN SIGNIFICANT IMPACT:

According to Figure 7-4 of the FCGPBR, the project site is located in or near an Erosion Hazard area. Although the project site is located in or near an erosion hazard area, the project itself will minimize erosion hazards by application of stream barbs and rock slopes. The Development Services and Capital Projects Department, Development Engineering Unit did not express any concerns with regards to erosion or loss of topsoil.

C. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

FINDING: LESS THAN SIGNIFICANT IMPACT:

According to Figure 9-6 of the FCGPBR, the project site is located in or near an area designated as a Moderate Landslide Hazard. Although the project site is located in or near this identified area, site photos show that the project site is relatively flat with foothills nearby. Additionally, Figure 7-2 of the FCGPBR shows that the project site is not shown as having an over 30 percent slope.

D. Be located on expansive soil as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

FINDING: NO IMPACT:

According to Figure 7-1 of the FCGPBR, the project site is not located in an area identified as having expansive soils.

E. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

FINDING: NO IMPACT:

The project does not propose to install a septic tank or alternative disposal system.

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

FINDING: NO IMPACT:

The project will not directly or indirectly destroy a unique paleontological resources or unique geologic feature as no unique paleontological resources or unique geologic feature was observed during initial site surveys.

VIII. GREENHOUSE GAS EMISSIONS

Would the project:

A. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

B. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

FINDING: LESS THAN SIGNIFICANT IMPACT:

A Greenhouse Gas Emissions Analysis dated December 17, 2019 has been completed by LSA for the project proposal. LSA states that they utilized the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, Version 9.0.0 (RoadMod) to estimate the project's GHG emissions. The analysis examines greenhouse gas (GHG) emissions produced from construction and operation

of the proposed project. GHG emissions produced from operation of construction equipment and from worker and materials supply vendor vehicles, which typically use fossil-based fuels to operate. The analysis states that based on the RoadMod analysis, construction of the proposed project would generate a total of approximately 623.98 metric tons of CO_2e (Carbon Dioxide Emissions). An analysis of operational GHG emissions concluded that based on the project of an existing two-lane bridge being replaced with a new two-lane bridge, after construction, roadway operations would be expected to return to pre-construction levels. Therefore, the project would not result in operational GHG emissions. The analysis concludes that the project would not result in substantial GHG emissions during construction of operation of the project. Additionally, the project would not conflict with the goals and objectives of the SJVAPCD's Climate Change Action Plan (CCAP) of any other State or regional plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions.

As stated in the analysis, GHG emissions will remain unchanged from project operation. GHG emissions produced from construction of the project is estimated to be 623.98 metric tons of CO_2e. Under SJVAPCD guidelines for GHG emissions, a quantitative analysis of GHG emissions from the operation of the proposed use would be subject to a 29% reduction compared to Business as Usual (BAU) levels from the 2004-2009 baseline period. Additionally, there are no adopted thresholds or standards for GHG emissions resulting from construction of the project to determine if the construction emissions would result in a significant impacts. The Greenhouse Gas Emissions Analysis was routed to the San Joaquin Valley Air Pollution Control District (SJVAPCD) for review and comment on the project's consistency with regional standards. No concerns were expressed by the SJVAPCD to indicate that the construction and operation of the project would result in significant impacts. Therefore, as operation of the project will not result in a change in GHG emissions, and considering the temporary emissions brought on by the construction of the project and that no concerns were expressed by the SJVAPCD on construction emissions, the project's GHG emissions will have a less than significant impact and does not conflict with regional or state emission standards.

VIII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

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

B. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

A Hazardous Waste Initial Site Assessment report was conducted by Haro Environmental Inc. for the proposed project. A field visit of the project area was conducted by a Haro Environmental representative on July 2, 2015. During the field

visit, Haro Environmental did not observe hazardous materials or petroleum products under conditions indicative of a release to the environment, or under conditions that pose a material threat of a future release to the environment. No hazardous materials or petroleum products were observed at off-site, nearby properties under current conditions that would pose a significant environmental concern to the project area. Based on data gathered and reviewed, Haro Environmental did not identify recognized environmental conditions that have impacted or pose a significant environmental threat to the project area with the exception that the concrete used to construct Jacalitos Bridge may contain asbestos and that the paint used on the railing may contain lead. Due to those concerns based on the findings of the Initial Site Assessment, Haro Environmental provided the following recommendations: 1) An asbestos survey should be performed to determine whether or not the concrete will require special handling and disposal; 2) a lead-based paint survey should be performed to determine whether or not the railing paint contains elevated concentrations of lead which would require special handling and disposal; and 3) testing and removal requirements for yellow traffic striping and pavement marking materials should be performed in accordance with Caltrans Construction Policy Bulletin 99-2 (Caltrans Construction Manual Chapter 7-107E; Caltrans, 2014a). These recommendations will be included as mitigation measures. Haro Environmental also provided a general recommendation stating that for all projects proposing excavation, grading, or pile driving, the potential exists for unknown hazardous materials contamination to be encountered during construction of the proposed project. Therefore, for any previously unknown hazardous waste material encountered as part of construction of the proposed project, the procedures outlined in Appendix E (Caltrans Unknown Hazards Procedure) shall be followed (Caltrans 2002). This recommendation will be included as a project note.

* ***Mitigation Measure(s)***

1. *An asbestos survey should be performed to determine whether or not the concrete will require special handling and disposal.*

2. *A lead-based paint survey should be performed to determine whether or not the railing paint contains elevated concentrations of lead which would require special handling and disposal.*

3. *Testing and removal requirements for yellow traffic striping and pavement marked materials should be performed in accordance with Caltrans Construction Policy Bulletin 99-2 (Caltrans Construction Manual Chapter 7-107E; Caltrans, 2014a).*

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

FINDING: NO IMPACT:

The project site is not located within one quarter-mile of a school.

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

FINDING: NO IMPACT:

The Hazardous Waste Initial Site Assessment performed by Haro Environmental, Inc. stated that a regulatory agency database search performed by Environmental Database Resources (EDR) indicated that the project area was not listed in any databases searched, and no nearby properties were listed. A review of historic aerial photographs, topographic maps, and city directory listings indicated the project area was modified with the construction of Lost Hills Road as of 1912 and the construction of the Jacalitos Creek Bridge by 1950. Vacant, undeveloped land has surrounded the project area since at least 1912. Based on the assessment, the project site is not located on a hazardous materials site and would not create a significant hazard to the public or the environment.

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

FINDING: NO IMPACT:

The project site is not located in the vicinity of a private airstrip, public airport, or public use airport.

F. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

FINDING: LESS THAN SIGNIFICANT IMPACT:

During the construction of the replacement bridge and stream improvements, a temporary onsite low water crossing detour approximately one hundred (100) feet north of the project area will be in place to serve public and emergency response vehicles. The impact will be less than significant as vehicles will still be able to utilize the detour in the general vicinity of Jacalitos Creek Road and Lost Hills Avenue instead of rerouting traffic away from the project site and increasing traffic on other roadways.

G. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

FINDING: NO IMPACT:

The project area is located in a mostly vacant area with the nearest residence being approximately 800 feet south of the project area. The replacement of the bridge and erosion measures being applied to the stream will not bring additional risk from wildfires to people or structures.

X. HYDROLOGY AND WATER QUALITY

Would the project:

A. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality; or

B. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

The United States Army Corps of Engineers (ACOE) has reviewed the project proposal and the Jacalitos Creek Bridge Potential Waters of the U.S. prepared by Live Oak Associates Inc. (LOA). The ACOE concurred with the document prepared by LOA that approximately 2.06 acres of the other water bodies present within the survey area are potential waters of the United States regulated under Section 404 of the Clean Water Act. Due to the potential water bodies being under the jurisdiction of the United States, work should not start unless a permit authorizing the activity is obtained from the Department of the Army.

SWCA Environmental Consultants prepared a Water Quality Memorandum (WQM) for the proposed project. The purposed of the memorandum was to describe the existing water resources, determine if the potential impacts of the project on the water sources would be significant based on preliminary project information, and identify feasible mitigation measures to address any potentially significant impacts. The WQM states that potential effects of the proposed project related to water quality are limited to construction-related impacts such as erosion, sedimentation, and the potential release of hazardous construction-related materials.

Grading activities could result in sedimentation of Jacalitos Creek if water is present; however it is unlikely that water will be present considering that construction activities are expected to occur during the dry season (July 1 through October 15).

The proposed project could introduce potential sources of pollution in the form of improper use of fuels, oils, and other construction-related hazardous waste materials, which could pose a threat to surface of groundwater quality. The County would adhere to erosion control standards and hazardous materials spill pollution and prevention standards to ensure the proposed project does not impact the water quality of the Jacalitos Creek or groundwater resources.

Increased concentrations of pollutant discharge from the road surface during storm events could impact local water bodies if they are transmitted to Jacalitos Creek when water is present. Additionally, uncontrolled water flow from the surface of the roadway could cause erosion that could alter stream geomorphology and cause gullies. The WQM determined that based on the project design, permitting, site-specific conditions of

this project and implementation of proposed mitigation, the potential long-term impacts to water quality are not considered adverse.

The proposed project will be required to comply with a National Pollutant Discharge Elimination System (NPDES) General Construction Permit to discharge stormwater associated with construction activities. Additionally, the project would be required to prepare a stormwater pollution prevention plan (SWPPP) that address the quality and quantity of stormwater runoff generated on-site during the construction and operation of the project and incorporates temporary best management practices (BMP) into the project. Implementation of temporary BMPs would minimize impacts to water quality that could occur as a result of construction of the proposed project.

The WQM states that construction activities associated with the proposed project such as trenching and excavation could disturb the groundwater table, rendering groundwater exposed to potential contamination. Implementation of temporary BMPs would minimize potential impacts of the project from contributing to the impairment of groundwater.

The WQM identified that the proposed project would be required to comply with Title III and Title IV of the Clean Water Act (CWA) and NPDES along with compliance with the NPDES General Construction Permits. During Construction, water pollution control measures shall conform to the requirements in the SWPPP, the Water Pollution Control Program Preparation Manual, and the Construction Site Best Management Practices Manual. BMPs fall into four categories as identified by the Caltrans Statewide Stormwater Management Plan: Design Pollution Prevention, Treatment, Construction Site, and Maintenance. Prior to grading, an appropriate drainage control plan that includes control measures for handling construction and operation onsite and offsite runoff and drainage in a manner acceptable to the Central Valley Regional Water Quality Control Board (RWQCB), Caltrans, and the County. In addition to the standard BMPs required for compliance with state and local standards the following measure shall be incorporated to further minimize the potential impacts to water quality associated with the project: 1) Prior to construction, the County shall comply with Section 404 of the Clean Water Act, in coordination with the United States Army Corps of Engineers, Section 401 of the Clean Water Act, in coordination with the Regional Water Quality Control Board, and Fish and Game Code, Section 1602, in coordination with the California Department of Fish and Wildlife for Project-related impacts that will occur in areas under the jurisdiction of these regulatory agencies. 2) Prior to commencement of construction activities, the contractor shall prepare a hazardous material spill prevention control and countermeasure plan that will minimize the potential for and the effects of the release of toxic materials during construction of the proposed project. The plan shall include storage and containment procedures to prevent and respond to spills and shall identify the appropriate parties responsible for monitoring the spill response. During construction of the proposed project, any spills that occur shall be remedied immediately according to the guidance provided in the spill prevention control and countermeasure plan. The County and Caltrans shall review and approve the spill prevention control and countermeasure plan prior to allowing construction to being.

* ***Mitigation Measure(s)***

1. *Prior to construction, the County shall comply with Section 404 of the Clean Water Act in coordination with the United States Army Corps of Engineers, Section 401 of the Clean Water Act, in coordination with the Regional Water Quality Control Board, and Fish and Game Code, Section 1602, in coordination with the California Department of Fish and Wildlife for Project-related impacts that will occur in areas under the jurisdiction of the regulatory agencies.*

2. *Prior to commencement of construction activities, the contractor shall prepare a hazardous material spill prevention control and countermeasure plan that will minimize the potential for and the effects of the release of toxic materials during construction of the proposed project. The plan shall include storage and containment procedures to prevent and respond to spills and shall identify the appropriate parties responsible for monitoring the spill response. During construction of the proposed project, any spills that occur shall be remedied immediately according to the guidance provided in the spill prevention control and countermeasure plan. The County and Caltrans shall review and approve the spill prevention control and countermeasure plan prior to allowing construction to being.*

C. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on or off site?

1. Result in substantial erosion or siltation on- or off-site;

2. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

3. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

4. Impede or redirect flood flows?

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

Impacts to the course of the creek including erosion, drainage patterns and run-off were discussed above in Section A and B of IX. Hydrology and Water Quality. Additionally, the project is proposing to install stream barbs and rock slopes to control erosion throughout the project site. The stream barbs will direct water flow towards to center of the creek to control erosion. The Water Quality Memorandum also recommended a mitigation measure that once construction activities are complete, disturbed areas shall be re-vegetated with similar plant vegetation, pre-approved by the County, to stabilize soils and establish a natural system for erosion control. In addition, a 5-foot vegetate buffer consisting of native upland plant species should be planted to treat roadway runoff before it enters the channel below. Sediment control, potentially consisting of fiber rolls, may also be implemented.

* ***Mitigation Measure(s)***

1. *Once construction activities are complete, disturbed areas shall be re-vegetated with similar plant vegetation, pre-approved by the County, to stabilize soils and establish a natural system for erosion control. In addition, a 5-foot vegetative buffer consisting of native upland plant species should be planted to treat roadway runoff before it enters the channel below. Sediment control, potentially consisting of fiber rolls, may also be implemented.*

D. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

FINDING: NO IMPACT:

According to Figure 9-8 of the FCGPBR, the project is not located in a Dam Failure Flood Inundation Area. The project site is not located near a large body of water that would be associated with a seiche or tsunami. According to Figure 9-6, the project site may be located on or near a moderate landslide hazard area. Although it is located on or near this identified area, the project site is located in a mostly flat area with foothills near the project site. No steep slopes are identified near the project site.

E. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

FINDING: LESS THAN SIGNIFICANT IMPACT:

See Section A and B of X. Hydrology and Water Quality. The project will be subject to local, state, and federal policies and standards that will apply to the project. The project will not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

XI. LAND USE AND PLANNING

Would the project:

A. Physically divide an established community?

FINDING: NO IMPACT:

The project will not physically divide an established community.

B. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

FINDING: NO IMPACT:

The Development Services and Capital Projects Division, Policy Planning Unit reviewed the subject application and determined that the project does not affect the General Plan or Williamson Act Program. All other reviewing agencies did not express any concerns with regards to conflicts with a Land Use Plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

XII. MINERAL RESOURCES

Would the project:

A. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or

B. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local General Plan, Specific Plan or other land use plan?

FINDING: LESS THAN SIGNIFICANT IMPACT:

According to Figure 7-7 of the FCGPBR, the project site is located in an identified Mineral Resource Location. The project site is located in an identified Oil Field and is near an identified Sand and Gravel area. Although the project is located on and near these identified resources, the project site will mostly be confined to an already improved and disturbed site. The project will be confined to the existing site and most of the additional land being utilized outside of the existing bridge and road will be temporary and purposed for detouring road traffic. Therefore, the project will not result in the loss of availability of a known mineral resource.

XIII. NOISE

Would the project result in:

A. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; or

B. Generation of excessive ground-borne vibration or ground-borne noise levels?

FINDING: LESS THAN SIGNIFICANT IMPACT:

Temporary increases in noise levels will be expected during the construction phase of the project, with the construction work occurring during daylight hours. The closest residence is approximately 800 feet south of the project site. It is determined that due to the temporary aspect of construction work and the proximity of the project site to the nearest residence, the project will have a less than significant impact.

C. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public

use airport, would the project expose people residing or working in the project area to excessive noise levels?

FINDING: NO IMPACT:

The project site is not located in the vicinity of a public airport or private airstrip.

XIV. POPULATION AND HOUSING

Would the project:

A. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); or

B. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

FINDING: NO IMPACT:

The project will not induce a substantial population growth directly or indirectly as the scope of the project is replacing an existing bridge and applying improvements to the stream, with no expansion of the existing facilities proposed. The project will not displace housing or people.

XV. PUBLIC SERVICES

Would the project:

A. Result in substantial adverse physical impacts associated with the provision of new or physically-altered governmental facilities, or the need for new or physically-altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services?

1. Fire protection;

FINDING: NO IMPACT:

The Fresno County Fire Protection District (FCFPD) has reviewed the subject application and did not express any concerns.

2. Police protection;

3. Schools;

4. Parks; or

5. Other public facilities?

FINDING: NO IMPACT:

Reviewing agencies did not express any concerns with regards to public services.

XVI. RECREATION

Would the project:

A. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or

B. Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

FINDING: NO IMPACT:

The project will not increase the use of existing neighborhood and regional parks or other recreational facilities. The project will not induce the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

XVI. TRANSPORTATION

Would the project:

A. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities; or

B. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b); or

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

FINDING: LESS THAN SIGNIFICANT IMPACT:

The project is not anticipated to modify the amount of traffic in the vicinity of the site. There are minor changes to the existing roadway and intersection to improve the safety standards of the site. Therefore, it is anticipated that this project would have a minor beneficial impact, if any, on the performance of the circulation system, level of service standards, and traffic hazards.

D. Result in inadequate emergency access?

FINDING: LESS THAN SIGNIFICANT IMPACT:

A temporary low water crossing detour will be constructed one hundred (100) feet north of the project site for use during the construction activities for public and emergency vehicles. The detour will have a less than significant impact as the use will be temporary while the bridge replacement is underway.

XVIII. TRIBAL CULTURAL RESOURCES

Would the project:

A. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

1. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

FINDING: LESS THAN SIGNIFICANT IMPACT

See discussion in Section A, B, and C, of V. Cultural Resources. As per Assembly Bill 52, the participating California Native American tribes were contacted and given the opportunity to enter consultation with the County with regards to the project proposal. No Native American Tribe expressed any concerns with regards to the proposal. The Archeological and Historical Survey Report prepared by Applied EarthWorks Inc. identified that the project site is ineligible for listing on the National Register of Historical Places.

XIX. UTILITIES AND SERVICE SYSTEMS

Would the project:

A. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects; or

B. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years; or

C. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

FINDING: NO IMPACT:

The bridge replacement project will require water supplies and wastewater treatment services only during construction and demolition. Outside of these activities, the bridge will be an unmanned part of the circulation system. Therefore, the project will not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities which might cause a significant environmental effect.

D. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or

E. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

FINDING: LESS THAN SIGNIFICANT:

There is sufficient landfill capacity in Fresno County to accommodate construction and demolition debris from this project. The Hazardous Waste Initial Site Assessment performed by Haro Environmental included recommendations into the project to address the disposal of any hazardous materials including lead based paint and construction materials containing asbestos. See discussion VIII Hazards and Hazardous Materials, Section A and B. The project will comply with federal, state and local statues and regulations related to solid waste and if identified, any hazardous solid waste.

XX. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

A. Substantially impair an adopted emergency response plan or emergency evacuation plan, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The project site is located near a state responsibility area and is classified as a moderate fire hazard zone. During the construction of the project, a temporary detour approximately one hundred (100) feet north of the project site will be made available to the public and emergency vehicles. The detour will not substantially impair an adopted emergency response plan or emergency evacuation plan or telecommunication facilities. The detour is temporary and will have a less than significant impact.

B. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire; or

C. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

FINDING: NO IMPACT:

The Fresno County Fire Protection District has reviewed the project proposal and did not express any concerns with regards to slope, prevailing winds or other factors that would exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildlife. Also, no concerns were received in regard to the requirement for the installation or maintenance of associated infrastructure that may exacerbate fire risk or may result in temporary or ongoing impacts to the environment. After construction of the project is completed, it will be an unmanned roadway, thus there are no concerns to project occupants resulting from a wildfire.

D. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

FINDING: NO IMPACT:

The project site is located on flat land with foothills being located adjacent to the site. According to the FCGPBR, the project site is not located near any identified slope of thirty (30) percent or more. Therefore, the project will not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability or drainage changes.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:

A. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

This project has the potential to degrade the quality of the environment, reduce the habitat of fish and/or wildlife species, and to threaten a local plant community and

potentially affect cultural resources in the project site. Adherence to mitigation measures which will reduce potential impacts on biological resources, cultural resources, energy, hazards and hazardous materials and hydrology and water quality, to less than significant impacts.

* ***Mitigation Measure(s)***

1. *See Section IV. Biological Resources A. and D.*

2. *See Section V. Cultural Resources A. through C.*

3. *See Section VI. Energy A.*

4. *Section VIII. Hazards and Hazardous Materials A. and B.*

5. *Section IX. Hydrology and Water Quality A. through C.*

B. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects); or

C. Have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

FINDING: NO IMPACT:

The bridge replacement project will not have any cumulatively considerable impacts or adverse impacts on human beings because the proposed project is substantially similar to the existing use. Minor benefits including the bridge built to current design standards, increasing safety measures to the roadway and erosion control measures to the creek will improve safety in and around the project site.

CONCLUSION/SUMMARY

Based upon the Initial Study No. 7530 prepared for the Jacalitos Creek Bridge Replacement Project, staff has concluded that the project will not have a significant effect on the environment. It has been determined that there would be no impacts to Aesthetics, Agricultural and Forestry Resources, Land Use Planning, Population and Housing, Public Services and Recreation.

Potential impacts related to Air Quality, Geology and Soils, Greenhouse Gas Emissions, Mineral Resources, Noise, Transportation, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire have been determined to be less than significant. Potential impacts relating to Biological Resources, Cultural Resources, Energy, Hazards and Hazardous Materials, and Hydrology and Water Quality have determined to be less than significant with compliance with the listed Mitigation Measures.

A Mitigated Negative Declaration is recommended and is subject to approval by the decision-making body. The Initial Study is available for review at 2220 Tulare Street, Suite A, street level, located on the southwest corner of Tulare and "M" Street, Fresno, California.

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Mitigation Monitoring and Reporting Program
Initial Study Application No. 7530
(Including Conditions of Approval and Project Notes)

Mitigation Measures					
Mitigation Measure No.*	**Impact**	**Mitigation Measure Language**	**Implementation Responsibility**	**Monitoring Responsibility**	**Time Span**
1..	Biological Resources	The entire project limits shall be resurveyed for special-status plants by a qualified botanist following the "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities" and that reference populations be visited to ensure proper timing (CDFW 2018b).	Applicant	Fresno County Design Division PW&P	Prior to construction
2.	Biological Resources	The following Mitigation Measures shall be implemented to address impacts to special-status species during construction of the project. a. To avoid impact to any special status species that may occur within the entire project limits, all work shall occur during daylight hours and project-related vehicles shall observe a 20 mph speed limit within the entire project limits during construction, except on county roads and State and Federal highways. b. All excavated steep-walled holes or trenches more than 6 inches deep will be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Areas that are covered will be inspected daily, for as long as they are covered, to ensure that no special-status species have become trapped despite the presence of covers. Before such holes or trenches are filled, they should be thoroughly searched for trapped animals. c. All small diameter construction pipes or similar structures with diameter of 4 inches or less that are stored within the entire project limits shall be thoroughly inspected for special-status species before the pipe is subsequently buried, capped, or otherwise used or moved in any way.	Applicant	Fresno County Design and Construction Divisions PW&P	Ongoing/Prior to construction

		d. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape. e. All areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and re-vegetated to promote restoration of the area to pre-project conditions. f. To prevent injury or mortality of special-status species by cats or dogs, no pets shall be permitted within the entire project limits during construction. g. Use of rodenticide and herbicides in the entire project limits will be restricted. If it is later determined that the use of rodenticide and herbicide is needed, consultations with the United States Fish and Wildlife Services must be reinitiated. h. All food related trash items shall be disposed of in closed containers and removed at least once a week from the project limits. i. No firearms shall be allowed on the project limits. j. Retain a qualified biologist to conduct an employee education program. The program should consist of a brief presentation prepared by persons knowledgeable in blunt-nosed leopard lizard (BNLL), giant kangaroo rat and San Joaquin kit fox (SJKF) biology and legislative protection to explain endangered species concerns to contractors, their employees, and agency personnel involved in the project. The program should include the following: a description of these species and their habitat needs; a report of the occurrence of these species in the entire project limits; an explanation of the status of these species and their protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to these species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to program attendees and anyone else who may enter the project limits.			

3.	Biological Resources	Conduct a preconstruction survey for SJKF, BNLL, and giant kangaroo rat. If any new dens or signs of a federally-listed species are discovered or potential dens show signs of use, avoidance of the dens will follow U.S Fish and Wildlife Services Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox prior to ground disturbance. If a natal/pupping den is discovered within the project limits or within 200 feet of the project limits boundary, the USFWS shall be notified and, under no circumstances, should the den be disturbed or destroyed without an Incidental Take Statement.	Applicant	Fresno County Design Division PW&P	Prior to construction
4.	Biological Resources	The following Mitigation Measures shall be implemented to address impacts to Blunt-Nose Leopard Lizard (BNLL). a. A complete set of blunt-nosed Leopard Lizard protocol surveys following California Department of Fish and Wildlife (CDFW) guidelines will be conducted within 1 year of the start of the project. BNLL detection during protocol level surveys warrants consultation with CDFW to discuss how to implement ground-disturbing activities to avoid take. b. To ensure BNLLs do not occupy open burrows during the time between the end of the protocol surveys and the start of project construction, the protocol surveys will be timed such that the last survey will coincide with the beginning of construction. This will be accomplished by conducting the juvenile surveys during August/September and the adult surveys from April 15 to July 15. The day following the last survey-day burrows will be collapsed/filled under the direction of a Level II BNLL biologist. Once those burrows are collapsed/filled, construction activities will immediately commence. Only those burrows that will be directly impacted by the project will be collapsed and no burrows will be collapsed if any BNLL is observed during the protocol surveys or at any other time prior to the start of the project.	Applicant	Fresno County Design and Construction Divisions PW&P	One year prior to construction/Prior to construction
5.	Biological Resources	The following Mitigation Measure shall be implemented to address impacts to San Joaquin Kit Fox (SJKF). a. SJKF detection warrants consultation with CDFW to discuss how to avoid take, or if avoidance is not feasible, to acquire an ITP prior to ground-disturbing activities, pursuant to Fish and Game code Section 2081 (b).	Applicant	Fresno County Design and Construction Divisions PW&P	Prior to construction/ Ongoing

6.	Biological Resources	The following Mitigation Measures shall be implemented to address impacts to San Joaquin antelope squirrel (SJAS). a. SJAS detection warrants consultation with CDFW to discuss how to avoid take, or if avoidance is not feasible, to acquire an Incidental Take Permit (ITP) prior to ground-disturbing activities, pursuant to Fish and Game Code Section 2081 (b). b. If suitable habitat is present and surveys or trapping are not feasible, maintenance of a 50-foot minimum no-disturbance buffer around all small mammal burrows of suitable size for SJAS shall be implemented.	Applicant	Fresno County Design and Construction Divisions PW&P	April 1 through September 20/Ongoing
7.	Biological Resources	The following Mitigation Measure shall be implemented to address impacts to California Glossy Snake. a. California glossy snake detection during preconstruction surveys warrants consultation with CDFW to discuss how to implement ground-disturbing activities and avoid take. However, CDFW recommends that if any California glossy snake are discovered at a site immediately prior to or during Project activities they be allowed to move out of the area on their own volition. If this is not feasible, CDFW recommends that a qualified biologist who holds a Scientific Collecting Permit for the species, capture and relocate the snake(s) out of harm's way to the nearest suitable habitat immediately adjacent to the project site. Avoidance of refuge habitat (i.e. burrows) whenever possible is encouraged via delineation and observing a 50-foot no-disturbance buffer around burrows.	Applicant	Fresno County Design and Construction Divisions, PW&P	Prior to construction
8.	Biological Resources	The following Mitigation Measures shall be implemented to address impacts to American badger. a. Avoidance whenever possible is encouraged via delineation and observation of a 50-foot no-disturbance buffer around American Badger dens until it is determined through non-invasive means that individuals occupying the den have dispersed.	Applicant	Fresno County Design and Construction Divisions PW&P	Prior to construction/ Ongoing
9.	Biological Resources	The following Mitigation Measures shall be implemented to address impacts to burrowing owl. a. Reassess the presence/absence of burrowing owl (BUOW) by having a qualified biologist conduct	Applicant	Fresno County Design and Construction Divisions PW&P	Prior to construction/ Ongoing

		surveys following the California Burrowing Owl Consortium's "Burrowing Owl Survey Protocol and Mitigation Guidelines" (CBOC 1993) and CDFW's Staff Report on "Burrowing Owl Mitigation" (CDFG 2012). b. Should a BUOW be detected, CDFW recommends no-disturbance buffers, as outlined in the "Staff Report on Burrowing Owl Mitigation" (CDFG 2012), be implemented prior to and during any ground-disturbing activities. c. If necessary, burrow exclusion shall be conducted by qualified biologists and only during non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance.			
10.	Biological Resources	The following Mitigation Measures shall be implemented to address impacts to nesting birds. a. If construction activities will occur between February 1 and August 31, a qualified wildlife biologist shall conduct pre-activity surveys for active nests of a special-status bird no more than 10 days prior to the start of ground disturbance to maximize probability that nests that could potentially be impacted are detected. If detected, a qualified biologist shall continuously monitor nests to detect behavioral changes resulting from the project. CDFW shall be consulted for additional avoidance and minimization measures. b. If continuous monitoring of identified nests by a qualified wildlife biologist is not feasible, a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the nesting season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. CDFW shall be consulted if a Variance from the aforementioned no-disturbance buffer is sought.	Applicant	Fresno County Design and Construction Divisions PW&P	No more than 10 days prior to construction if construction occurs between February 1 and August 31/Ongoing
11.	Biological Resources	The following Mitigation Measures shall be implemented to address impacts to Loggerhead Shrikes	Applicant	Fresno County Design and	Ongoing

		a. In order to avoid impacts to loggerhead shrikes, initial ground disturbance activities such as grading, scraping, material stockpiling, etc. will be initiated between September 1 and January 31. This will ensure that project activities potentially impacting nesting shrikes will not coincide with their nesting season (February 1 to August 31). If ground disturbance must be initiated between February 1 and August 31, a qualified biologist will conduct a preconstruction survey for active shrike nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction free buffer around the nest. This buffer will identify a suitable construction free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.		Construction Divisions PW&P	
12.	Biological Resources	The following Mitigation Measures shall be implemented to address impacts to roosting bats. a. Bats shall not be disturbed without specific notice to and consultation with CDFW. If a bat roost is detected, CDFW advises a minimum 50-foot no-disturbance buffer during activity, or postponing activity until repeat surveying documents that bats no longer use the roost. If avoidance or postponement is not feasible, a request for a reduced buffer or a Bat Eviction Plan shall be submitted to CDFW for written approval prior to implementation.	Applicant	Fresno County Design and Construction Divisions PW&P	Ongoing
13.	Cultural Resources	In the event that cultural resources are unearthed during ground-disturbing activities, all work shall be halted in the area of the find. An Archeologist shall be called to evaluate the findings and make any necessary mitigation recommendations. If human remains are unearthed during ground-disturbing activities, no further disturbance is to occur until the Fresno County Sheriff-Coroner has made the necessary findings as to origin and disposition. All normal evidence procedures should be followed by photos, reports, video, etc. If such remains are determined to be Native American, the Sherriff-Coroner must notify the Native American Commission within 24 hours. Additional archaeological surveys will be needed if project limits are extended beyond the present survey limits.	Applicant	Fresno County Design and Construction Division, PW&P	Ongoing

14.	Energy	Idling of onsite equipment and vehicles will be avoided to the most possible extent.	Applicant	Fresno County Construction Division, PW&P	Ongoing
15.	Hazards and Hazardous Materials	An asbestos survey should be performed to determine whether or not the concrete will require special handling and disposal.	Applicant	Fresno County Design and Construction Division, PW&P	Prior to construction
16.	Hazards and Hazardous Materials	A lead-based paint survey should be performed to determine whether or not the railing paint contains elevated concentrations of lead which would require special handling and disposal.	Applicant	Fresno County Design and Construction Division, PW&P	Prior to construction
17.	Hazards and Hazardous Materials	Testing and removal requirements for yellow traffic striping and pavement marked materials should be performed in accordance with Caltrans Construction Policy Bulletin 99-2 (Caltrans Construction Manual Chapter 7-107E; Caltrans, 2014a).	Applicant	Fresno County Construction Division, PW&P	Ongoing
18.	Hydrology and Water Quality	Prior to construction, the County shall comply with Section 404 of the Clean Water Act in coordination with the United States Army Corps of Engineers, Section 401 of the Clean Water Act in coordination with the Regional Water Quality Control Board and Fish, and Game Code Section 1602 in coordination with the California Department of Fish and Wildlife for Project-related impacts that will occur in areas under the jurisdiction of the regulatory agencies.	Applicant	Fresno County Design Division, PW&P	Prior to construction
19.	Hydrology and Water Quality	Prior to commencement of construction activities, the contractor shall prepare a hazardous materials spill prevention control and countermeasure plan that will minimize the potential for and the effects of the release of toxic materials during construction of the proposed project. The plan shall include storage and containment procedures to prevent and respond to spills, and shall identify the appropriate parties responsible for monitoring the spill response. During construction of the proposed project, any spills that occur shall be remedied immediately according to the guidance provided in the spill prevention control and countermeasure plan. The County and Caltrans shall review and approve the spill prevention control and countermeasure plan prior to allowing construction to being.	Applicant	Fresno County Design and Construction Division, PW&P	Prior to construction / Ongoing
20.	Hydrology and Water Quality	Once construction activities are complete, disturbed area shall be re-vegetated with similar plant vegetation, pre-approved by the County, stabilize soils and establish a natural system for erosion control. In addition, a 5-foot vegetative buffer consisting of native upland plan species should be planted to treat roadway runoff before it enters the channel below. Sediment control, potentially consisting of fiber rolls, may also be implemented.	Applicant	Fresno County Design and Construction Division, PW&P	Ongoing and after construction

*MITIGATION MEASURE – Measure specifically applied to the project to mitigate potential adverse environmental effects identified in the environmental document.
Conditions of Approval reference recommended Conditions for the project.

Notes	
The following Notes reference mandatory requirements of Fresno County or other Agencies and are provided as information to the project Applicant.	
1.Air Quality	The proposed Project may be subject to District Rules and Regulations, including: Regulation VII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the Project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

Notice is hereby given that the County of Fresno has prepared Initial Study Application (IS) No. 7530 pursuant to the requirements of the California Environmental Quality Act for the following proposed project:

> **INITIAL STUDY APPLICATION NO. 7530** filed by **FRESNO COUNTY DEPARTMENT OF PUBLIC WORKS AND PLANNING, DESIGN DIVISION**, proposing to replace the existing Jacalitos Creek Bridge, make associated improvements that would address scour problems at the bridge and repair and/or stabilize the creek banks upstream and downstream of the bridge. The project site is located on Lost Hills Avenue, just west of Jacalitos Creek Road and is approximately 2.05 miles southeast of the nearest city limits of the City of Coalinga. (SUP. DIST. 4) (Right-of-Way near APN 083-050-08S). Adopt the Mitigated Negative Declaration prepared for Initial Study Application No. 7530.
>
> (hereafter, the "Proposed Project")

The County of Fresno has determined that it is appropriate to adopt a Mitigated Negative Declaration for the Proposed Project. The purpose of this Notice is to (1) provide notice of the availability of IS Application No. 7530 and the draft Mitigated Negative Declaration, and request written comments thereon; and (2) provide notice of the public hearing regarding the Proposed Project.

Public Comment Period

The County of Fresno will receive written comments on the Proposed Project and Mitigated Negative Declaration from March 20, 2015 through April 20, 2019.

Email written comments to TKobayashi@FresnoCountyCA.gov, or mail comments to:

> Fresno County Department of Public Works and Planning
> Development Services and Capital Projects Division
> Attn: Thomas Kobayashi
> 2220 Tulare Street, Suite A
> Fresno, CA 93721

IS Application No. 7530 and the draft Mitigated Negative Declaration may be viewed at the above address Monday through Thursday, 9:00 a.m. to 5:00 p.m., and Friday, 8:30 a.m. to 12:30 p.m. (except holidays), or at www.co.fresno.ca.us/initialstudies. An electronic copy of the draft Mitigated Negative Declaration for the Proposed Project may be obtained from Thomas Kobayashi at the addresses above.

Public Hearing

The Board of Supervisors will hold a public hearing to consider approving the Proposed Project and the Mitigated Negative Declaration on May 26, 2020, at 8:45 a.m., or as soon thereafter as possible, in Room 301, Hall of Records, 2281 Tulare Street, Fresno, California 93721. Interested persons are invited to appear at the hearing and comment on the Proposed Project and draft Mitigated Negative Declaration.

For questions please call Thomas Kobayashi (559) 600-4224.
Published: March 20, 2020

E202010000113

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

FILED
MAR 19 2020 TIME 11:19 am
By FRESNO COUNTY CLERK DEPUTY
For County Clerk's Stamp

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Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
Attn: Thomas Kobayashi
2220 Tulare Street, Suite A
Fresno, CA 93721

IS Application No. 7530 and the draft Mitigated Negative Declaration may be viewed at the above address Monday through Thursday, 9:00 a.m. to 5:00 p.m., and Friday, 8:30 a.m. to 12:30 p.m. (except holidays), or at www.co.fresno.ca.us/intialstudy. An electronic copy of the

DEVELOPMENT SERVICES AND CAPITAL PROJECTS DIVISION
2220 Tulare Street, Sixth Floor / Fresno, California 93721 / Phone (559) 600-4497 / 600-4022 / 600-4540 / FAX 600-4200
The County of Fresno is an Equal Employment Opportunity Employer

draft Mitigated Negative Declaration for the Proposed Project may be obtained from Thomas Kobayashi at the addresses above.

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For questions please call Thomas Kobayashi (559) 600-4224.

Published: March 23, 2020

File original and one copy with:	Space Below For County Clerk Only.
Fresno County Clerk **2221 Kern Street** **Fresno, California 93721**	CLK-2046.00 E04-73 R00-00

Agency File No:	LOCAL AGENCY PROPOSED MITIGATED NEGATIVE DECLARATION	County Clerk File No:
IS 7530		**E-**

Responsible Agency (Name):	Address (Street and P.O. Box):	City:	Zip Code:
Fresno County	2220 Tulare St. Sixth Floor	Fresno	93721

Agency Contact Person (Name and Title):	Area Code:	Telephone Number:	Extension:
Thomas Kobayashi Planner	559	600-4224	N/A

Project Applicant/Sponsor (Name):	Project Title:
Alexis Rutherford County of Fresno Department of Public Works, Design Division	Initial Study No. 7530, Jacalitos Creek Bridge Replacement Project

Project Description: Replace the existing Jacalitos Creek Bridge, make associated improvements that would address scour problems at the bridge, and repair and/or stabilize the creek banks upstream and downstream of the bridge.

Justification for Negative Declaration:

Based upon the Initial Study Application No. 7530 prepared for the Jacalitos Creek Bridge Replacement Project, staff has concluded that the project will not have a significant effect on the environment. It has been determined that there would have no impacts to Aesthetics, Agricultural and Forestry Resources, Greenhouse Gas Emissions, Land Use Planning, Mineral Resources, Populations and Housing, Public Services, and Recreation.

Potential impacts related to Air Quality, Geology and Soils, Noise, Transportation/Traffic and Utilities and Service Systems have been determined to be less than significant. Potential impacts relating to Biological Resources, Cultural Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, and Mandatory Findings of Significance have determined to be less than significant with compliance with the listed Mitigation Measures.

A Mitigated Negative Declaration/ is recommended and is subject to approval by the decision-making body. The Initial Study is available for review at 2220 Tulare Street, Suite A, Street Level, located on the southeast corner of Tulare and "M" Street, Fresno, California.

FINDING:

The proposed project will not have a significant impact on the environment.

Newspaper and Date of Publication:	Review Date Deadline:
Fresno Business Journal – March 23, 2020	Board of Supervisors – May 26, 2020

Date:	Type or Print Signature:	Submitted by (Signature):
	Marianne Mollring Senior Planner	Thomas Kobayashi Planner

State 15083, 15085

County Clerk File No.:_____

LOCAL AGENCY
MITIGATED NEGATIVE DECLARATION

DRAFT

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

NOTICE OF DETERMINATION

To: ☐ Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

☒ County Clerk, County of Fresno
2221 Kern Street
Fresno, CA 93721

From: Fresno County Department of Public Works and Planning, Development Services and Capital Projects
2220 Tulare Street (corner of Tulare and "M") Suite "A", Fresno, CA 93721

Subject: Filing of Notice of Determination in compliance with Section 21152 of the Public Resource Code

Project: Initial Study Application No. 7530, Jacalitos Creek Bridge Replacement Project

Location: The project site is located on Lost Hills Road, just west of Jacalitos Creek Road. The project site is located approximately 2.05 miles southeast of the nearest city limits of the City of Coalinga. (Sup. Dist. 4) (Right-of-Way near APN 083-050-08S).

Sponsor: Alexis Rutherford, Fresno County Department of Public Works and Planning, Transportation Design Division

Description: Replace the existing Jacalitos Creek Bridge, make associated improvements that would address scour problems at the bridge and repair and/or stabilize the creek banks upstream and downstream of the bridge.

This is to advise that the County of Fresno (☒ Lead Agency ☐ Responsible Agency) has approved the above described project on May 26, 2020, and has made the following determination:

1. The project ☐ **will** ☒ **will not** have a significant effect on the environment.
2. ☒ An Environmental Impact Report (EIR) **was not** prepared for this project pursuant to the provisions of CEQA. / ☒ A Mitigated Negative Declaration **was** prepared for this project pursuant to the provisions of CEQA.
3. Mitigation Measures ☒ **were** ☐ **were not** made a condition of approval for the project.
4. A statement of Overriding Consideration ☐ **was** ☒ **was not** adopted for this project.

DRAFT

This is to certify that the Initial Study with comments and responses and record of project approval is available to the General Public at Fresno County Department of Public Works and Planning, 2220 Tulare Street, Suite A, Corner of Tulare and "M" Streets, Fresno, California.

_____ _____

Thomas Kobayashi, Planner Date
(559) 600-4224 /TKobayashi@FresnoCountyCA.gov

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DRAFT

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

DATE: October 17, 2018

TO: Department of Public Works and Planning, Attn: Steven E. White, Director
Department of Public Works and Planning, Attn: Bernard Jimenez, Assistant Director
Department of Public Works and Planning, Attn: John R. Thompson, Deputy Director
Development Services and Capital Projects, Attn: William M. Kettler, Division Manager
Development Services and Capital Projects, Attn: Chris Motta, Principal Planner
Development Services and Capital Projects, Current Planning, Attn: Marianne Mollring, Senior Planner
Development Services and Capital Projects, Policy Planning, ALCC, Attn: Mohammad Khorsand
Development Services and Capital Projects, Zoning & Permit Review, Attn: Tawanda Mtunga
Development Services and Capital Projects, Site Plan Review, Attn: Hector Luna
Development Services and Capital Projects, Building & Safety/Plan Check, Attn: Chuck Jonas
Resources Division, Parks and Grounds, Attn: John R. Thompson
Development Engineering, Attn: Laurie Kennedy, Grading/Mapping
Road Maintenance and Operations, Attn: Frank Daniele/Nadia Lopez
Design Division, Special Projects/Road Projects, Attn: Mohammad Alimi/Dale Siemer
Water and Natural Resources Division, Attn: Glenn Allen, Division Manager
Department of Public Health, Environmental Health Division, Attn: Kevin Tsuda/Deep Sidhu/Steven Rhodes
Sheriff's Office, Attn: Captain John Zanoni, Lt. John Reynolds, Lt. Louie Hernandez, Lt. Kathy Curtice, Lt. Ryan Hushaw
U.S. Fish and Wildlife Service, San Joaquin Valley Division, Attn: Holley Kline **(Note: Hard copy)**
U.S. Environmental Protection Agency, Air Division, Air Planning Office, Region 9, Attn: Dawn Richmond
U.S. Environmental Protection Agency, Environmental Applications, Attn: Zac Appleton
CA Regional Water Quality Control Board, Attn: Dale Harvey
CALTRANS, Attn: Dave Padilla
CALTRANS, San Joaquin Environmental Branch, Attn: Shane Gunn
CA Department of Fish and Wildlife, Attn: Renee Robison, Environmental Scientist
CA Environmental Protection Agency, Department of Toxic Substance Control, Attn: Don Plain
CA Department of Toxic Substance Control (CEQA unit), Attn: Dave Kereazis
State Lands Commission, Attn: Kenneth Foster
CA Department of Water Resources, Attn: Kevin Faulkenberry
Dumna Wo Wah Tribal Government, Attn: Robert Ledger, Tribal Chairman/Eric Smith, Cultural Resources Manager/Chris Acree, Cultural Resources Analyst
Picayune Rancheria of the Chuckchansi Indians, Attn: Tara C. Estes-Harter, THPO/Cultural Resources Director

Santa Rosa Rancheria Tachi Yokut Tribe, Attn: Ruben Barrios, Tribal Chairman/
Hector Franco, Director/Shana Powers, Cultural Specialist II
San Joaquin Valley Unified Air Pollution Control District (PIC-CEQA Division),
Attn: PIC Supervisor
Fresno County Fire Protection District, Attn: Chris Christopherson, Battalion Chief

FROM: Thomas Kobayashi, Planner
Development Services and Capital Projects Division

SUBJECT: Initial Study Application No. 7530

APPLICANT: Fresno County Department of Public Works and Planning, Design Division

DUE DATE: November 1, 2018

The Department of Public Works and Planning, Development Services and Capital Projects Division is reviewing the subject application proposing to replace the existing Jacalitos Creek Bridge on Lost Hills Avenue, just west of Jacalitos Creek Road, and make associated improvements that would address scour problems at the bridge and repair and/or stabilize the creek banks upstream and downstream of the bridge. An Initial Study is being prepared to identify and mitigate possible impacts from this project.

We must have your comments by **November 1, 2018.** Any comments received after this date may not be used.

NOTE - THIS WILL BE OUR ONLY REQUEST FOR WRITTEN COMMENTS. If you do not have comments, please provide a "NO COMMENT" response to our office by the above deadline (e-mail is also acceptable; see email address below).

Please address any correspondence or questions related to environmental and/or policy/design issues to me, Thomas Kobayashi, Planner, Development Services and Capital Projects Division, Fresno County Department of Public Works and Planning, 2220 Tulare Street, Sixth Floor, Fresno, CA 93721, or call (559) 600-4224, or email TKobayashi@FresnoCountyCA.gov.

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Activity Code (Internal Review):2335

Enclosures

Fresno County Department of Public Works and Planning

IS 7530
(Application No.)

MAILING ADDRESS:
Department of Public Works and Planning
Development Services Division
2220 Tulare St., 6th Floor
Fresno, Ca. 93721

LOCATION:
Southwest corner of Tulare & "M" Streets, Suite A
Street Level
Fresno Phone: (559) 600-4497
Toll Free: 1-800-742-1011 Ext. 0-4497

APPLICATION FOR:

- ☐ Pre-Application (Type) _____
- ☐ Amendment Application
- ☐ Amendment to Text
- ☐ Conditional Use Permit
- ☐ Variance (Class)/Minor Variance
- ☐ Site Plan Review/Occupancy Permit
- ☐ No Shoot/Dog Leash Law Boundary
- ☐ General Plan Amendment/Specific Plan/SP Amendment)
- ☐ Time Extension for _____
- ☐ Director Review and Approval
- ☐ for 2nd Residence
- ☐ Determination of Merger
- ☐ Agreements
- ☐ ALCC/RLCC
- ☒ Other Environmental Review

DESCRIPTION OF PROPOSED USE OR REQUEST:
Jacalitos Creek Bridge Replacement Project on Lost Hills Avenue

RECEIVED
COUNTY OF FRESNO
SEP 21 2018
DEPARTMENT OF PUBLIC WORKS AND PLANNING
DEVELOPMENT SERVICES DIVISION

CEQA DOCUMENTATION: X *Initial Study* ☐ *PER* ☐ *N/A*

PLEASE USE FILL-IN FORM OR PRINT IN BLACK INK. Answer all questions completely. Attach required site plans, forms, statements, and deeds as specified on the Pre-Application Review. **Attach Copy of Deed, including Legal Description.**

LOCATION OF PROPERTY: _____ side of Lost Hills Ave. just west of Jacalitos Creek Road
between _____ and _____
Street address: _____

APN: _____ Parcel size: _____ Section(s)-Twp/Rg: S _____ - T _____ S/R _____ E

ADDITIONAL APN(s): _____

I, Alexis Rutherford (*signature*), declare that I am the owner, or authorized representative of the owner, of the above described property and that the application and attached documents are in all respects true and correct to the best of my knowledge. The foregoing declaration is made under penalty of perjury.

Owner (Print or Type)	Address	City	Zip	Phone
County of Fresno				
Applicant (Print or Type)	**Address**	**City**	**Zip**	**Phone**
PW&P, Design Division				
Representative (Print or Type)	**Address**	**City**	**Zip**	**Phone**
Alexis Rutherford	2220 Tulare Stree, 7th Floor	Fresno	93721	04530

CONTACT EMAIL:

OFFICE USE ONLY (*PRINT FORM ON GREEN PAPER*)

Application Type / No.: 1 Fee: $
Application Type / No.: Fee: $
Application Type / No.: Fee: $
Application Type / No.: Fee: $
PER/Initial Study No.: IS7530 Fee: $ 1,212.00
Ag Department Review: Fee: $
Health Department Review: Fee: $ 338.00
Received By: Thomas K. Invoice No.: 112494 TOTAL: $ 1,550.00

UTILITIES AVAILABLE:

WATER: Yes ☐ / No ☐
Agency: _____

SEWER: Yes ☐ / No ☐
Agency: _____

STAFF DETERMINATION: This permit is sought under Ordinance Section:

_____ Sect-Twp/Rg: _____ - T_____ S /R_____ E
Related Application(s): _____ APN # ___ - ___ - ____
Zone District: _____ APN # ___ - ___ - ____
Parcel Size: _____ APN # ___ - ___ - ____
APN # ___ - ___ - ____

RECEIVED
COUNTY OF FRESNO

SEP 21 2018

DEPARTMENT OF PUBLIC WORKS AND PLANNING
DEVELOPMENT SERVICES DIVISION

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING

INITIAL STUDY APPLICATION

INSTRUCTIONS

Answer all questions completely. An incomplete form may delay processing of your application. Use additional paper if necessary and attach any supplemental information to this form. Attach an operational statement if appropriate. This application will be distributed to several agencies and persons to determine the potential environmental effects of your proposal. Please complete the form in a legible and reproducible manner (i.e., USE BLACK INK OR TYPE).

OFFICE USE ONLY

IS No. IS. 7530

Project No(s)._____

Application Rec'd.:

_____

GENERAL INFORMATION

1. ***Property Owner :*** County of Fresno ***Phone/Fax***_____

   Mailing Address: 2220 Tulare Street 7th Floor, Fresno, CA 93721
   Street ***City*** ***State/Zip***

2. ***Applicant :*** Public Works and Planning, Design Division ***Phone/Fax***:_____

   Mailing Address: Same as above
   Street ***City*** ***State/Zip***

3. ***Representative***: Alexis Rutherford ***Phone/Fax***:600-4530

   Mailing Address: Same as above
   Street ***City*** ***State/Zip***

4. ***Proposed Project:*** Jacalitos Creek Bridge Replacement Project on Lost Hills Avenue

5. ***Project Location***: Lost Hills Avenue just west of Jacalitos Creek Road

6. ***Project Address:*** N/A

7. ***Section/Township/Range:*** ___ /__ /__ ___ 8. ***Parcel Size:*** N/A

9. ***Assessors Parcel No.*** N/A

10. *Land Conservation Contract No. (If applicable):* N/A

11. *What other agencies will you need to get permits or authorization from:*

_____ *LAFCo (annexation)*	_____ *SJVUAPCD (Air Pollution Control District)*
__X__ *CALTRANS*	_____ *Reclamation Board*
_____ *Division of Aeronautics*	_____ *Department of Energy*
_____ *Water Quality Control Board*	_____ *Airport Land Use Commission*
_____ *Other* _____	

12. *Will the project utilize Federal funds or require other Federal authorization subject to the provisions of the National Environmental Policy Act (NEPA) of 1969?* _X_ *Yes* _____ *No*

If so, please provide a copy of all related grant and/or funding documents, related information and environmental review requirements.

13. *Existing Zone District[1]:* _____

14. *Existing General Plan Land Use Designation[1]:* Transportation

ENVIRONMENTAL INFORMATION

15. *Present land use:* Transportation
Describe existing physical improvements including buildings, water (wells) and sewage facilities, roads, and lighting. Include a site plan or map showing the previously listed improvements:

Describe the major vegetative cover: None

Any perennial or intermittent water courses? If so, show on map: Yes

Is property in a flood prone area? Describe: Located in the floodplain

16. *Describe surrounding land uses (e.g., commercial, agricultural, residential, school, etc.):*

North: _____

South: _____

East: _____

West: _____

17. *What land use(s) in the area may be impacted by your Project?:* None

18. *What land use(s) in the area may impact your project?:* None

19. *Transportation:*

NOTE: The information below will be used in determining traffic impacts from this project. The data may also show the need for a Traffic Impact Study (TIS) for the project.

A. Will additional driveways from the proposed project site be necessary to access public roads?
_____ *Yes* ___X___ *No*

B. Daily traffic generation:

I.	*Residential - Number of Units*	N/A
	Lot Size	N/A
	Single Family	N/A
	Apartments	N/A
II.	*Commercial - Number of Employees*	N/A
	Number of Salesmen	N/A
	Number of Delivery Trucks	N/A
	Total Square Footage of Building	N/A

III. Describe and quantify other traffic generation activities: None

20. *Describe any source(s) of noise from your project that may affect the surrounding area:*
Temporary construction noise

21. *Describe any source(s) of noise in the area that may affect your project:* None

22. *Describe the probable source(s) of air pollution from your project:*
Temporary dust from construction activities

23. *Proposed source of water:*
( ) private well
( ) community system[3]--name: N/A

24. *Anticipated volume of water to be used (gallons per day)[2]:* N/A

25. *Proposed method of liquid waste disposal:*
( ) septic system/individual
( ) community system[3]-name N/A

26. *Estimated volume of liquid waste (gallons per day)[2]:* N/A

27. *Anticipated type(s) of liquid waste:* N/A

28. *Anticipated type(s) of hazardous wastes[2]:* N/A

29. *Anticipated volume of hazardous wastes[2]:* N/A

30. *Proposed method of hazardous waste disposal[2]:* N/A

31. *Anticipated type(s) of solid waste:* N/A

32. *Anticipated amount of solid waste (tons or cubic yards per day):* N/A

33. *Anticipated amount of waste that will be recycled (tons or cubic yards per day):* N/A

34. *Proposed method of solid waste disposal:* N/A

35. *Fire protection district(s) serving this area:* N/A

36. *Has a previous application been processed on this site? If so, list title and date:* Unknown

37. *Do you have any underground storage tanks (except septic tanks)? Yes_____ No* X

38. *If yes, are they currently in use? Yes_____ No_____*

TO THE BEST OF MY KNOWLEDGE, THE FOREGOING INFORMATION IS TRUE.

Alexis Rutherford
SIGNATURE

8/27/18
DATE

[1]Refer to Development Services Conference Checklist
[2]For assistance, contact Environmental Health System, (559) 445-3357
[3]For County Service Areas or Waterworks Districts, contact the Resources Division, (559) 262-4259

(Revised 1/3/08)

NOTICE AND ACKNOWLEDGMENT

INDEMNIFICATION AND DEFENSE

The Board of Supervisors has adopted a policy that applicants should be made aware that they may be responsible for participating in the defense of the County in the event a lawsuit is filed resulting from the County's action on your project. You may be required to enter into an agreement to indemnify and defend the County if it appears likely that litigation could result from the County's action. The agreement would require that you deposit an appropriate security upon notice that a lawsuit has been filed. In the event that you fail to comply with the provisions of the agreement, the County may rescind its approval of the project.

STATE FISH AND WILDLIFE FEE

State law requires that specified fees ($3,168 for an EIR; $2,280.75 for a Negative Declaration) be paid to the California Department of Fish and Wildlife (DFW) for projects, which must be reviewed for potential adverse effect on wildlife resources. The County is required to collect the fees on behalf of the DFW. A $50.00 handling fee will also be charged as provided for in the legislation to defray a portion of the County's costs for collecting the fees.

The following projects are exempt from the fees:

1. *All projects statutorily exempt from the provisions of CEQA (California Environmental Quality Act).*

2. *All projects categorically exempt by regulations of the Secretary of Resources (State of California) from the requirement to prepare environmental documents.*

A fee exemption may be issued by DFW for eligible projects determined by that agency to have "no effect on wildlife." That determination must be provided in advance from DFW to the County at the request of the applicant. You may wish to call the local office of the DFW at (559) 222-3761, if you need more information.

Upon completion of the Initial Study you will be notified of the applicable fee. Payment of the fee will be required before your project will be forwarded to the project analyst for scheduling of any required hearings and final processing. The fee will be refunded if the project should be denied by the County.

Alexis Rutherford — 8/27/18

Applicant's Signature — *Date*

RECEIVED
COUNTY OF FRESNO

SEP 21 2018

DEPARTMENT OF PUBLIC WORKS
AND PLANNING
DEVELOPMENT SERVICES DIVISION

Project Description

Jacalitos Creek Bridge Replacement Project on Lost Hills Avenue, near Jacalitos Creek Road

The County of Fresno, in cooperation with California Department of Transportation (Caltrans), is proposing to replace the existing Jacalitos Creek Bridge on Lost Hills Avenue, just west of Jacalitos Creek Road, and make associated improvements that would address scour problems at the bridge and repair and/or stabilize the creek banks upstream and downstream of the bridge, see Attachment B for a schematic drawing of the work areas, including potential staging areas. The existing 2-lane bridge is classified as functionally obsolete by Caltrans and currently requires load posting due to advanced timber rotting. Permanent right of way and a temporary construction permit would be acquired from private ownership to construct the project.

In general, the project would:

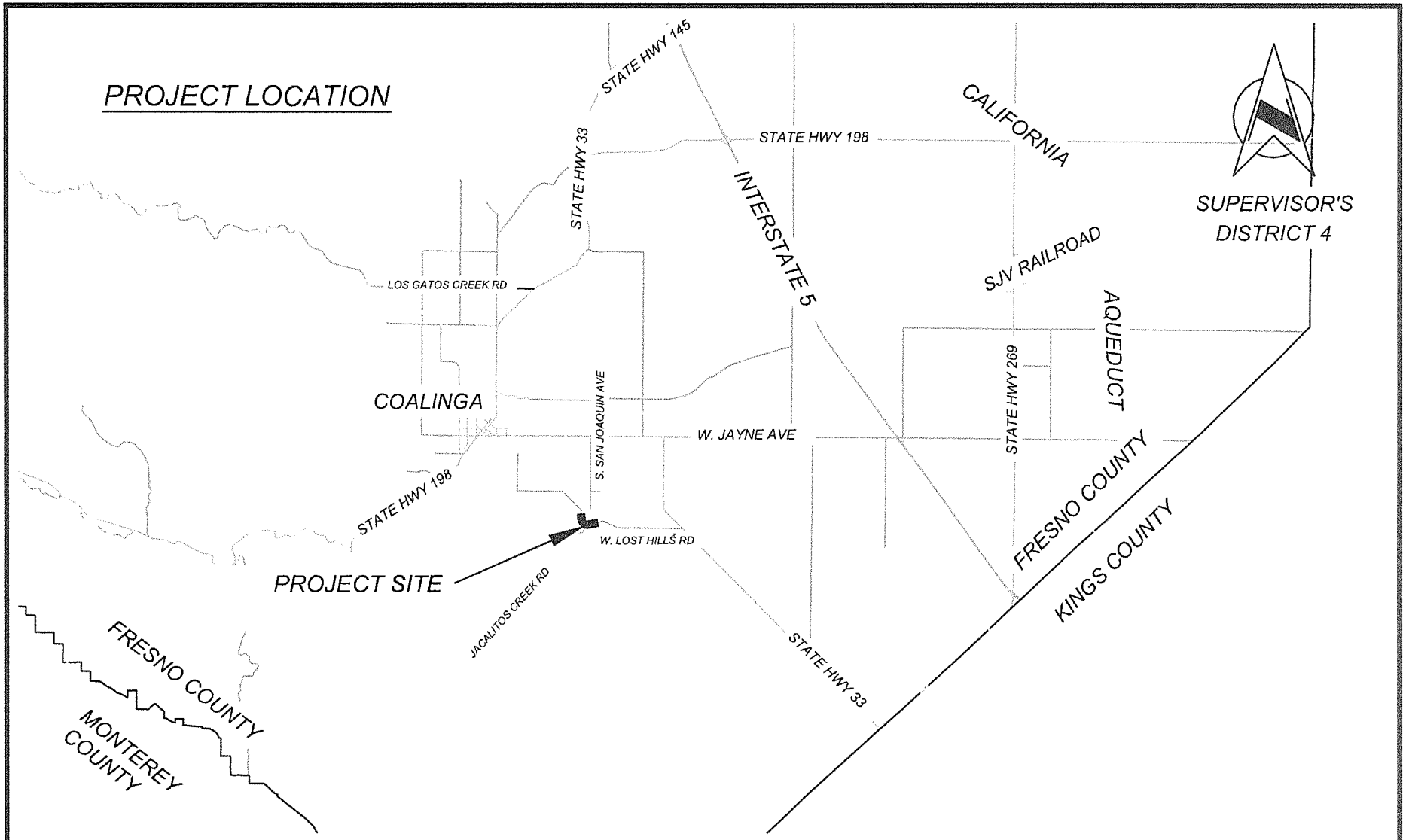
- Replace the existing two-lane bridge with a new two-lane bridge built to current standards;
- Taper widen the roadway approaches to current standards up to approximately 400' on either side of the bridge;
- Shift the intersection of Lost Hills Avenue and Jacalitos Creek Road slightly to the east to accommodate new approach railing. Work on Jacalitos Creek Road would extend approximately 425' from the intersection;
- Install rock slope protection, approximately 5' to 6' in depth, up and downstream from the existing bridge to counteract high velocity flows;
- Install a series of stream barbs along the southeasterly abutment and upstream and downstream of the bridge to redirect the channel thalweg closer to the center of the bridge as an erosion control measure in the channel;
- Construct a temporary onsite low water crossing detour approximately 100' north of the existing bridge for use during construction activities; and
- Relocate utilities, if necessary.

The existing 2-lane, five-span bridge is 28' wide and 91' long, and was originally constructed in 1940. Two of the spans were replaced 1962 due to a wash out. The replacement structure would be a 3-span prestressed cast-in-place slab bridge founded on CIDH piles, approximately 32' wide, depending on the barrier rail type, and 140' long.

Attachments:

A – Location Map
B – Schematic drawing of work and potential staging areas
C – Photos
D – Geotracker Map
E – Sole Source Aquifer
F – FEMA FIRM
G – National Wetlands Inventory Map
H – Draft MMRP

Technical Reports transmitted via G:\PUBLIC\Alexis\Jacalitos Creek Bridge Replacement



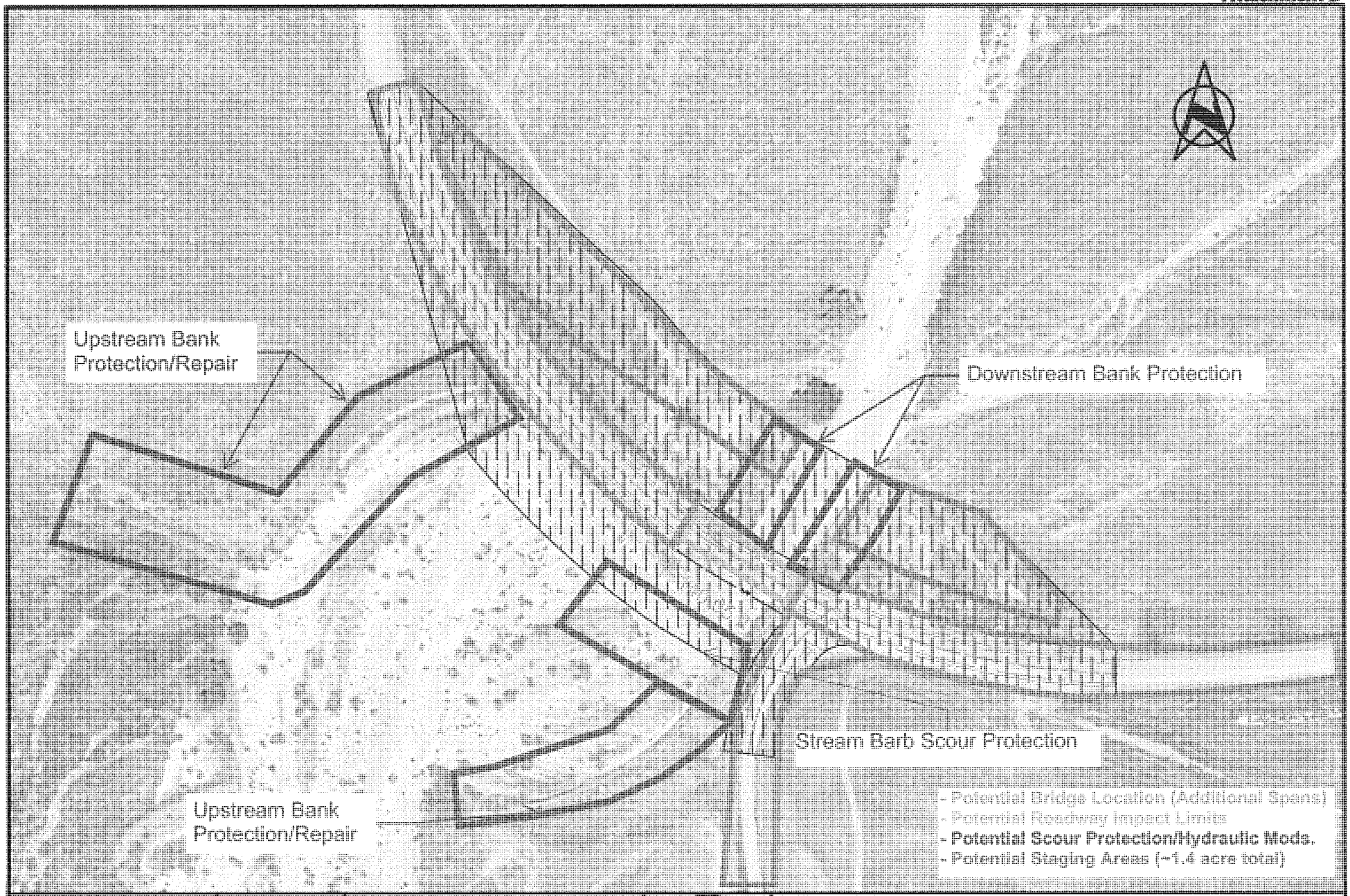
		DATE
DESIGNED	M.Y.S.	01/14
DRAWN	J.M.	01/14

SCALE NONE

BRIDGE NO. 42C0078 / 03-038

DEPARTMENT OF PUBLIC WORKS AND PLANNING

JACALITOS CREEK BRIDGE
REPLACEMENT ON LOST HILLS
FEDERAL PROJECT NO. BRLS-5942(234)



	DATE:	SCALE		DEPARTMENT OF PUBLIC WORKS AND PLANNING
DESIGNED: J.E.	05/15	Not to Scale	COUNTY OF FRESNO 1856	W. LOST HILLS RD BRIDGE REPLACEMENT ON JACALITOS CREEK AREA OF POTENTIAL EFFECT MAP
DRAWN: J.M.	05/15			

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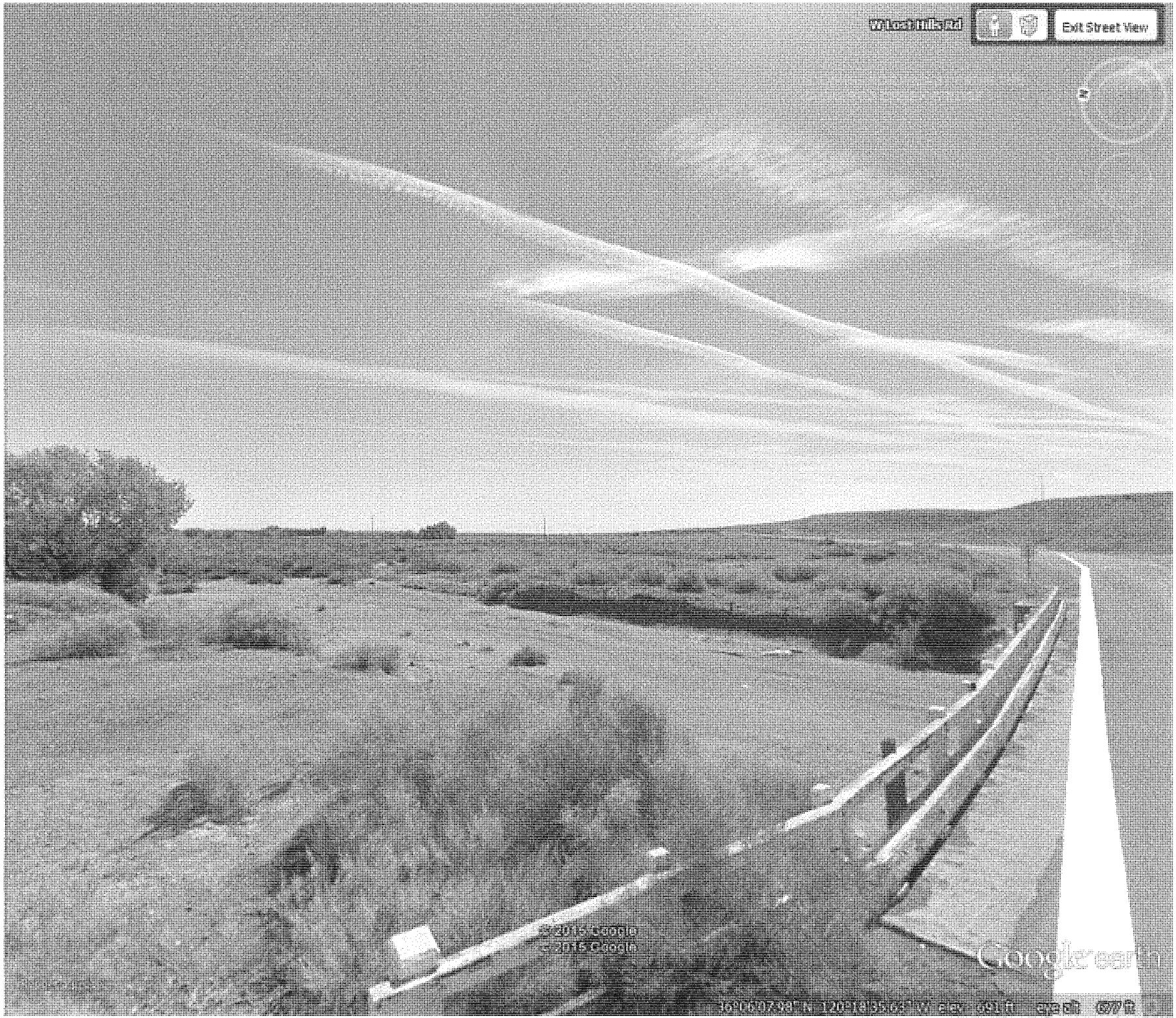
Exit Street View
Google earth

W Lost Hills Rd
Exit Street View
©2013 Google
Google earth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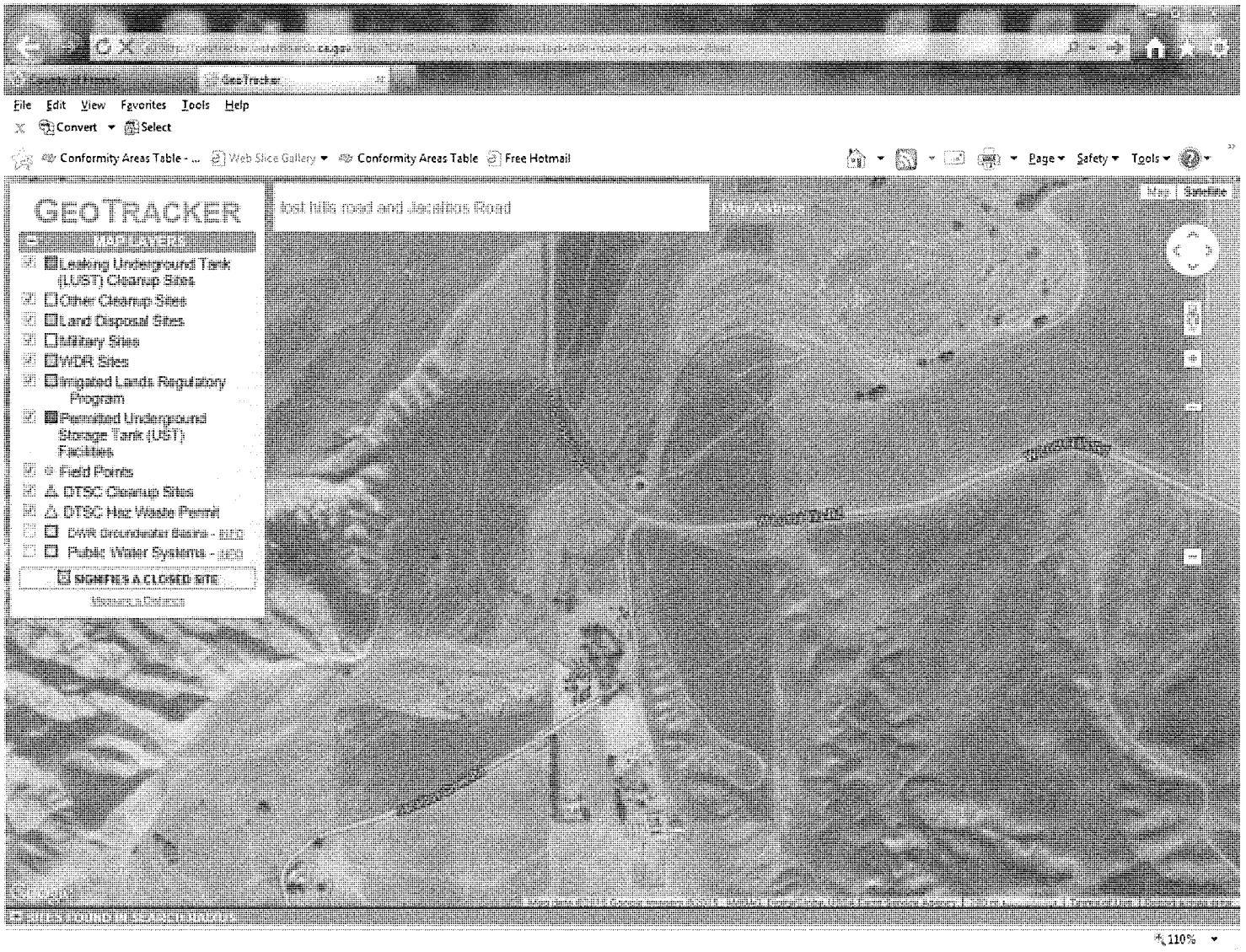
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Free Hotmail
Page Safety Tools
GEOTRACKER
lost hills road and Jacalitos Road
Add Address
Map Satellite
Leaking Underground Tank (LUST) Cleanup Sites
Other Cleanup Sites
Land Disposal Sites
Military Sites
SWEPR Sites
Irrigated Lands Regulatory Program
Permitted Underground Storage Tank (UST) Facilities
Field Points
DTSC Cleanup Sites
DTSC Haz Waste Permit
SIGNIFIES A CLOSED SITE
110%

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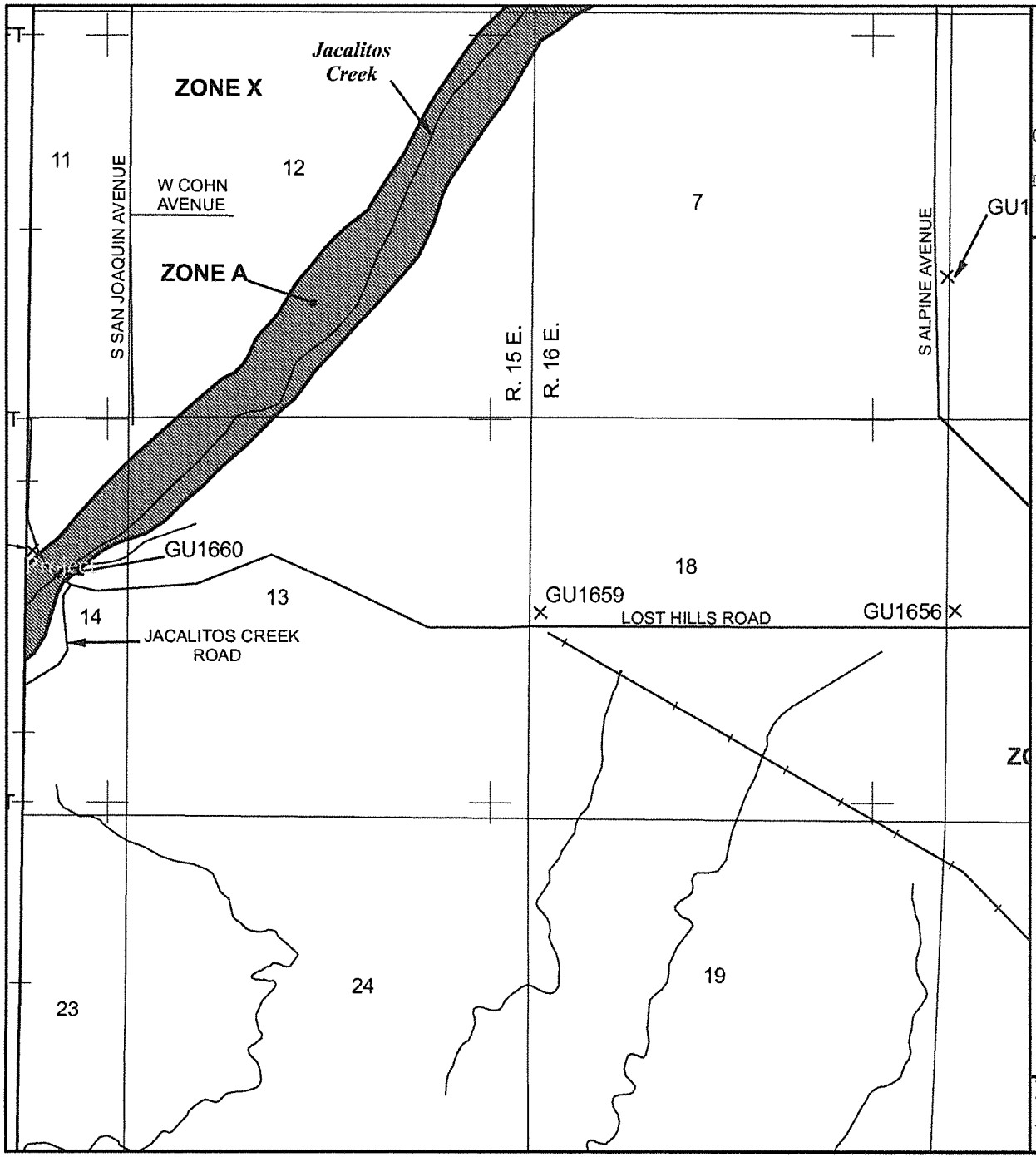
101
W Lost Hills Rd & Jacalitos Creek Rd
Google earth



MAP SCALE 1" = 2000'

000 0 2000 4000

FEET

METER

NFIP

PANEL 3400H

FIRM

FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 3400 OF 3525

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
COALINGA, CITY OF	060045	3400	H
FRESNO COUNTY	065029	3400	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C3400H

MAP REVISED
FEBRUARY 18, 2009

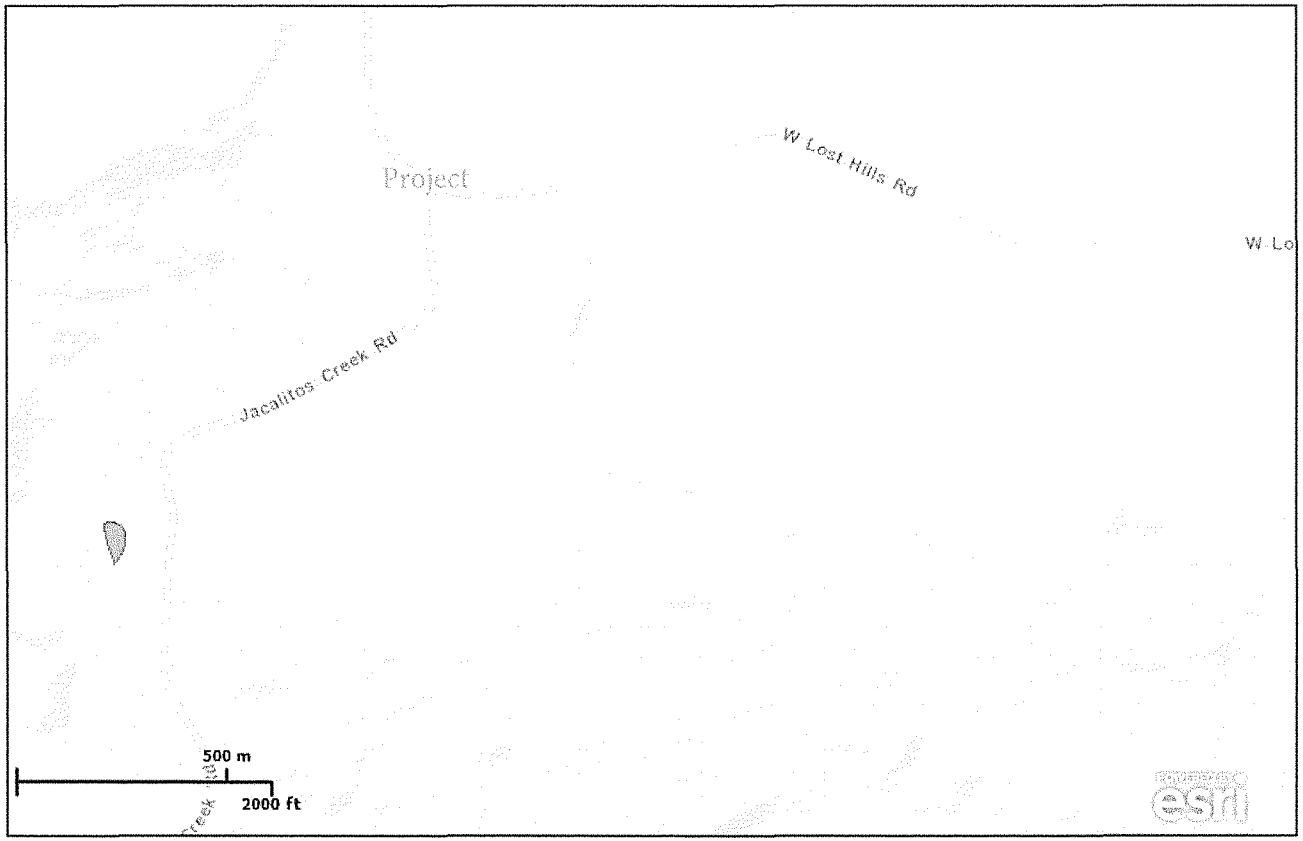
Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

U.S. Fish and Wildlife Service
National Wetlands Inventory

BRLO-5942(234)

Feb 10, 2015



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Riparian

- Herbaceous
- Forested/Shrub

Riparian Status

- Digital Data

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Jacalitos Creek Bridge Replacement on Lost Hills Avenue

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

JURISDICTIONAL WATERS INVESTIGATION
JACALITOS CREEK BRIDGE REPLACEMENT PROJECT
FRESNO COUNTY, CALIFORNIA

Live Oak Associates, Inc.

Austin Pearson, Director of Ecological Services
Jeff Gurule, Wildlife/Plant/Wetlands Ecologist, Senior Project Manager

Prepared for:

Alexis Rutherford
County of Fresno
2220 Tulare Street, 7th Floor
Fresno, CA 93721

November 2, 2015 File No. 1955-01

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www.loainc.com

EXECUTIVE SUMMARY

Live Oak Associates, Inc. (LOA) conducted a delineation of potential waters of the United States of an approximately 23-acre site surrounding the West Lost Hills Road crossing of Jacalitos Creek in western Fresno County, California. An approximately 1,507 linear foot segment of Jacalitos Creek was identified as a potential water of the U.S. within the study area. Such waters generally include navigable waters, interstate drainages, impoundments of jurisdictional waters, tributaries to navigable and interstate waters, and wetlands adjacent to such waters.

LOA plant/wetland/wildlife ecologist Jeff Gurule assisted by LOA ecologist Rebekah Jensen examined the entire study area for possible waters of the United States and gathered vegetation, soils and hydrology data at two sampling locations within and adjacent to such waters in June and July of 2015. Areas of Jacalitos Creek within ordinary high water (OHW) are considered potentially jurisdictional tributary waters. Jurisdictional boundaries within OHW mapped during LOA's field investigation occupied approximately 89,594 square feet (2.06 acres) of the study area. Areas meeting the three technical criteria of a wetland were absent from the study area.

The potential jurisdictional waters mapped on the site fall within a portion of Jacalitos Creek that can be characterized as an intermittent tributary. The watershed of upper Jacalitos Creek to the southwest of the study area drains the east slope of the southern end of the Diablo Range. Jacalitos Creek, after passing through the study area, merges with Los Gatos Creek. Los Gatos Creek continues northeast until it dissipates in the Central San Joaquin Valley north of the City of Huron and east of the California Aqueduct. Evidence of an historic connection between Los Gatos Creek and historic Tulare Lake via the North Fork Kings River can be found on at least one historic map. Because the U.S. Army Corps of Engineers (USACE) has set a precedent of claiming all historic tributaries of historic Tulare Lake and the USACE has previously claimed Los Gatos Creek as a water of the U.S., the delineated water of the study area could meet the criteria of a water of the United States.

No other portion of the study area would be considered a water of the U.S. The upper channel banks supported upland vegetation. All other areas of the study area did not meet any of the technical criteria of jurisdictional wetlands.

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1.0 INTRODUCTION

Live Oak Associates, Inc. (LOA) surveyed an approximately 23-acre area with the potential to be impacted by the Jacalitos Creek Bridge Replacement Project (hereafter referred to as the study area or site) for waters of the United States and other jurisdictional waters (hereafter referred to as "jurisdictional waters") in the summer of 2015. The study area is located at the West Lost Hills Road crossing of Jacalitos Creek approximately 3.0 miles southeast of the City of Coalinga, Fresno County (Figure 1). The study area can be found on the Kreyenhagen Hills U.S. Geological Survey (USGS) 7.5 minute quadrangle in Township 21 South, Range 15 East, Section 14 (Figure 2).

1.1 REGULATORY DEFINITION OF WATERS OF THE U.S.

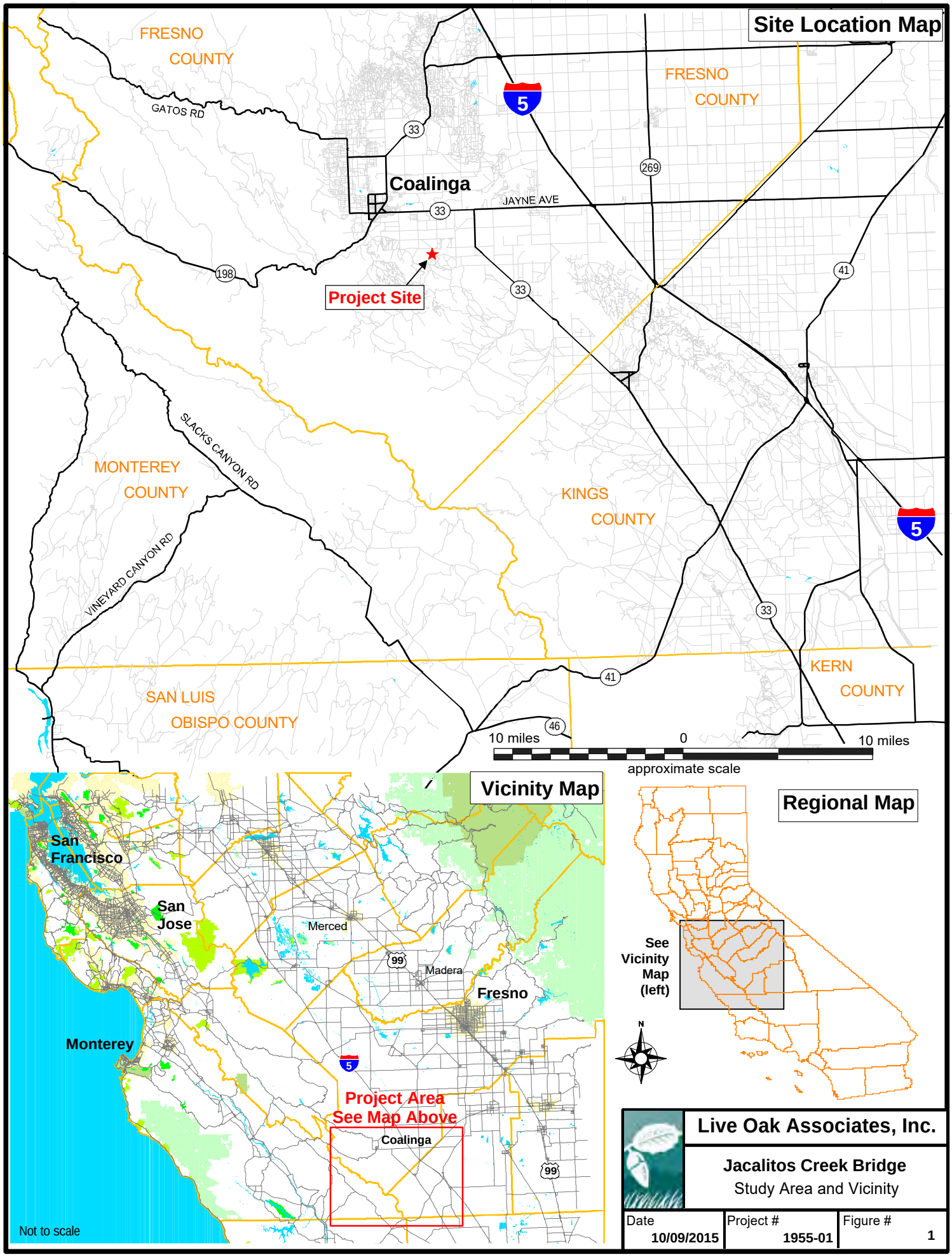
Section 404 of the federal Clean Water Act (CWA) regulates the discharge of dredged or fill material into "navigable waters" (33 U.S.C. §1344), defined in the CWA as "the waters of the United States, including the territorial seas" (33 U.S.C. §1362(7)). By regulation, the U.S. Army Corps of Engineers (USACE) has defined "waters of the United States" to mean:

(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;

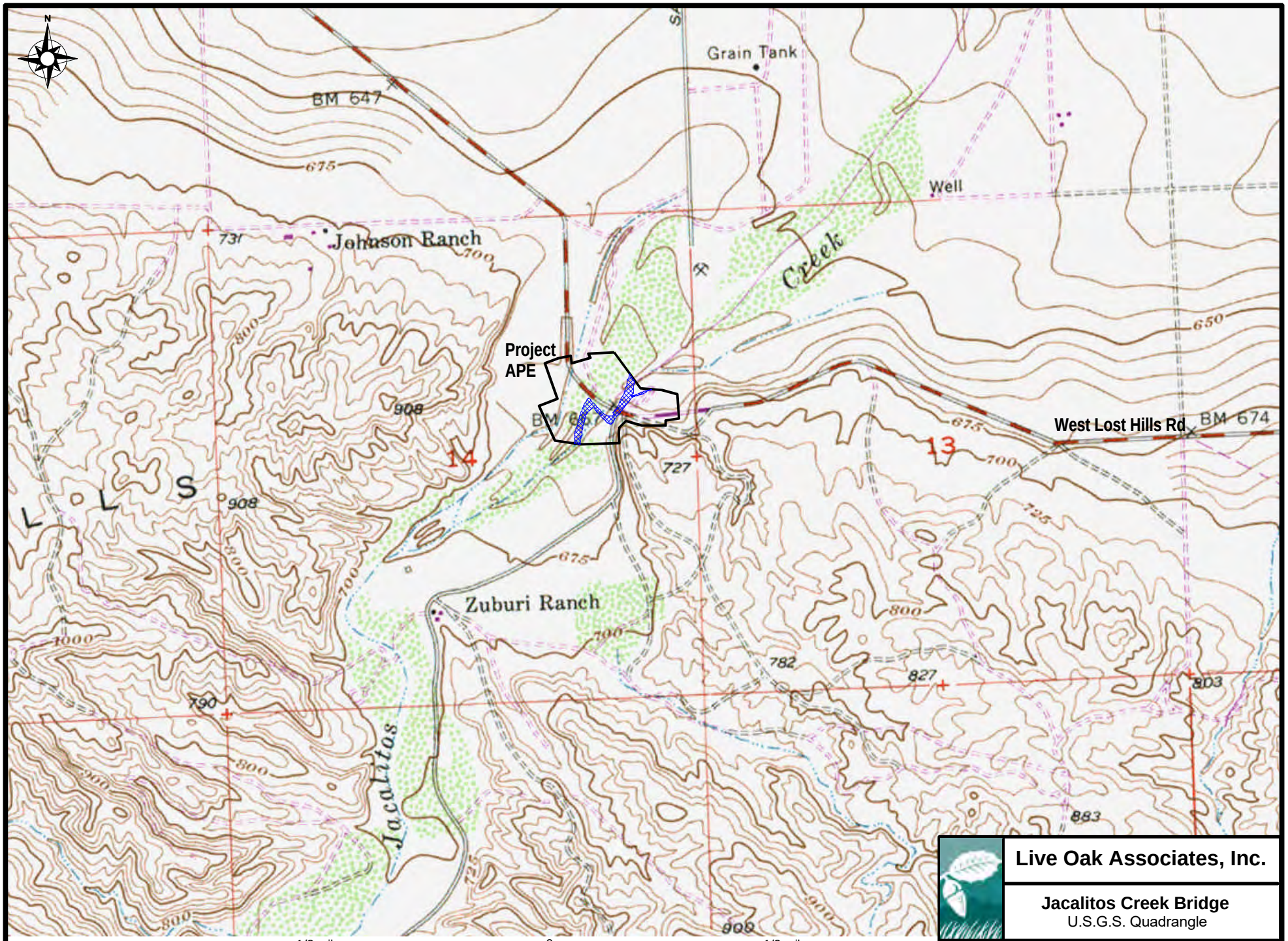
(2) All interstate waters including interstate wetlands;

(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 interstate or foreign commerce including any such waters:

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or



Live Oak Associates, Inc.		
Jacalitos Creek Bridge Study Area and Vicinity		
Date **10/09/2015**	Project # **1955-01**	Figure # **1**



From USGS
Kreyenhagen Hills 7.5' Quadrangle 1971

1/2 mile 0 1/2 mile
approximate scale

Live Oak Associates, Inc.

Jacalitos Creek Bridge
U.S.G.S. Quadrangle

Date	Project #	Figure #
10/09/2015	**1955-01**	**2**

(ii) From which fish or shellfish 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) through (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) through (6) of this section (33 CFR § 328.3(a) (3)).

"Waters of the United States" are subject to the jurisdiction of the USACE and, per provisions of Section 404 of the CWA, the discharge of fill into such waters requires a federal permit issued by the USACE.

1.2 SUPREME COURT DECISIONS AFFECTING THE DEFINITIONS OF WATERS OF THE UNITED STATES

A number of U.S. Supreme Court decisions have attempted to address the jurisdictional status of aquatic features that are not hydrologically connected to navigable waters or their tributaries, or where the hydrologic connection is so insignificant that destruction or modification of the aquatic feature would have little effect on downstream waters of the United States. These Supreme Court decisions are relevant to the analysis of aquatic features within the study area addressed by this report, because these aquatic features are not obviously connected to navigable waters downstream.

1.2.1 SWANCC Decision

In January of 2001, the U.S. Supreme Court ruled in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision) that "non-navigable, isolated, intrastate" waters could not be claimed as jurisdictional by the

USACE on the basis of their use by migratory birds. Although the Court did not specifically address the meaning of the word "isolated," it upheld the jurisdictional status of "adjacent" wetlands (and other waters), which are by definition wetlands that are "bordering, contiguous, or neighboring" other jurisdictional waters. Therefore, the term "isolated wetland" has implicitly been defined as 'wetlands that are not bordering, contiguous, or neighboring' other jurisdictional waters. This definition does not, however, address the degree of proximity necessary to establish that one wetland (or other water) is "adjacent" to a known jurisdictional water. As established by the Supreme Court in the *United States v. Riverside Bayview Homes, Inc.* in 1985, "wetlands separated from other waters by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands.'"

1.2.2 Consolidated Carabell/Rapanos Decision

In June of 2006 the U.S. Supreme Court ruled in the consolidated cases of *June Carabell v. U.S. Army Corps of Engineers* and *John Rapanos v. United States* that wetlands are waters of the United States "if the wetlands, either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.'" When, in contrast, wetlands' effects on water quality are speculative or insubstantial, they fall outside the zone fairly encompassed by the statutory term 'navigable waters.'

On June 5, 2007, the Environmental Protection Agency (EPA) and the USACE jointly issued guidance in interpreting the Carabell/Rapanos cases as they apply to the extent of federal jurisdiction covered by Section 404 of the Clean Water Act. The agencies revised this guidance memorandum on December 2, 2008. The key points of this guidance are that the EPA and the USACE: 1) will assert jurisdiction over traditional navigable waters, wetlands adjacent to traditional navigable waters, relatively permanent non-navigable tributaries of traditional navigable waters where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months), and wetlands that directly abut such tributaries; 2) will decide jurisdiction over relatively impermanent non-navigable tributaries of navigable waters, wetlands adjacent to such tributaries, and

wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary, based on a fact-specific analysis to determine whether they have a "significant nexus" with a traditional navigable water; and 3) generally will not assert jurisdiction over swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow) or ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water. In applying the "significant nexus" standard, the EPA and USACE 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 ecological factors.

1.2.3 Post-Rapanos EPA/USACE Rule

The EPA and USACE published a joint rule in the Federal Register in June of 2015. The rule was an attempt by these agencies to clarify ambiguities of previous Supreme Court decisions. However, in October 2015 the U.S. Court of Appeals for the 6th Circuit granted a nationwide stay against the rule. At the time of the preparation of this report the implementation of the waters of the U.S. rule is still blocked pending future court decisions.

1.3 STATE OF CALIFORNIA JURISDICTION OVER AQUATIC FEATURES

The State of California also asserts jurisdiction over certain drainages and wetlands. The limits of jurisdiction vary slightly from those of the USACE. The California Department of Fish and Wildlife (CDFW) and the Regional Water Quality Control Board (RWQCB) are the two state regulatory agencies responsible for implementing state regulations that identify and protect waters of the state.

According to Section 1602 of the California Fish and Game Code, public and private entities may not substantially divert or obstruct the natural flow of any river, stream, or lake within the state. This section of Fish and Game Code establishes the State's interest in regulating construction activities in the "bed, channel, or bank" of a natural drainage or

stream. A "stream" subject to the jurisdiction of the CDFW has been defined 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" (California Code of Regulations, Title 14).

Since its inception, the RWQCB has had regulatory authority over activities affecting water quality in rivers, streams, lakes, and wetlands of the State. Shortly after the U.S. Supreme Court rendered its SWANCC Decision, the State Water Resources Control Board notified the Regional Boards that isolated waters, including wetlands, were subject to the jurisdiction of the State of California per provisions of the Porter-Cologne Water Quality Control Act (California Water Code, Division 7). The Regional Boards, therefore, now assert jurisdiction over some isolated waters disclaimed as jurisdictional by the USACE.

2.0 METHODS

LOA wildlife/plant/wetland ecologist Jeff Gurule assisted by LOA ecologist Rebekah Jensen conducted a walking survey of the study area for jurisdictional waters in June and July of 2015. The field investigators used aerial photography, a United States Geologic Survey (USGS) topographic map, and project disturbance boundaries to guide the survey efforts. The boundaries of likely jurisdictional waters were mapped using a Trimble Geo XT GPS unit. LOA prepared the maps depicting likely jurisdictional waters using information collected in the field overlaid on a recent aerial photograph from Google Earth.

The surveys were consistent with guidelines found in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987), *Minimum Standards for Acceptance of Preliminary Wetland Delineations* (USACE 2001), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). These surveys have been described in more detail below.

2.1 SURVEY METHODS FOR AREAS MEETING THE TECHNICAL CRITERIA OF JURISDICTIONAL WETLANDS

Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas" (Environmental Laboratory 1987). The diagnostic environmental characteristics of wetlands include hydrophytic vegetation, hydric soils and a hydrology characterized by an aquic or peraquic moisture regime. Accordingly, LOA surveyed the site for wetland indicator plants, positive indicators of hydric soils and wetland hydrology.

Two sampling locations were selected within the study area to assess and collect vegetation, hydrology and soils information associated with observed hydrologic features and adjacent upland areas. The location of sample points was selected to best represent the predominant characteristics of the hydrologic feature(s) or upland area(s). This information was entered onto standard data sheets patterned after those used by the

USACE for the Arid West Region. The data sheet for each numbered sampling location can be found in Appendix A. The numbered sampling locations have been identified on the map depicting the areas meeting the technical criteria of jurisdictional wetlands. Color photographs, presented in Appendix B, were taken at sampling locations of the study area.

Plants observed within a five foot radius of each sampling location were identified to species using *The Jepson Manual: Vascular Higher Plants of California, Second Edition* (Baldwin et al, 2012). The wetland indicator status of each species was obtained from the *1987 Wetland Plant List, California* (Reed 1988). A complete list of vascular plants identified on the study area during 2015 surveys can be found in Appendix C.

Wetland indicator species are so designated according to their frequency of occurrence in wetlands.

OBLIGATE (OBL)	Probability to occur in wetland is >99%
FACULTATIVE WETLAND (FACW)	Probability to occur in wetland is between 67-99%
FACULTATIVE (FAC)	Probability to occur in wetland is between 33 to 67%
FACULTATIVE UPLAND (FACU)	Probability to occur in wetland is between 1 to <33%.
UPLAND (UPL)	Probability to occur in wetland is <1%

Hydrophytic vegetation is considered present when more than 50% of the dominant species at a given location are composed of obligate, facultative wetland and facultative plant species. However, the Arid West Supplemental Guidelines also incorporate an alternate prevalence index to be calculated in determining the presence of wetland vegetation if the dominance test is not met.

Each sampling location was also examined for positive indicators of wetland hydrology and hydric soils. Evidence of wetland hydrology consisted of primary indicators such as surface water, watermarks, drift lines, sediment deposits, etc. Secondary indicators of wetland hydrology include drainage patterns in wetlands, watermarks (Riverine), drift lines (Riverine), sediment deposits (Riverine), etc. In accordance with USACE guidelines, a soil pit 10” to 12” in depth was dug at all sampling locations. The soils

excavated from each pit were also examined for low chromas, gleying, mottling, concretions, sulfidic odors, etc.

2.2 SURVEY METHODS FOR TRIBUTARY WATERS

In the absence of adjacent wetlands, the limit of jurisdiction in navigable rivers and their tributaries, whether inter- or intrastate, extends to "ordinary high water" (OHW). OHW refers to "that line on the shore established by the fluctuation of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

The term "channel" as used in this report refers to a drainage feature with a bed and defined bank. Where drainage channels are present on a given site, it is customary to walk the channel and take width measurements at a standard interval. Width measurements represent the channel width between OHW marks on opposing banks.

The field investigator visually inspected the site for physical characteristics of OHW in order to determine the extent of possible jurisdiction. Accumulation of leaf litter, debris and sediment along the banks of the drainage provided evidence of OHW.

3.0 RESULTS

3.1 SETTING

The portion of Jacalitos Creek within the study area consists of a seasonal creek flowing from southwest to northeast. Vegetation within the channel consists of a mix of native and nonnative species; sparse riparian habitat occurs in portions of the study area.

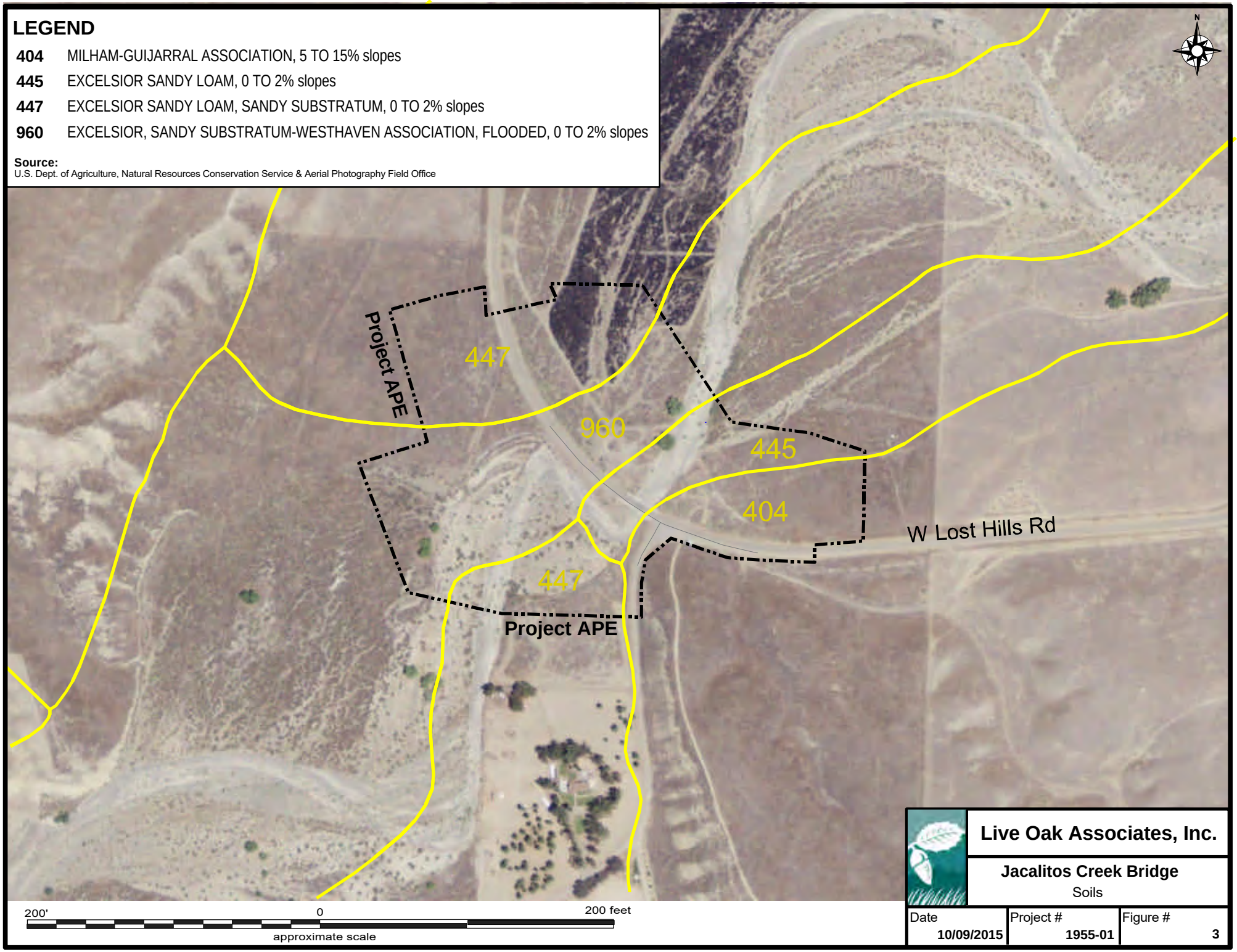
Habitats directly adjacent to the channel consisted of valley saltbush scrub and valley grassland.

With the exception of the channel itself, the study area is relatively flat. The elevation of the study area is approximately 667 feet National Geodetic Vertical Datum (NGVD) (see Figure 2). The study area, like most of California, has a Mediterranean climate with cool moist winters and hot dry summers. Precipitation falls in the form of rain between October and May, with the heaviest amounts in December, January, February, and March. Annual precipitation is approximately 8.25 inches.

The following four soil mapping units were located within the study area: Excelsior, sandy substratum-westhaven association, flooded, 0 to 2 percent slopes; Excelsior sandy loam, sandy substratum, 0 to 2 percent slopes; Excelsior sandy loam, 0 to 2 percent slopes, MLRA 17; and Milham-Guijarral association, 5 to 15 percent slopes (NRCS 2015). These soils are well drained and are not classified as hydric and, therefore, not prone to wetland formation. Figure 3 illustrates the location of these soils across the study area. Detailed information pertaining to these soils can be found in Appendix D.

3.2 POTENTIAL WATERS OF THE UNITED STATES

Potential jurisdictional waters identified within the study area comprised Jacalitos Creek, a potential tributary water of the United States. The remainder of the site consisted of upland habitats supporting native and non-native vegetation. Potential jurisdictional waters identified during the field survey are depicted in Figure 4, and summarized in Table 1.


LEGEND
404 MILHAM-GUIJARRAL ASSOCIATION, 5 TO 15% slopes
445 EXCELSIOR SANDY LOAM, 0 TO 2% slopes
447 EXCELSIOR SANDY LOAM, SANDY SUBSTRATUM, 0 TO 2% slopes
960 EXCELSIOR, SANDY SUBSTRATUM-WESTHAVEN ASSOCIATION, FLOODED, 0 TO 2% slopes
Source:
U.S. Dept. of Agriculture, Natural Resources Conservation Service & Aerial Photography Field Office
N
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447
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404
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Project APE
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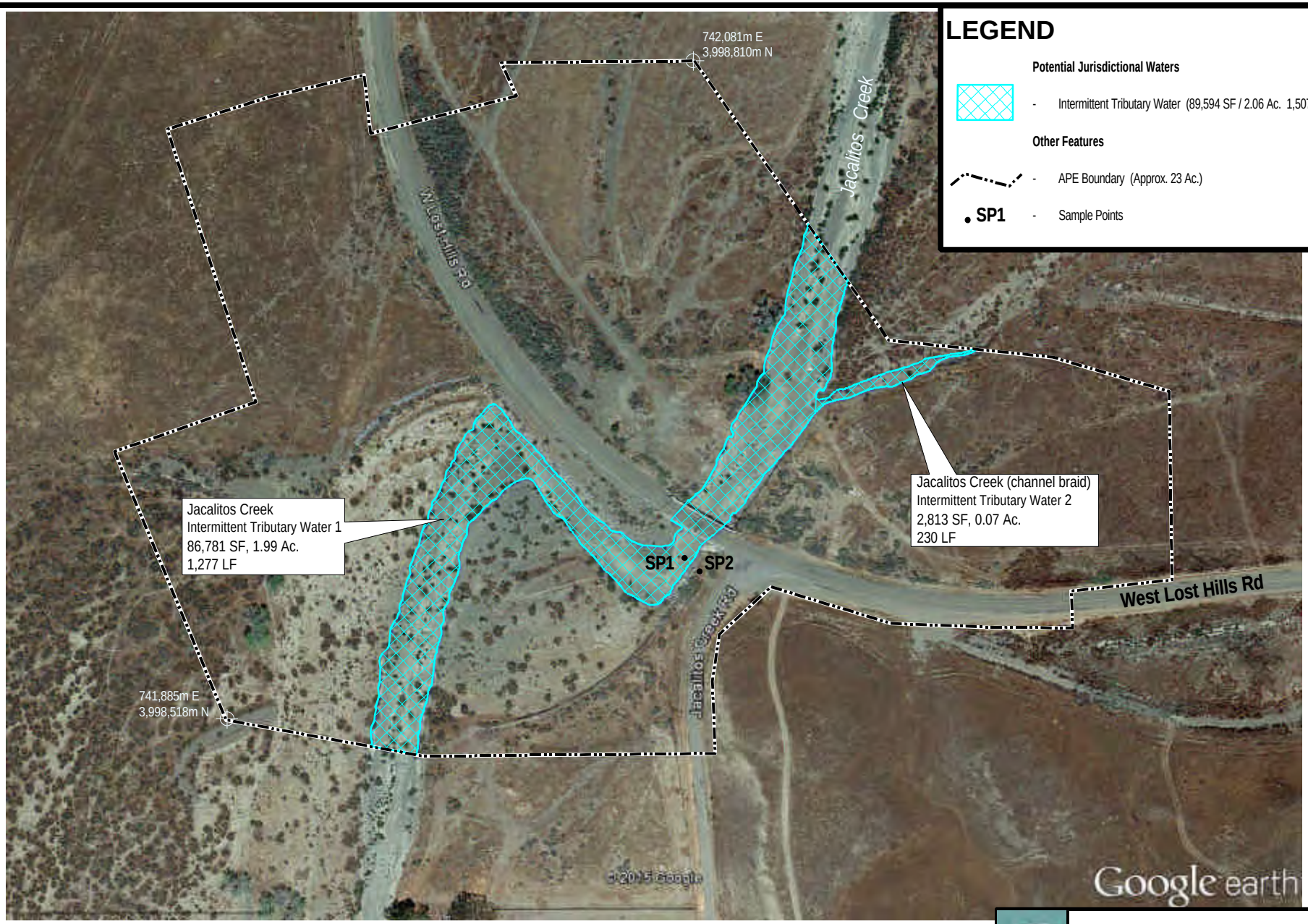
approximate scale
Live Oak Associates, Inc.
Jacalitos Creek Bridge
Soils
Date 10/09/2015
Project # 1955-01
Figure # 3



LEGEND

Potential Jurisdictional Waters

- Intermittent Tributary Water (89,594 SF / 2.06 Ac. 1,507 LF)

Other Features

- APE Boundary (Approx. 23 Ac.)
- SP1 - Sample Points

500' 0 500 feet

Approximate Scale
1' = 200'

Source:
Aerial Photograph Courtesy of Google Earth, 5/2/2015
Universal Transverse Mercator Coordinate System Zone 10, NAD83 / NAVD 1988

Live Oak Associates, Inc.

Jacalitos Creek Bridge
Potential Waters of the U.S.

Date	Project #	Figure #
10/09/2015	1955-01	4

The study area encompassed approximately 1,507 linear feet of Jacalitos Creek. Approximately 89,594 square feet (2.06 acres) of jurisdictional waters was identified within the study area.

Table 1. Potential Jurisdictional Waters Identified on the Study Area.

Type of Potential Jurisdictional Water	Approximate length (lf)	Approximate Area ($ft.^2$)	Approximate Area (acres)
Jacalitos Creek	1,507	89,594	2.06

Potential jurisdictional waters of the site are described below:

3.2.1 Jacalitos Creek Channel

Vegetation: The bottom and lower sides of the channel below the ordinary high water mark were sparsely vegetated with mostly native upland forbs and shrubs, including annual bursage (*Ambrosia acanthicarpa*) (UPL), anglestem buckwheat (*Eriogonum angulosum*) (UPL), California broomshrub (*Lepidospartum squamatum*) (FACU), redstem filaree (*Erodium cicutarium*) (UPL), California matchweed (*Gutierrezia californica*) (UPL), and valley spurge (*Euphorbia ocellata ssp. ocellata*) (UPL). The vegetation was dominated by non-wetland species, and therefore the technical criterion for hydrophytic vegetation was not met.

Soils: The bed and lower banks of Jacalitos Creek were comprised of unconsolidated sand and cobbles. The bed of the channel was not inundated during the site survey. Field indicators of hydric soils were absent at the location of the sample point and not apparent from visual inspection of the rest of the channel within the study area.

Hydrology: Jacalitos Creek supports seasonal flows most years from December through April, corresponding to local winter rainfall patterns. The channel showed evidence of wetland hydrology by having a defined bed and bank, water marks along the banks, obvious flow patterns, and polished cobbles in the channel bed.

Due to the absence of dominant wetland vegetation and field indicators of hydric soils associated with Jacalitos Creek, Jacalitos Creek did not meet the criteria of a jurisdictional wetland. However, the hydrologic indicators of ordinary high water were used to map the limits of potential USACE jurisdiction.

3.3 UPLAND AREAS

The remaining portions of the study area consisted of valley saltbush scrub and valley grassland habitats. These areas did not meet the technical criteria of jurisdictional wetlands.

Vegetation: Weedy non-native plants were the dominant vegetation within upland areas, which included allscale (*Atriplex polycarpha*) (UPL), ripgut brome (*Bromus diandrus*) (UPL), red brome (*Bromus madritensis ssp. rubens*) (UPL), cheeseweed (*Malva sp.*) (UPL), tocalote (*Centaurea melitensis*) (UPL), redstem filaree, California matchweed, and fiddleneck (*Amsinckia sp.*) (UPL), among others.

Soils: No field indicators of hydric soils were observed at the sample location adjacent to the channel. The Munsell soil color notation was 10YR 3/2. No redoximorphic features, such as mottles or oxidized root channels, were observed in these upland soils.

Hydrology: Evidence of wetland hydrology, such as water-stained leaves, saturated or inundated soils, and a drainage pattern in wetlands was lacking in upland areas of the site.

4.0 DISCUSSION

The potential jurisdictional waters mapped on the study area are within OHW of Jacalitos Creek. The watershed of upper Jacalitos Creek to the southwest of the study area drains the east slope of the southern end of the Diablo Range. Jacalitos Creek, after passing through the study area, merges with Los Gatos Creek. Los Gatos Creek continues northeast until it dissipates in the Central San Joaquin Valley north of the City of Huron and east of the California Aqueduct. However, one 19th century map of California shows Los Gatos Creek reaching the North Fork Kings River as it turned south toward Tulare Lake (Vincent 1860). Because the USACE has set a precedent of claiming all historic tributaries of historic Tulare Lake and the USACE has previously claimed Los Gatos Creek as a water of the U.S., the delineated water of the study area could meet the criteria of a water of the United States.

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APPENDIX A: WETLAND DATA SHEETS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Jacalitos Creek Bridge City/County: Fresno Co. Sampling Date: 7/14/15

Applicant/Owner: County of Fresno State: CA Sampling Point: 1

Investigator(s): J. Gorule + R. Jensen Section, Township, Range: Section 14, T21S, R15E

Landform (hillslope, terrace, etc.): Stream channel Local relief (concave, convex, none): Concave Slope (%): 2%

Subregion (LRR): C Lat: 105 742083.20 E Long: 3998594.49 N Datum: UTM NAD83

Soil Map Unit Name: Excelsior Sandy Loam, 0 to 2% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Area a desert wash or intermittant stream.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Euphorbia ocellata ocellata	3	Yes	UPL
2. Eriogonum angulosum	3	Yes	UPL
3. Ambrosia acanthicarpa	2		UPL
4.			
5. Erodium cicutarium	1		UPL
6. Brassicaceae unk.	<1		UPL
7.			
8.			
Total Cover:	10		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Wetland vegetation is absent. All vegetation upland.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12							gravelly sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Gravelly sand in desert wash. Cemented in places. Hydric soils absent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Area a desert wash. Mostly a sandy, cobbely bed. A few areas contained cracked silt deposits.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Jacalitos Creek Bridge City/County: Fresno Co. Sampling Date: 7/14/15

Applicant/Owner: County of Fresno State: CA Sampling Point: 2

Investigator(s): J. Gurule + R. Jensen Section, Township, Range: Section 14, T 21 S, R 15 E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): 5%

Subregion (LRR): C Lat: 10S 742089.37 E Long: 3998586.94 N Datum: UTM NAD83

Soil Map Unit Name: Milham-Guijarral Association, 5 to 15 % slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Area is an upland terrace adjacent to Jacalitos Creek.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Bromus madritensis	20	Yes	UPL
2. Centaurea melitensis	3		UPL
3. Bromus diandrus	1		UPL
4. Malva sp.	1		UPL
5. Erodium cicutarium	3		UPL
6. Atriplex polycarpha	12	Yes	FACU
7. Amsinckia sp.	2		UPL
8.			
Total Cover:	42		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Wetland vegetation is absent. All vegetation upland or FACU.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					gravelly Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Hydric soils absent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology absent

Area an upland terrace above stream channel.

APPENDIX B: SELECTED PHOTOGRAPHS OF THE STUDY AREA

Photo 1. Sample Point 1 within OHW of Jacalitos Creek channel.

Photo 2. Sample Point 2 within uplands adjacent to Jacalitos Creek channel.

APPENDIX C: VASCULAR PLANTS OF THE SAND CREEK STUDY AREA

APPENDIX A: VASCULAR PLANTS OF THE STUDY AREA

The plant species listed below have been observed on the study area during 2015 surveys conducted by Live Oak Associates, Inc. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland

ANACARDIACEAE – Sumac Family		
Pistacia chinensis	Chinese pistachio	UPL
AMARANTHACEAE – Amaranth Family		
Amaranthus albus	white amaranth	FACU
ASTERACEAE – Sunflower Family		
Ambrosia acanthicarpa	annual bursage	UPL
Baccharis salicifolia	mule fat	FAC
Centaurea melitensis	tocalote	UPL
Deinandra kelloggii	Kellogg's tarweed	UPL
Gutierrezia californica	California matchweed	UPL
Helianthus annuus	common sunflower	FACU
Lepidospartum squamatum	California broomshrub	FACU
Stephanomeria pauciflora	wire lettuce	UPL
BORAGINACEAE – Borage Family		
Amsinckia sp.	fiddleneck	UPL
Heliotropium curassavicum	salt heliotrope	FACU
BRASSICACEAE – Mustard Family		
Hirschfeldia incana	short podded mustard	UPL
Lepidium sp.		
Sisymbrium sp.		
CHENOPODIACEAE – Goosefoot Family		
Atriplex polycarpa	allscale	UPL
Salsola tragus	Russian thistle	FACU
EUPHORBIACEAE – Spurge Family		
Croton setigerus	dove weed	UPL
Euphorbia ocellata ocellata	valley spurge	UPL
GERANIACEAE – Geranium Family		
Erodium cicutarium	red-stemmed filaree	UPL
MALVACEAE – Mallow Family		
Malva sp.	cheeseweed	UPL
POACEAE – Grass Family		
Avena sp.	oats	UPL
Bromus diandrus	ripgut brome	UPL

Bromus madritensis ssp. *rubens*	red brome	UPL
Cynodon dactylon	Bermuda grass	FACU
Hordeum murinum ssp. *leporinum*	foxtail barley	FACU
Schismus sp.	schismus	UPL
Triticum aestivum	wheat	UPL
POLYGONACEAE – Buckwheat Family		
Eriogonum angulosum	anglestem buckwheat	UPL
POLEMONIACEAE – Pink Family		
Eriastrum hooveri	Hoover's eriastrum	UPL
SALICACEAE – Willow Family		
Populus fremontii ssp. fremontii	Fremont cottonwood	UPL

APPENDIX D: SOILS INFORMATION

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Fresno County, California, Western Part

404—Milham-Guijarral association, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: hnzb
Elevation: 520 to 1,450 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 63 to 65 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Milham, sandy loam, and similar soils: 55 percent
Guijarral, sandy loam, and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Milham, Sandy Loam

Setting

Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium derived from calcareous sedimentary rock

Typical profile

A - 0 to 6 inches: sandy loam
Bt - 6 to 16 inches: sandy clay loam
Btk - 16 to 31 inches: sandy clay loam
Bk - 31 to 60 inches: sandy loam

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 8 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 12.0
Available water storage in profile: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Loamy 6-8" P.Z. (R017XG043CA)

Description of Guijarral, Sandy Loam

Setting

Landform: Fan remnants
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear

Across-slope shape: Linear
Parent material: Alluvium derived from calcareous sedimentary rock

Typical profile

Ap1 - 0 to 3 inches: sandy loam
Ap2 - 3 to 6 inches: sandy loam
Bw - 6 to 12 inches: sandy loam
Bk1 - 12 to 24 inches: gravelly sandy loam
Bk2 - 24 to 36 inches: gravelly sandy loam
Bk3 - 36 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Loamy 6-8" P.Z. (R017XG043CA)

Minor Components

Guijarral, sandy loam, gently sloping

Percent of map unit: 5 percent
Landform: Fan remnants

Polvadero, sandy loam

Percent of map unit: 5 percent
Landform: Fan remnants

Cyvar, loam

Percent of map unit: 3 percent
Landform: Fan remnants

Guijarral, sandy loam, hilly

Percent of map unit: 2 percent
Landform: Fan remnants

445—Excelsior sandy loam, 0 to 2 percent slopes, MLRA 17

Map Unit Setting

National map unit symbol: 2ss8v
Elevation: 200 to 1,000 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 62 to 65 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Excelsior and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Excelsior

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous coarse-loamy alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 7 inches: sandy loam
A - 7 to 23 inches: sandy loam
C - 23 to 72 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7c

Hydrologic Soil Group: A

Minor Components

Cerini
Percent of map unit: 6 percent
Landform: Alluvial fans

Excelsior
Percent of map unit: 4 percent
Landform: Alluvial fans

Kimberlina
Percent of map unit: 3 percent
Landform: Alluvial fans

Westhaven
Percent of map unit: 1 percent
Landform: Alluvial fans

Bakersfield
Percent of map unit: 1 percent

447—Excelsior sandy loam, sandy substratum, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: hnzw
Elevation: 180 to 900 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 62 to 64 degrees F
Frost-free period: 240 to 280 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Excelsior, sandy loam, sandy substratum, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Excelsior, Sandy Loam, Sandy Substratum

Setting
Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from calcareous sedimentary rock

Typical profile
Ap - 0 to 7 inches: sandy loam
A - 7 to 23 inches: sandy loam
C1 - 23 to 53 inches: stratified loamy sand to silt loam

C2 - 53 to 72 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B

Minor Components

Kimberlina, sandy loam

Percent of map unit: 4 percent
Landform: Alluvial fans

Excelsior, sandy loam

Percent of map unit: 4 percent
Landform: Alluvial fans

Polvadero, sandy loam

Percent of map unit: 2 percent
Landform: Fan remnants

Wasco, sandy loam

Percent of map unit: 2 percent
Landform: Alluvial fans

Excelsior, sandy loam, saline-sodic

Percent of map unit: 2 percent
Landform: Alluvial fans

Westhaven, loam

Percent of map unit: 1 percent
Landform: Alluvial fans

960—Excelsior, sandy substratum-westhaven association, flooded, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp2l

Elevation: 310 to 850 feet
Mean annual precipitation: 7 to 8 inches
Mean annual air temperature: 62 to 64 degrees F
Frost-free period: 240 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Excelsior, sandy loam, sandy substratum, and similar soils: 50 percent
Westhaven, loam, and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Excelsior, Sandy Loam, Sandy Substratum

Setting

Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Tread
Microfeatures of landform position: Bars and channels
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from calcareous sedimentary rock

Typical profile

A1 - 0 to 7 inches: sandy loam
A2 - 7 to 23 inches: sandy loam
C1 - 23 to 53 inches: stratified loamy sand to silt loam
C2 - 53 to 72 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: Occasional
Calcium carbonate, maximum in profile: 3 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B

Description of Westhaven, Loam

Setting

Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Tread
Microfeatures of landform position: Bars and channels
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from calcareous sedimentary rock

Typical profile

Ap - 0 to 7 inches: loam
Bw - 7 to 17 inches: loam
Bk1 - 17 to 42 inches: stratified loam to silty clay loam
Bk2 - 42 to 65 inches: stratified loamy sand to silty clay loam
C - 65 to 72 inches: stratified loam to silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: Occasional
Calcium carbonate, maximum in profile: 4 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 12.0
Available water storage in profile: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C

Minor Components

Ciervo, clay

Percent of map unit: 10 percent
Landform: Fan skirts

Excelsior, sandy loam

Percent of map unit: 5 percent
Landform: Alluvial fans, flood plains
Microfeatures of landform position: Bars and channels

Cerini, clay loam

Percent of map unit: 3 percent
Landform: Alluvial fans

Anela, very gravelly sandy loam
Percent of map unit: 2 percent
Landform: Flood plains

Data Source Information

Soil Survey Area: Fresno County, California, Western Part
Survey Area Data: Version 9, Sep 30, 2014

Jacalitos Creek Bridge Replacement on Lost Hills Avenue *BA*

Biological Assessment

FRESNO COUNTY, CALIFORNIA
Kreyenhagen Hills 7.5 minute Quadrangle
Township 21 South, Range 15 East, Section 14
Caltrans District 6
BRLO-5942(234)
[FWS/NOAA FISHERIES File Number]

July 2017

CALIFORNIA DEPARTMENT OF TRANSPORTATION

Biological Assessment

FRESNO COUNTY, CALIFORNIA
Kreyenhagen Hills 7.5 minute Quadrangle
Township 21 South, Range 15 East, Section 14
Caltrans District 6
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July 2017

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For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attn: Larry E. Planner, Environmental Planning, 50 Higuera Street, San Luis Obispo, CA 93401; (805) xxx-xxxx (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

Acronym List

APE: Area of Potential Effects

BA: Biological Assessment

BNLL: Blunt-nosed Leopard Lizard

BMP: Best Management Practice

BO: Biological Opinion

CDFW: California Department of Fish and Wildlife

CEQA: California Environmental Quality Act

CESA: California Endangered Species Act

CNDDB: California Natural Diversity Database

CNPS: California Native Plant Society

EFH: Essential Fish Habitat

ESA: Endangered Species Act

FESA: Federal Endangered Species Act

GKR: Giant Kangaroo Rat

JD: Jurisdictional Determination

LOA: Live Oak Associates, Inc.

NEPA: National Environmental Policy Act

NES: Natural Environment Study

NOAA: National Oceanic and Atmospheric Administration

NWP: Nationwide Permit

SJKF: San Joaquin Kit Fox

USACE: United States Army Corps of Engineers

USC: United States Code

USFWS: United States Fish and Wildlife Service

USGS: United States Geological Survey

Glossary

A

AREA OF POTENTIAL EFFECT (APE): A term used in Section 106 of the National Historic Preservation Act to describe the area in which historic resources may be affected by a federal undertaking.

ARID: Dry.

B

BEST MANAGEMENT PRACTICE (BMP): Any program, technology, process, operating method, measure, or device that controls, prevents, removes or reduces pollution.

C

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA): State legislation enacted in 1970 and subsequently amended. It requires public agencies to regulate activities which may affect the quality of the environment so that major consideration is given to preventing damage to the environment.

CORRIDOR: A strip of land between two termini within which traffic, topography, environment, and other characteristics are evaluated for transportation purposes.

CUMULATIVE IMPACT (CEQA): The CEQA definition of cumulative impact comes from the Office of Planning and Research (OPR). Section 15355 of OPR's CEQA Guidelines provides the following context:

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

a) The individual effects may be changes resulting from a single project or a number of separate projects.
b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

CUMULATIVE IMPACT (NEPA): The NEPA definition of a cumulative impact comes from the Council on Environmental Quality (CEQ), which defines a cumulative impact as:

> …the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR §1508.7.)

D

DIRECT EFFECTS: Effects that are caused by and action and occur at the same time and place as the action.

E

ECOSYSTEM: The biotic community and its abiotic environment functioning on a system.

ENDANGERED: Plant or animal species that are in danger of extinction throughout all or a significant portion of its range.

ENDEMIC, ENDEMISM: Restricted to a given region (e.g., endemic to California).

ENVIRONMENTAL DOCUMENT: "Environmental Document" means draft or final Environmental Impact Statement (EIS) or Environmental Impact Report (EIR), Finding of No Significant Impact (FONSI), Environmental Assessment (EA) or Negative Declaration (ND)/Mitigated Negative Declaration (MND). A categorical exemption or exclusion is not considered an environmental document; it is rather the determination that the project is exempt/excluded from the requirement to prepare an environmental document.

EPHEMERAL: Lasting for only a short time; transitory; short-lived.

EROSION: The wearing away of the land surface by running water, wind, ice, or other geological agents.

EXTANT: Still in existence.

F

FEDERAL HIGHWAY ADMINISTRATION (FHWA): The Federal agency within the U.S. Department of Transportation responsible for administering the Federal-aid Highway Program and the Motor Carrier Safety Program.

FEDERAL REGISTER (FR): The *Federal Register* is the official daily publication for agency rules, proposed rules, and notices of federal agencies and organizations, as well as for Executive Orders and other presidential documents.

FLOODPLAIN: Any land area subject to inundation by floodwaters from any source.

FRIABLE: Easily crumbled (as in friable soil).

G

H

HABITAT: Place where a plant or animal lives.

HYDRIC SOIL: Soil subject to saturation or inundation.

I

INDIRECT EFFECTS: Effects that are caused by an action and occur later in time, or at another location, yet are reasonably foreseeable.

INITIAL STUDY (IS): Under CEQA, the Initial Study is prepared to determine whether there may be significant environmental effects resulting from a project. The Initial Study is attached to the Negative Declaration or Mitigated Negative Declaration. It can become the basis of an EIR if it concludes that the project may cause significant environmental effects that cannot be mitigated below the level of significance.

J

K

L

LEAD AGENCY (CEQA): "Lead Agency" means the public agency which has primary responsibility for carrying out or approving a project which may have a significant effect on the environment and preparing the environmental document.

LEAD AGENCY (NEPA): The agency or agencies preparing or having taken primary responsibility for preparing the environmental impact statement.

M

MITIGATED NEGATIVE DECLARATION (MND): The CEQA document that is used when the Initial Study concludes that a project's potential significant effect on the environment can be reduced below the level of significance with the incorporation of mitigation measures.

N

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA): Enacted in 1969, NEPA requires all federal agencies to consider environmental factors through a systematic interdisciplinary approach before committing to a course of action. The NEPA process is an overall framework for the environmental evaluation of federal actions.

NEGATIVE DECLARATION (ND): The CEQA document that is used when the Initial Study concludes that a project will have no significant impact on the environment.

O

P

PLAYA: A shallow temporary lake that may form in alkali sinks.

PROJECT (CEQA): California Public Resources Code §21065 defines a "project" as an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and which is any of the following:

A. An activity directly undertaken by any public agency.
B. An activity undertaken by a person which is supported, in whole or in part, throughout contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies.
C. An activity that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.

PROJECT (FHWA): 23 Code of Federal Regulations §1.2 defines a project as an undertaking by a State highway department for highway construction, including preliminary engineering, acquisition of rights-of-way and actual construction, or for highway planning and research, or for any other work or activity to carry out the provisions of the Federal laws for the administration of Federal-aid for highways.

Q

R

REGULATORY AGENCY: An agency that has jurisdiction by law.

REVEGETATION: Planting of indigenous plants to replace natural vegetation that is damaged or removed as a result of highway construction projects or permit requirements.

RIGHT-OF-WAY: A general term denoting land, property, or interest therein, usually in a strip acquired for or devoted to transportation purposes.

ROCK-SLOPE PROTECTION: Randomly placed rock or concrete used to strengthen an embankment or protect it from erosion.

RUDERAL: Disturbed area with a prevalence of introduced weedy species. Ruderal habitats are associated with unpaved highway shoulders and weedy areas around and between dwellings and other structures.

S

SIGNIFICANCE (CEQA): CEQA defines a "significant effect on the environment" as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant" (15382).

CEQA requires that the lead agency identify each "significant effect on the environment" resulting from the project and avoid or mitigate it.

The CEQA Guidelines include mandatory findings of significance for certain effects, thus requiring the preparation of an EIR.

SIGNIFICANCE (NEPA): Under NEPA, an EIS is required when the proposed federal action has the potential to "significantly affect the quality of the human environment." To determine that potential, one must consider both the context in which the action takes place and the intensity of its effect. Section 1508.27 of the CEQ regulations defines the term "significantly" as:

Significantly as used in NEPA requires considerations of both context and intensity:

A. Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.
B. Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:
    1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
    2. The degree to which the proposed action affects public health or safety.
    3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
    4. The degree to which the effects on the quality of the human environment are likely to be highly controversial
    5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks
    6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration
    7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
    8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.
    9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
    10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment. [43 FR 56003, Nov. 29, 1978; 44 FR 874, Jan. 3, 1979].

SPECIAL-STATUS SPECIES: Plant or animal species that are either (1) federally listed, proposed for or a candidate for listing as threatened or endangered; (2) bird species protected under the federal Migratory Bird Treaty Act; (3) protected under state endangered species laws and regulations, plant protection laws and regulations, Fish and Game codes, or species of special concern listings and policies; or (4) recognized by national, state, or local environmental organizations (e.g., California Native Plant Society).

T

THREATENED: A species that is likely to become endangered in the foreseeable future in the absence of special protection.

U

V

W

WATERS OF THE UNITED STATES: As defined by the United States Army Corps of Engineers (USACE) in 33 CFR 328.3(a):

1. All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that 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 interstate or 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 shellfish are or could be taken and sold in interstate or foreign commerce; or
    (iii) Which are used or could be used for industrial purposes by industries in interstate commerce;
4. All impoundment of waters otherwise defined as waters of the United States under this definition;
5. Tributaries of waters identified in paragraphs 1-4;
6. The territorial seas;
7. Wetlands adjacent to waters (waters that are not wetlands themselves) identified in paragraphs 1-6.

Biological Assessment Outline for Caltrans FESA Section 7 Consultations:

National Marine Fisheries Service and

U.S. Fish and Wildlife Service

Executive Summary

The purpose of this biological assessment is to provide technical information and to review the proposed project in sufficient detail to determine to what extent the proposed project may affect threatened, endangered, or proposed species. The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this biological assessment under its assumption of responsibility at 23 United States Code (USC) 327(a)(2)(A). The biological assessment is also prepared in accordance with 50 CFR 402, legal requirements found in Section 7 (a)(2) of the Endangered Species Act (16 U.S.C. 1536(c)) and with Federal Highway Administration and California Department of Transportation regulation, policy and guidance. The document presents technical information upon which later decisions regarding project effects are developed.

The County of Fresno (County), in cooperation with Caltrans, is proposing to replace the existing bridge on Lost Hills Road over Jacalitos Creek (Project) and make associated improvements that will repair and/or stabilize the creek banks upstream and downstream of the bridge. The Project is necessary to update the bridge to current standards. The proposed Project will occur within an area of approximately 8.0 acres, hereafter referred to as the Action Area. Permanent impacts will occur on 1.9 acres, much of which constitutes previously developed land that experiences regular disturbance from vehicle traffic and road shoulder maintenance. Temporary impacts will occur on 5.6 acres of the Action Area.

The Action Area comprises ruderal areas consisting of ranch roads and the paved surface and scraped dirt shoulder of Lost Hills Road and Jacalitos Creek Road, valley saltbush scrub, and the Jacalitos Creek channel and floodplain. Although trees are absent from the Action Area, it does supports abundant native and non-native grasses, herbs, and shrubs.

The Action Area provides potential habitat for two (2) regionally-occurring federally listed plant species: the federally endangered California jewelflower (*Caulanthus californicus*) and the federally endangered San Joaquin woollythreads (*Monolopia congdonii*). Protocol-level surveys were conducted during the appropriate blooming periods for these species during the spring of 2016. Neither of these federally listed plant species, nor any other special status plant species, were observed. Therefore, the Project is not expected to produce direct or indirect effects on listed plant species. Based on the absence of these federally listed species, a “no-effect” determination has been made for the California jewelflower and San Joaquin woollythreads.

The Action Area provides potential habitat for three (3) of the eight (8) federally listed animal species occurring in the Project vicinity. These species include the blunt-nosed leopard lizard (BNLL) (*Gambelia sila*), giant kangaroo rat (GKR) (*Dipodomys ingens*), and San Joaquin kit fox

(SJKF) (*Vulpes macrotis mutica*). Protocol-level surveys found the BNLL and GKR absent from the Action Area. A small amount of project-related disturbance to potentially suitable habitat for these species would occur, most of which would be temporary. This habitat disturbance could have a small indirect effect on these species by temporarily reducing the quality of available habitat in the region. Conservation measures for these species include project minimization measures and an education program for construction personnel, and, for the BNLL, preconstruction surveys and avoidance of any individuals detected. While LOA surveys found no evidence of utilization, one (1) federally listed animal species, the SJKF, could potentially occur on the Action Area. Potential direct effects to this species include potential injury or mortality of individuals from entrapment or encounters with construction equipment, as well as construction-related disturbance resulting in SJKF avoidance of the Action Area during construction. Indirect effects include the temporary loss of a small amount of potential foraging and denning habitat. Conservation measures consisting of preconstruction surveys, avoidance of active dens, project minimization measures, and education program will reduce the magnitude of project effects to SJKF. Based on the absence of these federally listed animal species during surveys and the low probability of Project effects to these species, a “may affect-not likely to adversely affect” determination has been made for the BNLL, GKR, and SJKF.

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Chapter 1. Introduction

1.1. Purpose and Need of the Proposed Action

The purpose of the Project is to replace the Lost Hills Road bridge over Jacalitos Creek with a bridge that meets current engineering standards and to place rock slope protection sufficient to protect the new bridge and existing roadway from floodwaters. This action is necessary to ensure public safety and protect publicly funded infrastructure.

1.2. Threatened, Endangered, Proposed Threatened or Proposed Endangered Species, Critical Habitat

An updated species list was provided by U.S. Fish and Wildlife Service (USFWS) (see Appendix A). There is no National Marine Fisheries Service (NOAA FISHERIES) species list associated with the USGS quadrangle in which the Action Area occurs. The following listed and proposed species and/or designated critical habitats were identified on the updated federal species list and were considered during this analysis. A map of documented occurrences of these species within 10 miles of the Action Area is presented in Figure 1.

Plant Species

- California Jewel-Flower (*Caulanthus californicus*) FE
- San Joaquin Woollythreads (*Monolopia congdonii*) FE

Animal Species

- Vernal Pool Fairy Shrimp (*Branchinecta lynchi*) FT
- Delta Smelt (*Hypomesus transpacificus*) FT
- California Red-Legged Frog (*Rana aurora draytonii*) FT
- California Tiger Salamander (*Ambystoma californiense*) FT
- Blunt-Nosed Leopard Lizard (BNLL) (*Gambelia sila*) FE
- California Condor (*Gymnogyps californianus*) FE
- Giant Kangaroo Rat (GKR) (*Dipodomys ingens*) FE
- San Joaquin Kit Fox (SJKF) (*Vulpes macrotis mutica*) FE

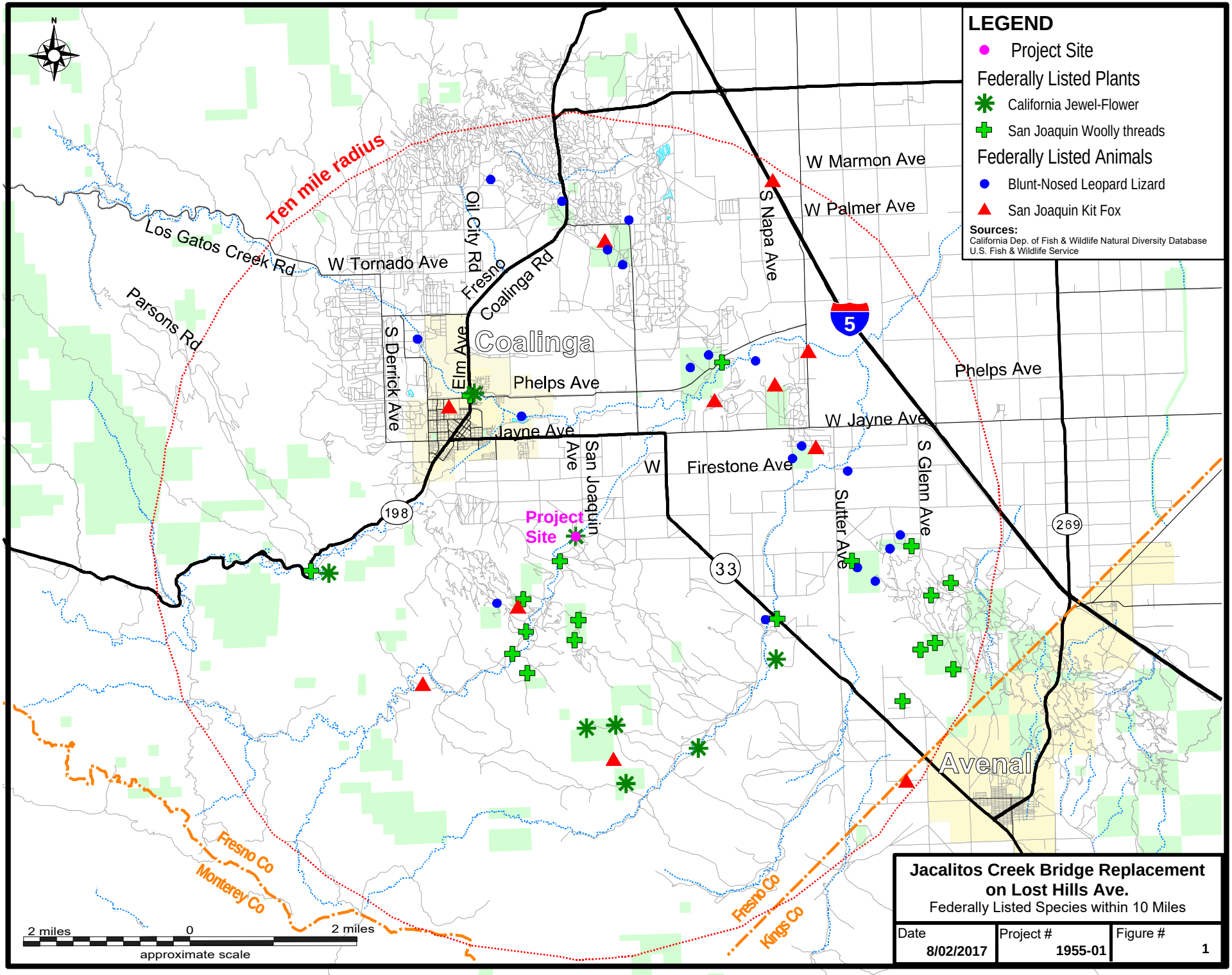

LEGEND
Project Site
Federally Listed Plants
California Jewel-Flower
San Joaquin Woolly threads
Federally Listed Animals
Blunt-Nosed Leopard Lizard
San Joaquin Kit Fox
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
Ten mile radius
Los Gatos Creek Rd
Parsons Rd
W Tornado Ave
Oil City Rd
Fresno
Coalinga Rd
S Derrick Ave
Elm Ave
Coalinga
Phelps Ave
Jayne Ave
San Joaquin Ave
W Marmon Ave
W Palmer Ave
S Napa Ave
5
Phelps Ave
W Jayne Ave
W Firestone Ave
S Glenn Ave
Sutter Ave
198
33
269
Project Site
Avenal
Fresno Co
Monterey Co
Fresno Co
Kings Co
2 miles
0
2 miles
approximate scale
Jacalitos Creek Bridge Replacement on Lost Hills Ave.
Federally Listed Species within 10 Miles
Date
8/02/2017
Project #
1955-01
Figure #
1

Table 1: Federally Listed Species Potentially Occurring or Known to Occur in the Action Area.

Plant Species

Species	Status	Habitat	Occurrence in Action Area	Determination
California Jewel-Flower (*Caulanthus californicus*)	FE	Chenopod scrub, valley and foothill grassland. Blooms February-May.	**A.** Although the CNDDB lists a 1931 occurrence of this species in the Action Area, subsequent surveys determined that that the population may have been extirpated. Protocol-level botanical surveys conducted by LOA in 2016 found no evidence of this species in the Action Area.	No Effect.
San Joaquin Woollythreads (*Monolopia congdonii*)	FE	Chenopod scrub, valley and foothill grassland that have alkaline loamy to sandy soils. Blooms February-May.	**A.** Protocol-level botanical surveys conducted by LOA in 2016 found no evidence of this species in the Action Area.	No Effect.

Animal Species

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	FT	Found in vernal pools of California's Central Valley.	**A.** Vernal pools required by this species are absent from the Action Area.	No Effect.
Delta Smelt (*Hypomesus transpacificus*)	FT	This slender-bodied fish is endemic to the San Francisco Bay and Sacramento-San Joaquin Delta upstream through Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties.	**A.** Suitable habitat is absent from the Action Area due to the absence of perennial waters onsite and upstream from the site. Furthermore, the Action Area is situated well outside of the known distribution of this species.	No Effect.
California Red-Legged Frog (*Rana aurora draytonii*)	FT	Perennial rivers, creeks and stock ponds of the Coast Range and northern Sierra foothills with overhanging vegetation.	**A.** Suitable habitat for this species is absent from the Action Area and surrounding region.	No Effect.
California Tiger Salamander (*Ambystoma californiense*)	FT	Requires vernal pools for breeding and rodent burrows in annual grasslands for refuge.	**A.** Suitable breeding habitat for this species is absent from the Action Area and surrounding region.	No Effect.
Blunt-Nosed Leopard Lizard (*Gambelia silus*)	FE	Frequents grasslands, alkali meadows and chenopod scrub of the San Joaquin Valley from Merced County south to Kern County.	**HP.** Potentially suitable habitat is present. However, protocol-level BNLL surveys conducted by LOA in 2015/2016 found no evidence of this species in the Action Area.	May Affect, Not Likely To Adversely Effect.
California Condor (*Gymnogyps californianus*)	FE	Vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Nests in deep canyons that contain clefts in rocky walls.	**A.** Nesting habitat is absent from the Action Area. No documented occurrences of California condor are known in the region.	No Effect.

Animal Species (cont'd)

Species	Status	Habitat	Occurrence in Action Area	Determination
Giant Kangaroo Rat (*Dipodomys ingens*)	FE	Inhabits grasslands on gentle slopes generally less than 10°, with friable, sandy-loam soils within the west side of the southern San Joaquin Valley and adjacent coastal foothills.	**HP**. Protocol-level kangaroo rat surveys conducted within the Action Area found no GKR occupying the site. Although the Action Area is within the historic range of this species, there are no known populations of this species in the vicinity of the Action Area. In fact, the nearest documented observations of this species occur approximately 25 miles to the northwest and 26 miles to the southeast of the Action Area (CDFW 2017a). However, the USFWS considers the Coalinga area to be historic GKR habitat.	May Affect, Not Likely to Adversely Affect.
San Joaquin Kit Fox (*Vulpes macrotis mutica*)	FE	Frequents desert alkali scrub and annual grasslands and may forage in adjacent agricultural habitats. Utilizes enlarged (4 to 10 inches in diameter) ground squirrel burrows as denning habitat.	**HP.** Burrows of suitable size were not observed during numerous field surveys of the site. However, there have been 11 documented occurrences within ten miles of the site. Therefore, a kit fox may pass through the site during foraging or dispersal movements.	May Affect, Not Likely to Adversely Affect

- Absent [A]- No habitat present and no further work needed.
- Habitat Present [HP]- Habitat is, or may be present. The species may be present.
- Present [P]- Species is present
- Critical Habitat [CH]- Project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.
- Status: - Federal Endangered (FE); Federal Threatened (FT); State Endangered (SE); State Threatened (ST); State Fully Protected (SFP); State Rare (SR); State Species of Special Concern (SSC); California Native Plant Society (CNPS)

Candidate Species

Federal candidate species are absent from the Action Area and surrounding region.

Critical Habitat

Critical habitat is absent from the Action Area and surrounding lands.

1.3. Consultation History

The County and LOA have been coordinating with Caltrans biologist Elmer Llamas during the preparation of the required Caltrans documents for the project. To date LOA has submitted a Caltrans NES report and a wetland delineation report and map that Mr. Llamas submitted to the USACE for verification.

1.4. Description of Proposed Action

1.4.1. Project Summary

The proposed action would entail the construction of a replacement 2-lane bridge and the placement of rock slope protection along the banks of Jacalitos Creek that will protect the integrity of the new bridge from creek erosion. Jacalitos Creek Road may need to be permanently shifted slightly at the intersection with Lost Hills Avenue to accommodate approach railing. This shift would likely result in cutting back a steep hillside east of Jacalitos Creek Road.

Further investigation is required to determine the bridge design; however, a conceptual design is presented in Appendix B. The proposed structure could be approximately 140' in length and approximately 32' in width.

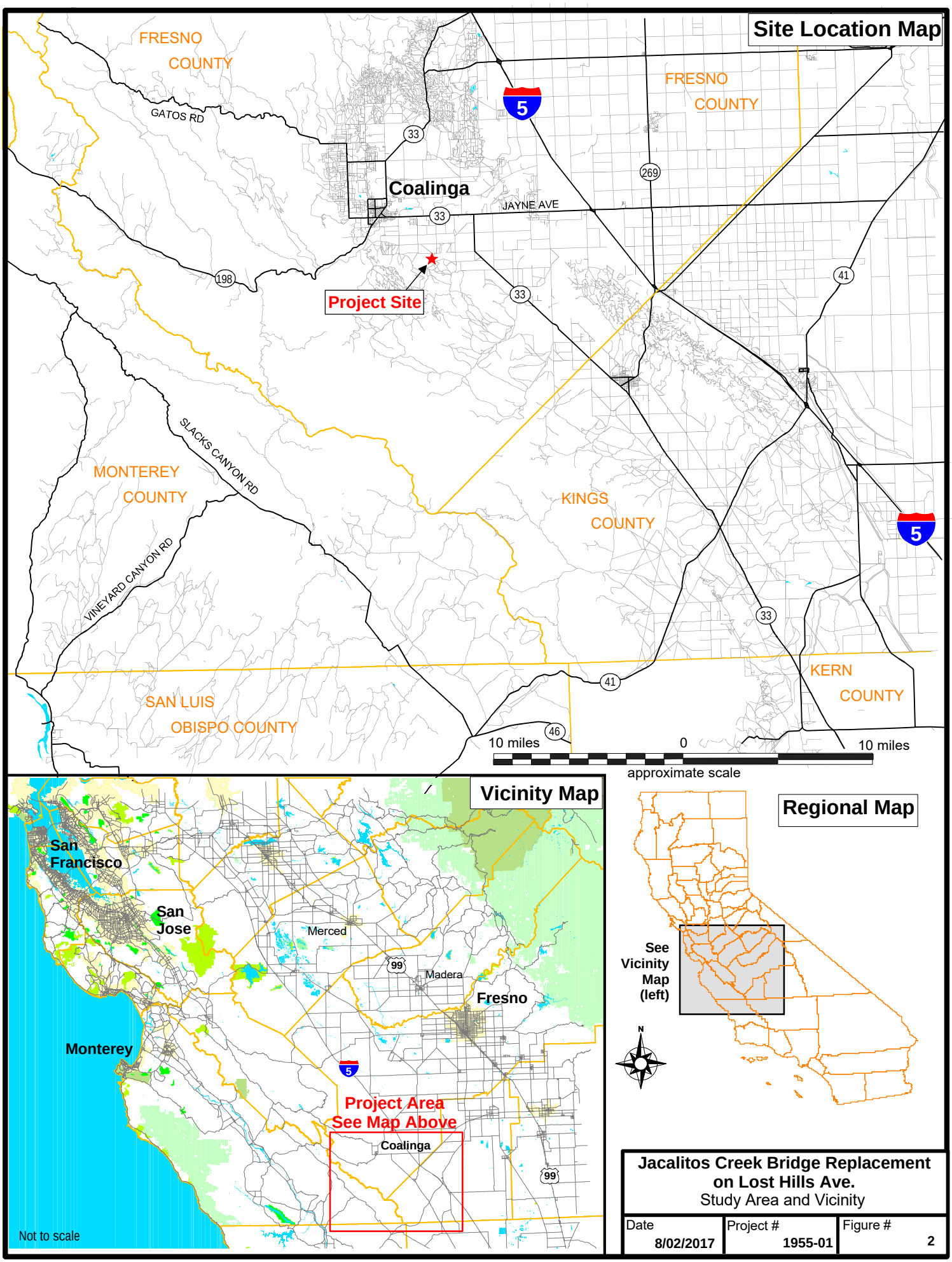
The Project will occur within an area of approximately 8.0 acres, hereafter referred to as the Action Area. Project activities will result in approximately 5.6 acres of temporary impact and approximately 1.9 acres of permanent impacts. Temporary impact areas will be used for staging and movement of equipment and materials. It is anticipated that an onsite low-water crossing would be used to move traffic through temporary impact areas of the construction site northeast of W Lost Hills Rd. Right of way acquisition may be required. Utility relocation is not anticipated.

1.4.2. Authorities and Discretion

This Biological Assessment (BA) report has been prepared for the Project, a collaborative effort by the County and Caltrans to replace the existing two-lane structure (Bridge No. 42C0078) over Jacalitos Creek. The proposed Project will be funded by the Federal Highway Bridge Program and, therefore, requires compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The lead agency for CEQA compliance is the County; the federal lead agency for NEPA compliance is Caltrans, as authorized under the NEPA Assignment Memorandum of Agreement between Caltrans and FHWA.

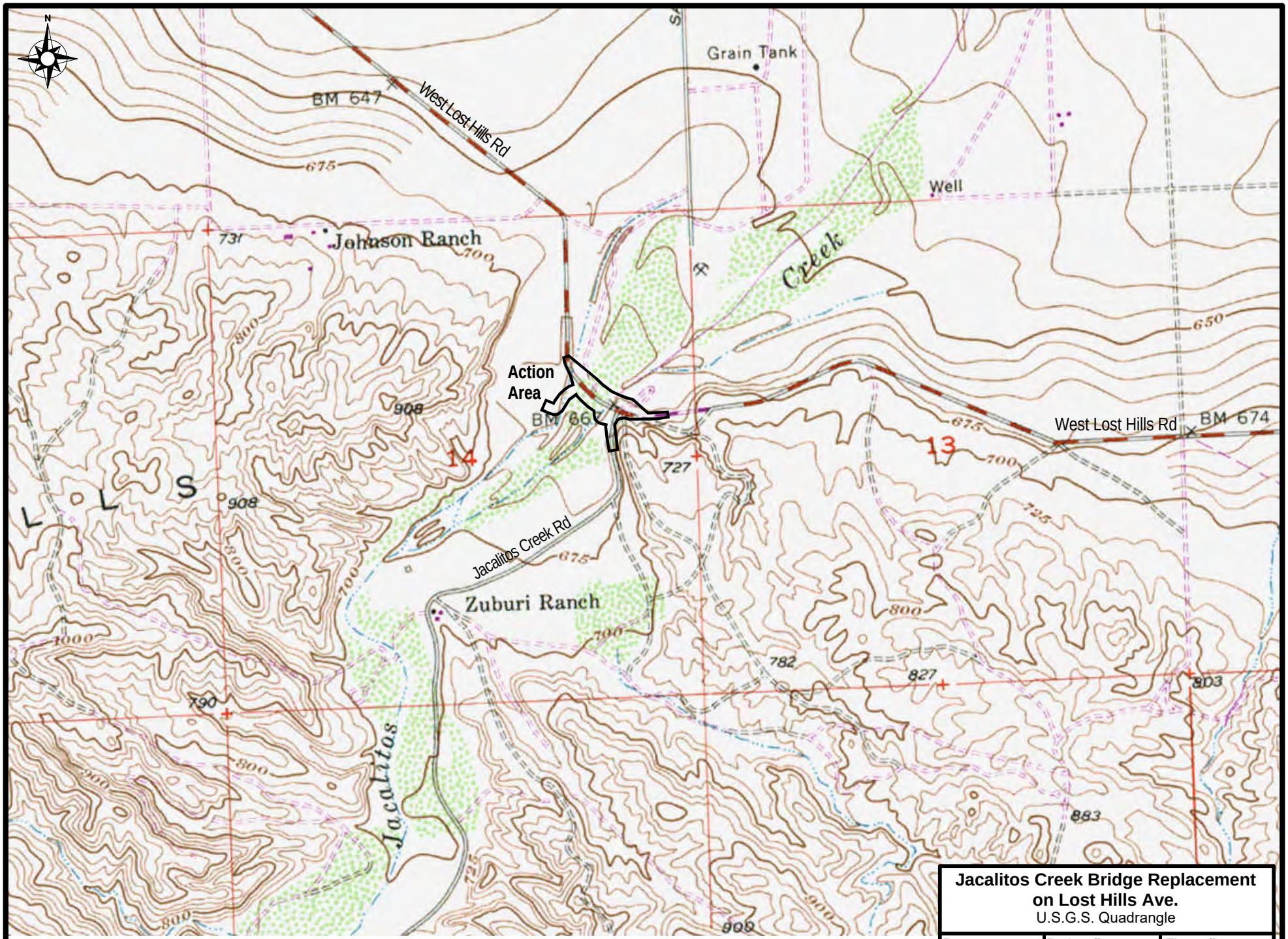
1.4.3. Project Location

The Project is located at the West Lost Hills Road crossing of Jacalitos Creek approximately 3.0 miles southeast of the City of Coalinga, Fresno County (Figure 2). The site can be found on the Kreyenhagen Hills U.S. Geological Survey (USGS) 7.5 minute quadrangle in Township 21 South, Range 15 East, Section 14 (Figure 3).



Jacalitos Creek Bridge Replacement on Lost Hills Ave.
Study Area and Vicinity

Date	Project #	Figure #
8/02/2017	1955-01	2



Jacalitos Creek Bridge Replacement on Lost Hills Ave.
U.S.G.S. Quadrangle

Date	Project #	Figure #
8/02/2017	1955-01	3

From USGS
Kreyenhagen Hills 7.5' Quadrangle 1971

1/2 mile 0 1/2 mile
approximate scale

1.4.4. Define Action Area

The Project will occur within an area of approximately 8.0 acres, hereafter referred to as the Action Area (Figure 4). The Action Area includes all areas of potential permanent and temporary impacts where ground disturbance will occur, including temporary construction and staging areas for the proposed Project. The Action Area includes the Project work limits as well as a buffer area around the Project work limits to accommodate any changes to Project limits that may occur during Project development and to account for potential indirect effects to sensitive resources. Project activities will result in approximately 5.6 acres of temporary impact and approximately 1.9 acres of permanent impacts, much of which constitutes previously developed land that experiences regular disturbance from vehicle traffic and road shoulder maintenance (see Figure 4).

1.4.5. Conservation Measures

As described in Table 1, only three species have the potential to be affected by project activities; these are the BNLL, GKR, SJKF. Conservation measures for these species follow. Conservation measures for critical habitat are not presented since critical habitat is absent from the Action Area and surrounding lands.

1.4.5.1. PROJECT DESIGN MODIFICATIONS FOR AVOIDANCE AND MINIMIZATION

Project design modifications for avoidance and minimization to federally listed species include an overall reduction in the size of the Action Area over original conceptual design plans.

1.4.5.2. SPECIES SPECIFIC AVOIDANCE/MINIMIZATION MEASURES OR BMPS FROM THE USFWS/NOAA FISHERIES BA CHECKLISTS

BNLL

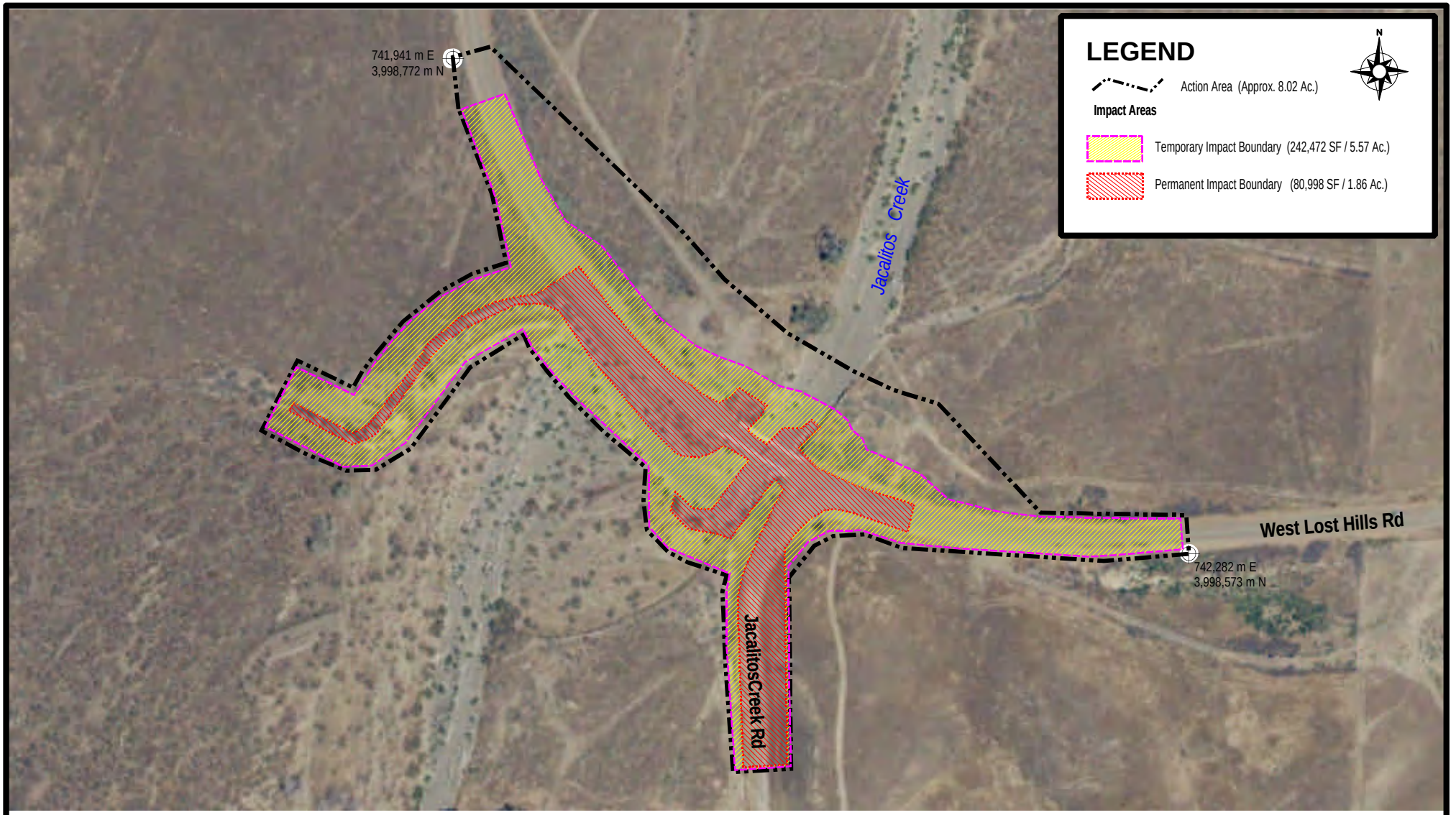
A preconstruction survey will be conducted and BNLL will be avoided in the unlikely event that they are found. An employee education program will be conducted prior to construction.

GKR

An employee education program will be conducted prior to construction.

SJKF

A preconstruction survey will be conducted for potentially suitable kit fox dens, any potentially suitable dens will be monitored for a period of three days, and denning SJKF will be avoided in the unlikely event they are found. Construction activities will be carried out in a manner that minimizes disturbance to kit foxes by following guidance found in the USFWS 2011 *Standard Recommendations for the Protection of the Endangered San Joaquin*



500' 0 500 feet

Approximate Scale
1' = 200'

Jacalitos Creek Bridge Replacement on Lost Hills Ave.
Impact Areas

Date	Project #	Figure #
8/02/2017	1955-01	4

Source:
Aerial Photograph Courtesy of USDA-FSA Aerial Photography Field Office, 11/4/2014
Universal Transverse Mercator Coordinate System Zone 10, NAD83 / NAVD 1988

Kit Fox Prior to or During Ground Disturbance (see Appendix H). In addition, an employee education program will be conducted prior to construction.

1.4.5.3. CONSERVATION MEASURES

Preconstruction surveys, avoidance of individuals or occupied burrows, construction minimization measures, and employee environmental awareness program (see Section 5.5 for detailed discussion).

1.4.6. Interrelated and Interdependent Actions

There are no interrelated or interdependent actions associated with the Project.

Chapter 2. Study Methods

2.1. Summary

Potential biological resource issues associated with the proposed Project were identified through a review of existing information and field surveys. Information sources used in the preparation of this analysis included: *USFWS List of Endangered, Threatened, and Proposed Species* (USFWS 2016), the *California Natural Diversity Database* (CNDDB) (CDFW 2017a); the *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2017); current listings from *Special Animals List* (CDFW 2017b) and *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2017c); and manuals and references related to plants and animals of California's Central Valley.

Field surveys consisted of a wetland delineation, protocol-level BNLL surveys, protocol-level rare plant surveys, a protocol-level kangaroo rat trapping survey, and habitat suitability assessment surveys for plant and animal species that are listed under the state or federal Endangered Species Acts, subject to California Environmental Quality Act (CEQA) analysis, and/or protected by law. A list of terrestrial vertebrates observed and/or expected to use the site are presented in Appendix C.

2.1.1. Wetland Delineation

A walking survey of the Action Area was conducted for jurisdictional waters. Field investigators used aerial photography, a United States Geological Survey (USGS) topographic map, and Project disturbance boundaries to guide the survey effort. The boundaries of likely jurisdictional waters were mapped using a Trimble Geo XT GPS unit with sub-meter accuracy. Information collected during the survey was recorded on USACE Arid West Region Wetland Determination Data Forms. LOA prepared the maps depicting likely jurisdictional waters using information collected in the field overlaid on a recent aerial photograph from Google Earth.

The survey was consistent with guidelines found in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987), *Minimum Standards for Acceptance of Preliminary Wetland Delineations* (USACE 2001), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008).

2.1.2. BNLL Surveys

Two LOA field investigators, at least one of which was a Level II surveyor, conducted 12 adult BNLL surveys and 5 juvenile BNLL surveys in 2015. The first four adult surveys in 2015 excluded approximately 1.1 acres of the site that had not yet been included in the Action Area. However, many of the surveys covered large areas outside the current Action Area boundary, providing survey coverage of the immediately surrounding lands. Nonetheless, four surveys across 0.7 acres that were excluded from the first four 2015 surveys were completed in the summer of 2016. In 2017 a new Area of Potential Effect (APE) was developed that included approximately 0.4 acres of additional impact area to the Action Area that were not targeted in the previous BNLL survey efforts. However, this area consists of a steep hillside, the paved surface of Jacalitos Creek Rd, and unpaved road shoulders, much of which constitutes unsuitable habitat for BNLL. While the survey area shifted to accommodate the evolving APE, as a whole, the surveys covered nearly all the existing areas of the current Action Area and large areas outside of the current Action Area. During the surveys the field investigators walked transects spaced approximately 50 feet apart and recorded all reptile species observed on field datasheets. The surveys were consistent with CDFW's *Approved Survey Methodology For The Blunt-Nosed Leopard Lizard* (May 2009). A copy of the master datasheet compiling the results of all the BNLL surveys is presented in Appendix D.

2.1.3. Kangaroo Rat Surveys

LOA biologist Geoff Cline (USFWS Permit #50510A-3 and CDFW SCP #5981) conducted a five-day trapping survey for giant kangaroo rat (*Dipodomys ingens*) from May 7 to 12, 2017. The survey was authorized by the USFWS via email on May 4, 2017 and followed the USFWS's *Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats* (March 2013). Sixty-three traps were set and checked over the five night period and no special status species were captured. The species that were captured included California pocket mouse (*Chaetodipus californicus*), San Joaquin pocket mouse (*Perognathus inornatus*), deer mouse (*Peromyscus maniculatus*), and Heermann's kangaroo rat (*Dipodomys heermanni*). A copy of the master datasheet compiling the results of all the small mammal trapping surveys is presented in Appendix E.

2.1.4. Botanical Surveys

Surveys for federally listed plant species (as well as other special status plant species) were conducted within the Action Area and immediately surrounding lands during the blooming period of four target species that are known to occur within similar habitats within the region. These species are the state and federally endangered California jewelflower (*Caulanthus californicus*), the federally endangered San Joaquin woollythreads (*Monolopia congdonii*), and the following five (5) CNPS-listed 1B species: Lemmon's jewelflower (*Caulanthus coulteri* var.

lemmonii), Hall's tarplant (*Deinandra halliana*), recurved larkspur (*Delphinium recurvatum*), pale-yellow layia (*Layia heterotricha*), and showy madia (*Madia radiata*). The botanical surveys were conducted in accordance with CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (2009). A comprehensive list of vascular plants identified on the Action Area is presented in Appendix F.

2.2. Personnel and Survey Dates

2.2.1. Wetland Delineation

Surveys were conducted in June and July of 2015 by LOA wildlife/plant/wetland ecologist Jeff Gurule assisted by LOA ecologist Rebekah Jensen. Mr. Gurule has 11 years of experience delineating wetlands. He has completed numerous wetland delineations across Central California that have been verified by the USACE.

2.2.2. BNLL Surveys

LOA ecologists Jeff Gurule (Level II Surveyor), Katrina Krakow (Level II Surveyor), Rebekah Jensen (Level I Surveyor), Austin Pearson (Level I Surveyor), Wendy Fisher (Level I Surveyor), and LOA associate Mark Jennings (Level II Surveyor) conducted BNLL surveys of the Action Area in 2015 on June 8, 9, 10, 11, 23, 24, 29, & 30; July 10, 13, 14, & 15; August 25, 26, & 31; and September 1 & 2. Four surveys were also conducted on June 1 & 17 and July 6 & 13, 2016 across a small 0.7 acre area not included in the first four surveys of 2015. Prior to the initiation of the surveys all Level II surveyors had completed more than 50 survey days and had identified both adult and juvenile BNLLs in the wild. All Level I surveyors had demonstrated the ability to distinguish BNLL from other common lizards.

2.2.3. Kangaroo Rat Surveys

A giant kangaroo rat trapping survey conforming to USFWS protocols was conducted by LOA wildlife ecologist Geoff Cline (USFWS Recovery Permit #50510A-3 and CDFW SCP #5981) on May 7-12, 2017. Mr. Cline has conducted numerous small mammal trapping surveys throughout Central California and has identified and handled many special status small mammal species including the giant kangaroo rat.

2.2.4. Botanical Surveys

Rare plant surveys were conducted by LOA wildlife/plant/wetland ecologist Jeff Gurule on February 25, March 18, and April 20, 2016. Mr. Gurule has conducted numerous rare plant surveys in Central California as well as many wetland delineations and reconnaissance surveys in which plant species were identified and recorded. During these experiences, Mr. Gurule has become familiar with a broad range of plant communities including the plant communities occurring on the Action Area.

2.3. Resource Agency Coordination and Professional Contacts

As follows is a summary of agency consultation and coordination to date for the proposed Project.

- March 2016. LOA coordinated with Caltrans biologist Elmer Llamas to determine who will be responsible for submitting the wetland delineation map and report to the USACE. Mr. Llamas indicated that Caltrans would submit the delineation to the USACE for verification.

- November 2016. An official species list was received from the Sacramento Fish and Wildlife Office.

- May 4, 2017. The USFWS authorized small mammal trapping surveys on the site.

2.4. Limitations and Assumptions that may Influence Results

No limitations that would influence the results of this BA were encountered.

Chapter 3. Environmental Baseline

The Action Area is located at the western edge of the San Joaquin Valley, which is in the southernmost basin of the Central Valley of California. The Action Area comprises approximately 1,379 feet of West Lost Hills Road including the Jacalitos Creek Bridge, approximately 296 feet of Jacalitos Creek Road, a portion of the Jacalitos Creek channel, and surrounding valley saltbush scrub (see Figure 5 and Appendix G for photos). A portion of the Action Area is regularly disturbed by road maintenance activities and regular vehicular traffic. Surrounding land uses consist of non-native grassland, valley saltbush scrub, the continuing roads, and the continuing Jacalitos Creek channel. Critical habitat is absent from the Action Area and surrounding lands.

3.1. Habitat Conditions in the Action Area

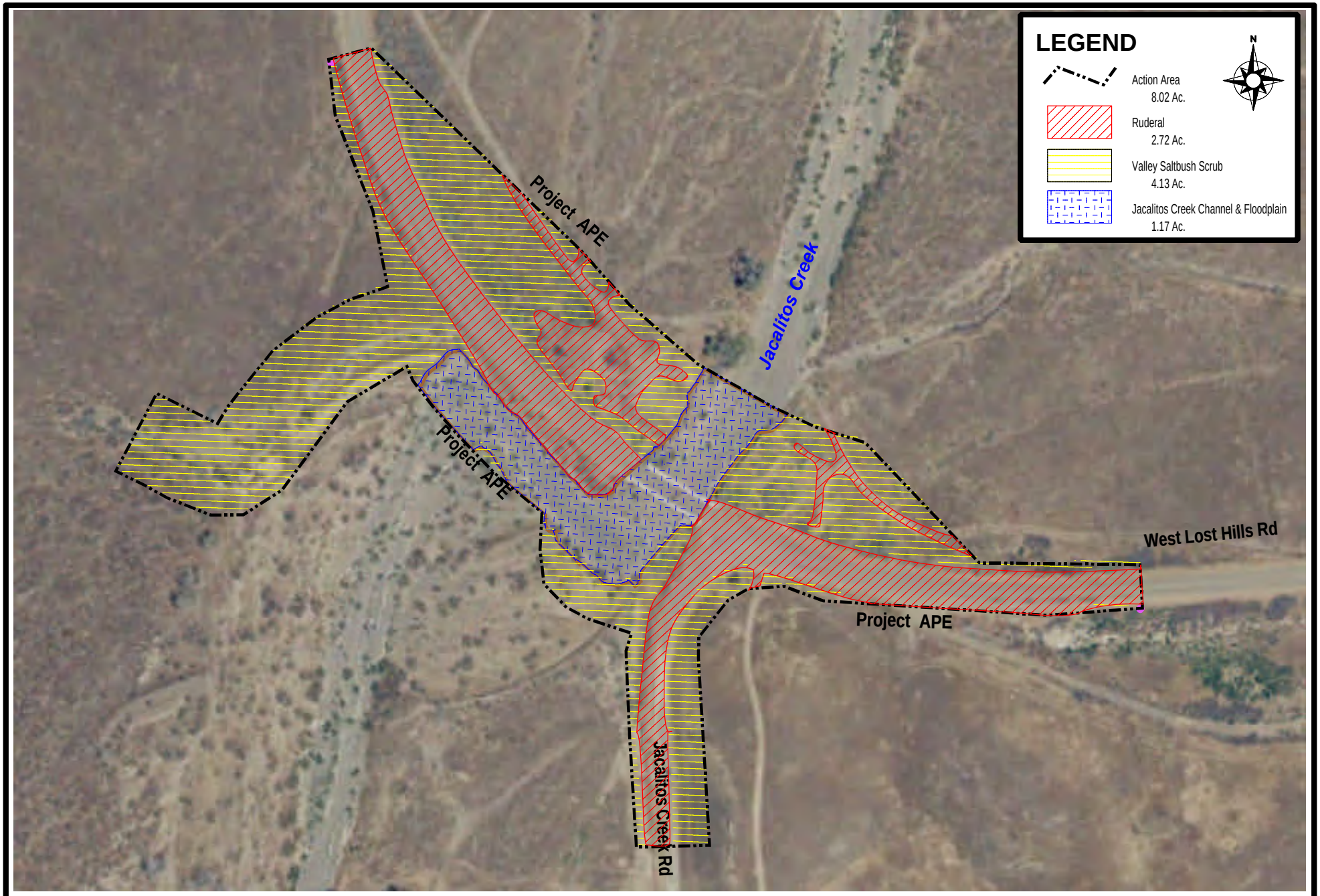
Habitat conditions of the site are influenced by the presence of West Lost Hills Road and Jacalitos Creek Road through the site. Specifically, the presence of these roads and absence of adequate fencing has allowed for human use of the site for illegal dumping, off-road vehicle use, and recreational use such as hiking, shooting, and rock-hounding. Onsite roads, including the existing bridge across Jacalitos Creek, also require erosion protection from heavy flows in the Jacalitos Creek channel that may damage onsite infrastructure. Current erosion control measures within the action area include large areas of rock-slope protection. These human influences on the site have resulted in a reduction of habitat quality across large areas of the Action Area, with most ruderal areas of the site offering little to no habitat for the BNLL, GKR, and SJKF. However, approximately 4.13 acres of valley saltbush scrub and 1.17 acres of Jacalitos Creek channel and floodplain provide small areas of moderate quality habitat for these species. These natural areas are described in more detail below. Environmentally sensitive areas and critical habitat are absent from the Action Area and surrounding lands.

3.2. Describe the Action Area

3.2.1. Biological Conditions

3.2.1.1. VALLEY SALTBUSH SCRUB

Valley saltbush scrub generally occurs in areas of undeveloped land within the San Joaquin Valley. This vegetation community is characterized by plants adapted to limited rainfall and mostly sandy to sandy loam soils. Shrubs observed in this vegetation community within the Action Area included allscale (*Atriplex polycarpa*), California matchstick (*Gutierrezia californica*), and Russian thistle (*Salsola tragus*). Annual grasses and forbs included red brome (*Bromus madritensis* ssp. *rubens*), red-stemmed filaree (*Erodium cicutarium*), common fireweed (*Ansinckia intermedia*), Hoover's eriastrum (*Eriastrum hooveri*), California mustard (*Caulanthus lasiophyllus*), and winged comb seed (*Pectocarya penicillata*).



500 feet 0 500 feet

approximate scale

Source:
Aerial Photograph Courtesy of USDA-FSA Aerial Photography Field Office, 9/29/2016
Universal Transverse Mercator Coordinate System Zone 10, NAD83 / NAVD 1988

Jacalitos Creek Bridge Replacement on Lost Hills Ave.
Biotic Habitats

Date	Project #	Figure #
8/02/2017	**1955-01**	**5**

The valley saltbush scrub observed on the site provides habitat for many native terrestrial vertebrate species; however, the degree to which this habitat is used by these species has probably been adversely affected by the proximity of Lost Hills Road and past soil disturbance and dumping on the site. Amphibians are expected to be absent from the Action Area due to the lack of sufficient surface water to support the aquatic phase of these animals. Reptiles observed in this habitat included side-blotched lizards (*Uta stansburiana*) and western whiptails (*Cnemidophorus tigris mundus*). Other reptiles expected in this habitat of the site include northern Pacific rattlesnake (*Crotalus oreganus oreganus*), gopher snake (*Pituophis melanoleucus*), and common kingsnake (*Lampropeltis getulus*). Birds observed within the onsite valley saltbush scrub included the horned lark (*Eremophila alpestris*), common raven (*Corvus corax*), yellow-rumped warbler (*Dendroica coronata*), western meadowlark (*Sturnella neglecta*), house finch (*Haemorhous mexicanus*), white-crowned sparrow (*Zonotrichia leucophrys*), and sage thrasher (*Oreoscoptes montanus*). Small mammal species potentially occurring in valley saltbush scrub habitat of the Action Area include the Heermann's kangaroo rat (*Dipodomys heermanni*), western harvest mouse (*Reithrodontomys megalotis*), deer mouse (*Peromyscus maniculatus*), and southern grasshopper mouse (*Onychomys torridus*). Rodent burrows were observed in some portions of this habitat at the time of the field survey. Mammalian predators likely to utilize this onsite habitat include the coyote (*Canis latrans*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*).

3.2.1.2. RUDERAL

Ruderal land use on the site consists of the paved surface and scraped dirt shoulder of West Lost Hills Road and Jacalitos Creek Road, as well as several unpaved ranch access roads. The term "ruderal" refers to areas that are periodically disturbed by anthropogenic influences, in this case by vehicular traffic, littering, and road maintenance. This onsite land use is characterized by low plant and animal species diversity. At the time of the field surveys, ruderal areas of the Action Area contained little to no vegetation cover. What vegetation that did occur in this area consisted of grasses and forbs found on adjacent valley saltbush scrub habitat, including wire lettuce (*Stephanomeria pauciflora*), Indian hedge mustard (*Sisymbrium orientale*), Russian thistle, and red brome.

Similarly, animal species associated with this land use would be limited due to ongoing disturbance and general lack of vegetation. Use of this area by amphibians is expected to be absent due to a paucity of water in this region. Reptile species likely occurring in this area would be much the same as those occurring on the adjacent scrubland, with side-blotched lizards frequenting this area of the Action Area the most. For the most part, bird species from surrounding scrubland and Jacalitos Creek channel would mostly just move through onsite ruderal lands on their way to more suitable habitats. Evidence of small mammal use of this area was not observed. Like the bird species in the area, small mammals are expected to make little use of onsite ruderal areas, due to the absence of vegetation for cover and food, and would likely pass through this area en route to more suitable habitat. Likewise, larger mammalian species are expected to only pass through this area of the Action Area.

3.2.1.3. JACALITOS CREEK CHANNEL AND FLOOD PLAIN

An approximately 600-foot reach of Jacalitos Creek and its adjoining flood plain occupy a sizable portion of the Action Area. The bottom and lower sides of the channel below the ordinary high water mark were sparsely vegetated with mostly native upland forbs and shrubs. Forbs in this area included annual bursage (*Ambrosia acanthicarpa*), anglestem buckwheat (*Eriogonum angulosum*), redstem filaree (*Erodium cicutarium*), and valley spurge (*Euphorbia ocellata ssp. ocellata*). Shrubs in this area included California broomshrub (*Lepidospartum squamatum*), California matchweed (*Gutierrezia californica*), and mule fat (*Baccharis salicifolia*).

The vegetation found in this habitat provides cover for several vertebrate species. Amphibians are expected to be absent from this area due to the ephemeral nature of flows within the channel and the otherwise dry desert-like conditions of the site. Reptiles observed in this area during blunt-nosed leopard lizard surveys included side-blotched lizards, desert spiny lizards (*Sceloporus magister*), and western whiptails. Reptiles such as the northern Pacific rattlesnake, gopher snake, and common kingsnake could also use this habitat as well.

The various shrubs found here provide cover and foraging habitat for several bird species. Some of the birds observed in this habitat included the Anna's hummingbird (*Calypte anna*), white crowned sparrow, greater roadrunner (*Geococcyx californianus*), and nesting lesser nighthawks (*Chordeiles acutipennis*). Raptors observed in this habitat include the American kestrel (*Falco sparverius*) and red-tailed hawk (*Buteo jamaicensis*).

Understory vegetation occurring on the channel banks and in the flood plain provide cover for various small mammal species. Rodents expected in the valley saltscrub habitat are likely to occur within the creek channel when dry. Various predators such as the striped skunk, raccoon, and coyote are expected to occasionally forage in the channel. Various bat species could forage over this habitat and other areas of the Action Area. In fact, Mexican free-tailed bats (*Tadarida brasiliensis*) were observed roosting in cracks beneath the existing onsite bridge.

3.2.2. Physical Conditions

With the exception of the incision of the Jacalitos Creek channel, the Action Area is relatively flat. The elevation of the study area is approximately 667 feet National Geodetic Vertical Datum (NGVD) (see Figure 3). The Action Area, like most of California, has a Mediterranean climate with cool moist winters and hot dry summers. Precipitation falls in the form of rain between October and May, with the heaviest amounts in December, January, February, and March. Annual precipitation is approximately 8.25 inches.

The site is dominated by the drainage channel of Jacalitos Creek, which functions as a desert wash with only seasonal flows occurring during the winter months after heavy rains. During especially heavy rains, flood flows can occur within the flood plain of the channel.

The following four soil mapping units are located within the Action Area: Excelsior, sandy substratum-westhaven association, flooded, 0 to 2 percent slopes; Excelsior sandy loam, sandy substratum, 0 to 2 percent slopes; Excelsior sandy loam, 0 to 2 percent slopes, MLRA 17; and

Milham-Guijarral association, 5 to 15 percent slopes (California Soil Resource Lab 2008). These soils are well drained and are not classified as hydric and, therefore, not prone to wetland formation.

3.2.3. Habitat Connectivity

The Jacalitos Creek channel is expected to function as a movement corridor for common resident terrestrial wildlife species. The channel provides a corridor between natural habitats of the Kreyenhagen Hills and Anticline Ridge via Pleasant Valley. The Action Area provides no opportunity for fish passage since ephemeral flows within the Jacalitos Creek channel do not support any fish populations.

Chapter 4. Federally-Listed/Proposed Species and Designated Critical Habitat within Action Area

4.1. Federally-Listed/Proposed Species

Two federally listed plant species, the California jewel-flower and San Joaquin woollythreads, and eight federally listed animal species, the vernal pool fairy shrimp, delta smelt, California red-legged frog, California tiger salamander, BNLL, California condor, GKR, and SJKF appear on the official USFWS species list for this project. The habitat requirements, survey results, potential for occurrence, and critical habitat for these species are discussed below.

4.2. California Jewel-Flower

This plant species is a member of the Brassicaceae family endemic to California. It occurs in chenopod scrub and valley and foothill grassland habitats in central California that have alkaline loamy to sandy soils. Current populations of this species are known from only a few locations; the Carrizo Plain, Santa Barbara Canyon (Santa Barbara County), and the Kreyenhagen Hills (Fresno County). The Kreyenhagen Hills population is located approximately 4.5 miles south of the Action Area.

4.2.1. Survey Results

The CNDDB contains an historic occurrence of the California jewel-flower within the Action Area that is based on a 1931 collection. The CNDDB occurrence record notes that the habitat has since been modified and that an investigation of the site in 1998 found the species absent from this location and that the investigator determined that species had been extirpated from this area. LOA conducted protocol-level floristic surveys of the site and surrounding lands in 2016 and found much of the site disturbed with no evidence of California jewel-flower found.

4.2.2. Status of Designated Critical Habitat in the Action Area for California Jewel-Flower

Critical habitat for this species is absent from the Action Area.

4.3. San Joaquin Woollythreads

This plant species is a member of the Asteraceae family endemic to California. It occurs in chenopod scrub as well as valley and foothill grasslands in central California. Current populations of this species occur at scattered locations, including the nearby Jacalitos Hills.

4.3.1. Survey Results

The CNDDB contains an occurrence report of the San Joaquin woollythreads approximately 0.65 miles southwest of the Action Area that is based on a 2015 survey. During that time

approximately 3,000 plants were observed in sandy soils. LOA conducted protocol-level floristic surveys of the site and surrounding lands in 2016 and found much of the site disturbed with no evidence of San Joaquin woollythreads found.

4.3.2. Status of Designated Critical Habitat in the Action Area for San Joaquin Woollythreads

Critical habitat for this species is absent from the Action Area.

4.4. Vernal Pool Fairy Shrimp

This small freshwater crustacean endemic to California occurs in vernal pools of the Central Valley.

4.4.1. Survey Results

The CNDDB contains no occurrence reports of the vernal pool fairy shrimp within a 10 mile radius of the Action Area. Numerous surveys of the Action Area by LOA biologists found unsuitable habitat on the Action Area for this species.

4.4.2. Status of Designated Critical Habitat in the Action Area for Vernal Pool Fairy Shrimp

Critical habitat for this species is absent from the Action Area.

4.5. Delta Smelt

This slender-bodied fish is endemic to the San Francisco Bay and Sacramento-San Joaquin Delta upstream through Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties.

4.5.1. Survey Results

The CNDDB contains no occurrence reports of the delta smelt within a 10 mile radius of the Action Area. The Action Area contains unsuitable habitat due to the absence of perennial waters and is well outside this species' known and historic range.

4.5.2. Status of Designated Critical Habitat in the Action Area for Delta Smelt

Critical habitat for this species is absent from the Action Area.

4.6. California Red-Legged Frog

This large frog was once prevalent in perennial waters of coastal and northern California and the western slope of the Sierra Nevada from sea level to 5,000 feet. It has been extirpated from

much of its historic range, with most modern populations confined to the central California coast range. It probably never occurred within the Action Area due to the dry conditions of the site.

4.6.1. Survey Results

The CNDDB contains no occurrence reports of the California red-legged frog within a 10 mile radius of the Action Area. The Action Area contains unsuitable habitat due to the absence of perennial waters and is outside this species' current known range.

4.6.2. Status of Designated Critical Habitat in the Action Area for California Red-Legged Frog

Critical habitat for this species is absent from the Action Area.

4.7. California Tiger Salamander

This large salamander is endemic to California and occurs in annual grassland habitat that supports large vernal pools the salamander uses for breeding and larval development. Historically, the California tiger salamander occurred in vernal pool habitat throughout California's Central Valley from Tulare County north to Yolo County, in the southern coast ranges north to the eastern San Francisco Bay Area, and in the western foothills of the Sierra Nevada. Today, most of the Central Valley populations have been extirpated due to agricultural and urban development, and the salamander is mainly confined to undeveloped areas at the eastern edge of the valley and lower Sierra Nevada foothills.

4.7.1. Survey Results

The CNDDB contains no occurrence reports of the California tiger salamander within a 10 mile radius of the Action Area. The Action Area contains unsuitable habitat due to the absence of vernal pools and is outside this species' current known range.

4.7.2. Status of Designated Critical Habitat in the Action Area for California Tiger Salamander

Critical habitat for this species is absent from the Action Area.

4.8. Blunt-Nosed Leopard Lizard

This medium-sized stout lizard is endemic to California and occurs in open scrubland and annual grassland habitat of the San Joaquin Valley, Carrizo Plain, and Panoche Valley from Merced County south to Kern County. The Action Area occurs within the current known range of this species.

4.8.1. Survey Results

The CNDDB contains 19 occurrence reports of the BNLL within a 10 mile radius of the Action Area. The nearest documented occurrence is approximately 2.4 miles southwest of the Action Area, reported in 1979. The Action Area contains potentially suitable habitat for BNLL. However, LOA conducted protocol-level BNLL surveys on and around the Action Area in 2015/16 and found no evidence of BNLL occupying the site or surrounding lands.

4.8.2. Status of Designated Critical Habitat in the Action Area for Blunt-Nosed Leopard Lizard

Critical habitat for this species is absent from the Action Area.

4.9. California Condor

This large bird in the New World Vulture family is endemic to California and requires vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. California condors nest in deep canyons that contain clefts in rocky walls.

4.9.1. Survey Results

The CNDDB contains no occurrence reports of the California condor within a 10 mile radius of the Action Area. Other databases such as occurrence records at ebird.org and USFWS California Condor GPS Cellular Occurrence Data collected in 2014 show no records of condors in the Coalinga area. The Action Area occurs outside of the current known range of this species. Furthermore, suitable nesting habitat was determined to be absent from the Action Area during LOA surveys.

4.9.2. Status of Designated Critical Habitat in the Action Area for California Condor

Critical habitat for this species is absent from the Action Area.

4.10. Giant Kangaroo Rat

This large kangaroo rat is endemic to California and inhabits grasslands on gentle slopes generally less than 10°, with friable, sandy-loam soils within the west side of the southern San Joaquin Valley and adjacent coastal foothills. There are no known populations of this species in the vicinity of the Action Area.

4.10.1. Survey Results

The CNDDB contains no occurrence reports of the giant kangaroo rat within a 10 mile radius of the Action Area. The nearest CNDDB occurrences are approximately 25 miles to the northwest and 26 miles to the southeast of the Action Area. Furthermore, LOA conducted protocol-level

giant kangaroo rat trapping surveys in May 2017 and found no evidence of giant kangaroo rat occupying the site.

4.10.2. Status of Designated Critical Habitat in the Action Area for Giant Kangaroo Rat

Critical habitat for this species is absent from the Action Area.

4.11. San Joaquin Kit Fox

The San Joaquin kit fox (SJKF), a subspecies of the kit fox, is a small canid endemic to California. It occurs in arid shrubland and grassland areas of the Central Valley. This species usually spends daylight hours in underground burrows and, sometimes, artificial ground structures. SJKF are primarily active at night where they prey upon a variety of small vertebrates and arthropods, and sometimes vegetation.

4.11.1. Survey Results

The CNDDB contains 11 occurrence reports of the SJKF within a 10 mile radius of the Action Area. The nearest CNDDB occurrence of this species, recorded in 1980, is approximately 2.0 miles to the southwest. Various transect surveys of the Action Area found no habitat features suitable for denning by this species; however, SJKF could potentially dig their own burrows or expand existing rodent burrows for secondary use. Foraging habitat occurs across the Action Area outside of ruderal areas.

4.11.2. Status of Designated Critical Habitat in the Action Area for San Joaquin Kit Fox

Critical habitat for this species is absent from the Action Area.

Based on the information gathered and presented above it has been determined that the Project has some potential to affect the BNLL, GKR, and SJKF. Therefore, further analysis will focus on potential Project effects on these three species.

Chapter 5. Effects of the Project on the Action Area

5.1. Deconstruct Action

The bridge replacement project would likely require the regular use of one or more of the following types of heavy equipment: excavator, backhoe, loader, and dump truck. A discussion of the individual construction elements and additional equipment that may be needed follows. Construction of an alternate roadway across temporary impact areas northeast of the existing West Lost Hills Road would require grading equipment and placement of temporary road material. Demolition and removal of the existing bridge would require heavy equipment described above. Construction of the new bridge would include the installation of new footings and bridge supports, bridge deck, and guard rails. Additional equipment for this phase of construction would include cement delivery trucks. Improvements to the roadway approaches would require repaving with appropriate paving equipment as well as some embankment recontouring east of Jacalitos Creek Road. Placement of rock slope protection along the banks of Jacalitos Creek will protect the integrity of the new bridge and approach roadway from creek erosion. The placement of the rock will slightly augment the area of existing rock slope protection.

5.1.1. Construction Scenario (summary)

The Project will occur within an area of approximately 8.0 acres. Project activities will result in approximately 5.6 acres of temporary impact and approximately 1.9 acres of permanent impacts (see Figure 4). Temporary impact areas will be used for staging, temporary road construction, and movement of equipment and materials. It is anticipated that an onsite low-water crossing would be used to move traffic through temporary impact areas of the construction site. Right of way acquisition may be required. Permanent impact areas will be subject to the placement of non-native material such as cement, base-rock, asphalt, and/or rock slope protection; or the permanent removal of native soils. Much of the permanent impacts from construction will occur in areas already permanently impacted from original road and bridge construction activity, as well as previous placement of rock slope protection. Utility relocation is not anticipated. All construction activity will occur during daylight hours.

5.1.2. Sequencing and Schedule

The Project is scheduled to be constructed during the summer of 2019.

5.1.3. Stressors from Project Actions

Stressors induce an adverse response in an organism by any physical, chemical, or biological alteration of the environment (or resource) that can lead to a response from the individual. Stressors can act directly on an individual, or indirectly through effects to a resource. A list of potential Project stressors follows.

- Temporary increase in baseline noise
- Temporary loss of habitat from various project activities, including equipment and material storage, removal of vegetative cover and soil, and augmentation of existing rock slope protection
- Encounters with construction vehicles or equipment
- Entrapment in holes or trenches

A discussion of potential Project stressors for BNLL, GKR, and SJKF follows.

Potential Project Stressors to Individual BNLL

Individual BNLL are not expected to occur on the site during construction because they were determined to be absent from the site and immediately surrounding lands during protocol-level surveys. Therefore, project stressors to individual BNLL are considered absent.

Potential Project Stressors to Regional BNLL Populations

While unlikely, there is a small chance that a BNLL population may establish itself on the Action Area at some time in the future. Project stressors that may influence this potential future population include the temporary loss of up to 3.5 acres of vegetation, the temporary loss of rodent burrows for cover, and the permanent loss of open ground to an increase in rock slope protection.

Potential Project Stressors to Individual GKR

Individual GKR are not expected to occur on the site during construction because they were determined to be absent during protocol-level surveys. Therefore, project stressors to individual GKR are considered absent.

Potential Project Stressors to GKR Populations

While unlikely, there is a small chance that a GKR population may establish itself on the Action Area at some time in the future. Project stressors that may influence this potential future population include the temporary loss of up to 3.5 acres of vegetation, and the permanent loss of open ground to an increase in rock slope protection.

Potential Project Stressors to SJKF

While no known populations of SJKF are known to occur on or in the near vicinity of the Action Area, individual SJKF may occasionally temporarily inhabit, pass through, and/or forage on the site. Potential project stressors to SJKF include the temporary loss of up to 3.5 acres of vegetation, the temporary loss of a small amount of open ground from material and equipment storage, daytime construction noise, potential entrapment in excavations or materials such as pipe, and equipment encounters.

5.1.4. Project Operation and Maintenance

Project operation and maintenance activities are not anticipated.

5.2. Exposure to Stressors from the Action

Exposures are defined as the interaction of the species, their resources, and the stressors that result from the project action. Exposure of BNLL, GKR, and SJKF to each stressor identified above is discussed below.

BNLL

Direct exposure to project related stressors on the BNLL is expected to be absent due to their presumed absence from the site based on protocol-level surveys, the small scale of the project, the short duration of work activities, and the timing of work activities during summer daylight hours when BNLL are most mobile and able to escape potential danger.

Temporary loss of approximately 3.5 acres of vegetation: This stressor could have an indirect effect on BNLL populations by temporarily reducing the desirability of a small amount of potential foraging ground, which would temporarily lower the potential for BNLL to colonize the Action Area.

Temporary loss of rodent burrows: This stressor could have an indirect effect on BNLL populations by temporarily reducing the quality of a small amount of potential habitat through the construction related loss of rodent burrows. This loss is considered temporary since rodents are anticipated to quickly reestablish burrows in disturbed areas. However, the temporal loss of rodent burrows could lower the potential for BNLL to colonize the Action Area.

GKR

Direct exposure to project related stressors on the GKR is expected to be minimal due to their presumed absence from the site based on protocol-level surveys, the absence of known populations of GKR in the region, the small scale of the project, and the short duration of work activities.

Temporary loss of approximately 3.5 acres of vegetation: This stressor could have an indirect effect on GKR populations by temporarily reducing the desirability of a small amount of potential foraging ground, which would temporarily lower the potential for GKR to colonize the Action Area.

SJKF

Project related stressors on the SJKF are expected to be minimal due to the small scale of the project, the short duration of work activities, and the timing of work activities occurring during summer daylight hours when SJKF are typically not active and less prone to wandering onto the project site.

Temporary loss of approximately 3.5 acres of vegetation: This stressor could have an indirect effect on individual SJKF by temporarily disrupting the foraging patterns of individual SJKF that may occasionally utilize the area. Another indirect effect of this stressor could be a temporarily reduction of the availability of cover.

The temporary loss of a small amount of open ground from material and equipment storage: This stressor could have an indirect effect on individual SJKF by temporarily disrupting the night-time foraging patterns of individual SJKF that may occasionally utilize the area.

Day-time construction noise: This stressor could have an indirect effect on individual SJKF by discouraging the use of the site and immediately surrounding lands for denning during the summer months of construction. Daytime construction noise would have little to no effect on foraging behavior due to the mostly nocturnal foraging habits of the SJKF.

Potential entrapment in excavations or materials such as pipe: This stressor could have a direct effect on individual SJKF, which could lead to injury or death.

Equipment encounters: This stressor could have a direct effect on individual SJKF, which could lead to injury or death.

5.3. Response to the Exposure

Actual species exposure to Project stressors would be low to nonexistent due to the small size of the Action Area, even smaller size of permanent impacts; the short duration of the project, the absence of BNLL and GKR within the Action Area as determined by protocol-level surveys, and the absence of any sign of SJKF occupation or use of the Action Area during numerous LOA surveys. Responses to the exposure to these stressors for each of these species are discussed below.

BNLL

Physical and behavioral responses are not anticipated since BNLL were determined to be absent from the Action Area and immediately surrounding lands. One possible, but extremely unlikely, response to the small temporary loss of vegetation, is that unknown nearby BNLL populations may find portions of the site less suitable for colonizing due to the temporary reduction in vegetative cover and possibly a temporary reduction in habitat quality.

GKR

Physical and behavioral responses are not anticipated since GKR were determined to be absent from the Action Area and are not known to currently occur in the region. One possible, but extremely unlikely, response to the small temporary loss of vegetation, is that unknown nearby GKR populations may find portions of the site less suitable for colonizing due to the possible temporary reduction in habitat quality.

SJKF

Should individual SJKF occur in the near vicinity of the Action Area during Project construction, they could experience behavioral and physical responses to exposure to Project stressors. Behavioral responses would likely be immediate avoidance of the Action Area due to the stressors created by Project activity. SJKF would be expected to make use of the Action Area in much the same way as they may currently utilize the area shortly after project completion.

Physical responses could be bodily injury, should an individual SJKF become trapped in excavations or pipes, or be struck by construction equipment.

Responses to exposure to Project stressors would most likely pertain to only a few, if any, individual SJKF. No population wide response to exposure to Project stressors is expected.

5.4. Effects of the Action

Effect is a description of the manner in which the action may affect any listed species or critical habitat and an analysis of any cumulative effect (50 CFR 402.02). The effect of the action is the consequence (behavioral, physical, or physiological) of a response to a stressor. The following discussion will evaluate the effect of the proposed action on the BNLL, GKR, and SJKF.

BNLL

As previously stated BNLL were determined to be absent from the project site and surrounding lands. Therefore, the only foreseeable effect the project may have on this species is a possible temporary reduction in habitat quality from project disturbance activities. A temporary reduction in habitat quality will likely have little to no effect on individual BNLL or BNLL populations since there is no evidence of BNLL populations inhabiting nearby lands. A highly speculative effect may be that a hypothetical BNLL population in the region would be temporarily discouraged from expanding territory onto temporarily disturbed lands of the site.

GKR

As previously stated GKR were determined to be absent from the project site and surrounding lands. Therefore, the only foreseeable effect the project may have on this species is a possible temporary reduction in habitat quality from project disturbance activities. A temporary reduction in habitat quality will likely have little to no effect on individual GKR or GKR populations since there is no evidence of GKR populations currently inhabiting the region. A speculative effect may be that a hypothetical GKR population in the region would be temporarily discouraged from expanding territory onto temporarily disturbed lands of the site.

SJKF

As previously stated, evidence of SJKF habitation or use of the site was absent during numerous LOA surveys of the site. A self-sustaining population of SJKF is not known to occur in the vicinity of the Action Area (Smith et al. 2006). However, this mobile species could utilize or pass through the site from time to time or even den within the Action Area prior to construction. Potential direct effects to this species include temporary kit fox avoidance of the Action Area during construction and potential injury or mortality to kit fox from entrapment or encounters with construction equipment. Indirect effects include the temporary loss of a small amount of foraging habitat.

5.5. Conservation Measures and Compensation Proposal

5.5.1. BNLL Conservation Measures

To reduce project effects on BNLL the following avoidance and minimization measures are proposed.

Pre-construction Surveys. Pre-construction surveys shall be conducted by a minimum of two qualified biologists within 30 days of the start of ground disturbance, construction activities, and/or any Project activity with the potential to impact BNLL.

Avoidance and Consultation. In the unlikely event that a BNLL is encountered, work shall stop immediately. The construction contractor will immediately notify the County, and the County will immediately notify CDFW and Caltrans, and Caltrans will then notify the USFWS. A qualified biologist should visit the site to map the location of the individual BNLL and assess the disposition of the individual, if possible. The biologist will work with the agencies to determine an appropriate no disturbance buffer.

Minimization. Construction activities shall be carried out in a manner that minimizes impacts to BNLL, in the unlikely event they should occur on the project site during construction. Minimization measures include:

1. All work shall occur during daylight hours.

2. Project-related vehicles shall observe a 20 mph speed limit in all project areas during construction, except on country roads and state and federal highways. Off-road traffic outside of designated project areas should be prohibited during construction.

3. All excavated steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Areas that are covered will be inspected daily, for as long as they are covered, to ensure that no BNLL have become trapped despite the presence of covers. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals.

4. All small diameter construction pipes or similar structures with a diameter of 4 inches or less that are stored at a construction site shall be thoroughly inspected for BNLL before the pipe is subsequently buried, capped, or otherwise used or moved in any way.

5. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape.

6. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline

corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions.

7. To prevent injury or mortality of BNLL by dogs or cats, no pets shall be permitted on the project site during construction.

8. Use of rodenticides and herbicides in project areas will be restricted. If it is later determined that the use of rodenticides and herbicides is needed, consultation with the USFWS must be reinitiated.

Employee Education Program. Prior to the start of construction, the applicant will retain a qualified biologist to conduct an employee education program. The program should consist of a brief presentation by persons knowledgeable in BNLL biology and legislative protection to explain endangered species concerns to contractors, their employees, and agency personnel involved in the project. The program should include the following: a description of the BNLL and its habitat needs; a report of the occurrence of BNLL in the Project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to program attendees and anyone else who may enter the project site.

5.5.2. BNLL Compensation

Compensation measures are deemed unnecessary given the unlikelihood that BNLL will be affected by Project activities and the small size of potential habitat affected by the project.

5.5.3. GKR Conservation Measures

To reduce project effects on GKR the following avoidance and minimization measures are proposed.

Minimization. Construction activities shall be carried out in a manner that minimizes impacts to GKR, in the unlikely event they should occur on the project site during construction. Minimization measures include:

1. All work shall occur during daylight hours.

2. Small mammal burrows will be avoided to the greatest extent practical.

3. Project-related vehicles shall observe a 20 mph speed limit in all project areas during construction, except on country roads and state and federal highways. Off-road traffic outside of designated project areas should be prohibited during construction.

4. All excavated steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden

planks. Areas that are covered will be inspected daily, for as long as they are covered, to ensure that no GKR have become trapped despite the presence of covers. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals.

5. All small diameter construction pipes or similar structures with a diameter of 4 inches or less that are stored at a construction site shall be thoroughly inspected for GKR before the pipe is subsequently buried, capped, or otherwise used or moved in any way.

6. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions.

7. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape.

8. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions.

9. To prevent injury or mortality of GKR by dogs or cats, no pets shall be permitted on the project site during construction.

10. Use of rodenticides and herbicides in project areas will be restricted. If it is later determined that the use of rodenticides and herbicides is needed, consultation with the USFWS must be reinitiated.

Employee Education Program. Prior to the start of construction, the applicant will retain a qualified biologist to conduct an employee education program. The program should consist of a brief presentation by persons knowledgeable in GKR biology and legislative protection to explain endangered species concerns to contractors, their employees, and agency personnel involved in the project. The program should include the following: a description of the GKR and its habitat needs; a report of the occurrence of GKR in the Project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to program attendees and anyone else who may enter the project site.

5.5.4. GKR Compensation

Compensation measures are deemed unnecessary given the unlikelihood that GKR will be affected by Project activities and the small size of potential habitat affected by the project.

5.5.5. SJKF Conservation Measures

To reduce project effects on SJKF the following avoidance and minimization measures are proposed, adapted from the USFWS 2011 *Standard Recommendations for the Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (see Appendix H), during construction of all components of the proposed project; including within staging areas:

Pre-construction Surveys. Pre-construction surveys shall be conducted by a qualified biologist no less than 14 days and no more than 30 days prior to the start of construction. These surveys will be conducted in accordance with the Service's 2011 Recommendations. When surveys identify potential dens (defined as burrows at least four inches in diameter which open up within two feet), potential den entrances shall be dusted for four consecutive calendar days to register and track activity of any kit present. If an active kit fox den is detected in, or within 200 feet of the area of work, the USFWS and the CDFW shall be contacted immediately.

Avoidance and Consultation. The surveyor shall thoroughly check the Action Area for kit fox dens and, if found, exclusion zones shall be placed, in consultation with the Service and CDFW, at the following radii: 50-feet for a potential den, 100-feet for a known den, and 50-feet for an atypical den. If a natal/pupping den is found, the Service will be contacted for guidance. Known kit fox dens, even if they are inactive, may not be destroyed.

Minimization. Construction activities shall be carried out in a manner that minimizes disturbance to kit foxes. Minimization measures include:

1. All work shall occur during daylight hours.

2. Project-related vehicles shall observe a 20 mph speed limit in all project areas during construction, except on country roads and state and federal highways. Off-road traffic outside of designated project areas should be prohibited during construction.

3. All excavated steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Areas that are covered will be inspected daily, for as long as they are covered, to ensure that no kit fox have become trapped despite the presence of covers. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals.

4. All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted.

5. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the USFWS should be contacted for guidance.

6. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions.

7. All food related trash items shall be disposed of in closed containers and removed at least once a week from the project site.

8. No firearms shall be allowed on the project site.

9. To prevent harassment, mortality of kit foxes, or destruction of dens by dogs or cats, no pets shall be permitted on the project site during construction.

10. Use of rodenticides and herbicides in project areas will be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. If it is later determined that the use of rodenticides and herbicides is needed, consultation with the USFWS must be reinitiated.

Employee Education Program. Prior to the start of construction, the applicant will retain a qualified biologist to conduct an employee education program. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and agency personnel involved in the project. The program should include the following: a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to program attendees and anyone else who may enter the project site.

***Mortality Reporting*.** A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the USFWS. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to this representative.

5.5.6. SJKF Compensation

The extremely minimal loss of potential SJKF habitat, most of which will be temporary, does not warrant the need for compensatory mitigation.

5.6. Effects of Interrelated and Interdependent Actions/Conclusions and Determination

There are no interrelated or interdependent actions associated with the Project.

5.7. Cumulative Effects

Cumulative effects include the effects of future state, tribal, local or private actions that are reasonably certain to occur in the Action Area described in this biological assessment. Future Federal actions that are unrelated to the proposed action are not considered in this this section because they require separate consultation pursuant to Section 7 of the Act.

No non-federal actions are anticipated to occur within the Action Area. Therefore, cumulative effects are considered absent.

5.8. Determination

5.8.1. Species and Critical Habitat Determination

1.) No-Effect

A no effect determination was made for the following species. No consultation is required.

Plant Species

- California Jewel-Flower (*Caulanthus californicus*) FE
- San Joaquin Woollythreads (*Monolopia congdonii*) FE

Animal Species

- Vernal Pool Fairy Shrimp (*Branchinecta lynchi*) FT
- Delta Smelt (*Hypomesus transpacificus*) FT
- California Red-Legged Frog (*Rana aurora draytonii*) FT
- California Tiger Salamander (*Ambystoma californiense*) FT
- California Condor (*Gymnogyps californianus*) FE

Critical Habitat

Critical habitat is absent from the Action Area and surrounding lands.

2.) May Affect-Not Likely to Adversely Affect (NLAA)

A may affect-not likely to adversely affect determination was made for the following animal species. Informal consultation is required.

- Blunt-Nosed Leopard Lizard (*Gambelia silus*) FE
- Giant Kangaroo Rat (*Dipodomys ingens*) FE
- San Joaquin Kit Fox (*Vulpes macrotis mutica*) FE

3.) May Affect-Likely to Adversely Affect (LAA)

The may affect-likely to adversely affect determination did not apply to any species considered in this BA. Formal consultation is not required.

5.8.2. Discussion Supporting Determination

Federally Listed Plant Species

The Project will have no effect on federally listed plant species because such species were determined to be absent from the Action Area during protocol-level botanical surveys.

Federally Listed Animal Species Considered Absent Due to Unsuitable Habitat on the Action Area

The vernal pool fairy shrimp, delta smelt, California red-legged frog, California tiger salamander, and California condor are considered absent from the Action Area because suitable habitat for these species is absent from the Action Area and surrounding lands. In addition, the Action Area lies outside the known ranges of these species. Therefore, the project will have no effect on these five (5) species.

Critical Habitat

Critical habitat is absent from the Action Area and surrounding lands. Therefore, the project will have no effect on critical habitat.

BNLL

The Project is expected to have no direct or cumulative effects on BNLL because this species is considered absent from the Action Area and immediately surrounding lands as determined by protocol-level surveys. Interrelated and interdependent effects on BNLL will not occur because such actions are not anticipated. Since the Action Area provides potentially suitable habitat for the BNLL, the species may be indirectly affected by project activities in that the quality of potential habitat might be temporarily reduced, which may decrease the likelihood of BNLL utilizing the habitat in the near future after construction is completed. In the unlikely event that a BNLL should move onto the site prior to construction, the proposed avoidance and minimization measures will ensure that no individuals of this species are taken.

GKR

The Project is expected to have no direct or cumulative effects on GKR because this species is considered absent from the Action Area and immediately surrounding lands as determined by protocol-level surveys. Furthermore, this species is not known to occur within 25 miles of the Action Area. Interrelated and interdependent effects on GKR will not occur because such actions are not anticipated. Since the Action Area is within the historic range of the species and provides potentially suitable habitat for the GKR, the species may be indirectly affected by project activities in that the quality of potential habitat might be temporarily reduced, which may

decrease the likelihood of GKR utilizing the habitat in the near future after construction is completed. An employee education program is proposed to inform construction personnel of the protection status and ecology of the species.

SJKF

The Project may have direct effects on individual SJKF that could potentially wander onto the Action Area during construction. Direct effects include the temporary avoidance of the Action Area by SJKF during construction and potential injury or mortality to kit fox from entrapment or encounters with construction equipment. Indirect effects include the temporary loss of a small amount of potential foraging and denning habitat. These effects are expected to be minimal since no evidence of SJKF was detected during numerous LOA surveys of the site and surrounding lands, SJKF populations are not known in the region, the Action Area is small, and large amounts of similar habitat will remain available in the region during construction. Cumulative, interrelated, and interdependent effects are absent. Conservation measures consisting of preconstruction surveys, avoidance of active dens, project minimization measures, and an employee education program will further reduce the magnitude of project effects to SJKF.

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Appendix A – IPAC Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
FEDERAL BUILDING, 2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
PHONE: (916)414-6600 FAX: (916)414-6713

Consultation Code: 08ESMF00-2017-SLI-0388 November 30, 2016
Event Code: 08ESMF00-2017-E-00711
Project Name: Jacalitos Creek Bridge Replacement on Lost Hills Avenue

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2)

of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Jacalitos Creek Bridge Replacement on Lost Hills Avenue

Official Species List

Provided by:

Sacramento Fish and Wildlife Office
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
(916) 414-6600

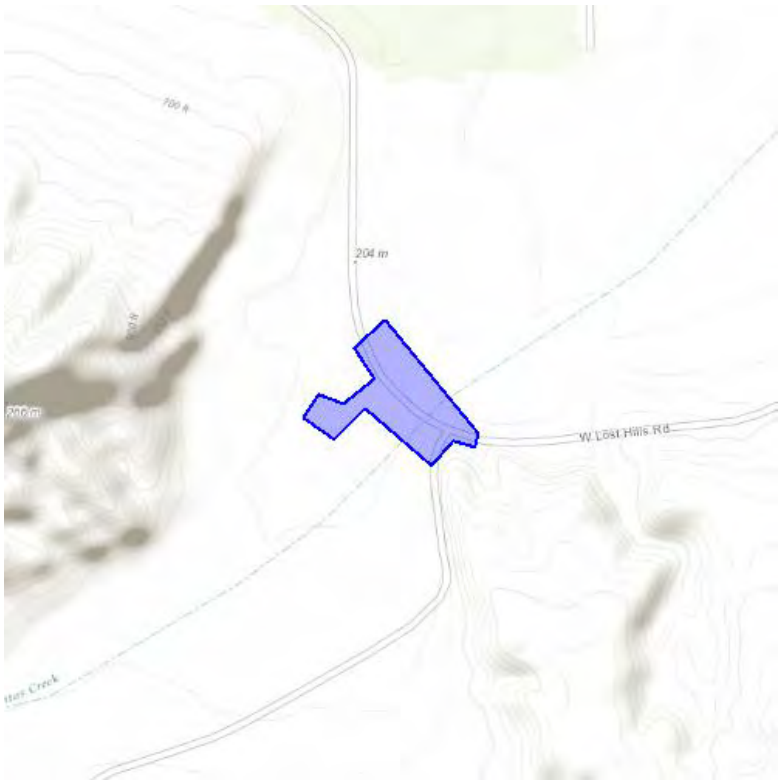
Consultation Code: 08ESMF00-2017-SLI-0388
Event Code: 08ESMF00-2017-E-00711

Project Type: TRANSPORTATION

Project Name: Jacalitos Creek Bridge Replacement on Lost Hills Avenue
Project Description: Approximately 7.7 acre site to utilized for a bridge replacement project. Permanent impacts will occur on 1.5 acres, much of which constitutes previously developed land that experiences regular disturbance from vehicle traffic and road shoulder maintenance. Temporary impacts will occur on 4.2 acres of the BSA. Project construction is anticipated to occur in the summer of 2018.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-120.31084477901459 36.10134055271534, -120.31210541725157 36.10222474933592, -120.31269013881683 36.10174364358536, -120.31328558921814 36.102068715361256, -120.31299591064452 36.10241979136851, -120.31252920627594 36.102276760591955, -120.31193375587463 36.10265817541743, -120.31232535839081 36.10314794401193, -120.31172454357147 36.10357703080226, -120.30993819236757 36.101834663818195, -120.31002402305603 36.10161361449842, -120.31043708324432 36.101704634881884, -120.31084477901459 36.10134055271534)))

Project Counties: Fresno, CA

Endangered Species Act Species List

There are a total of 10 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	**Status**	**Has Critical Habitat**	**Condition(s)**
California red-legged frog *(Rana draytonii)* Population: Wherever found	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Birds			
California condor *(Gymnogyps californianus)* Population: U.S.A. only, except where listed as an experimental population	Endangered	Final designated	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Wherever found	Threatened	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)*	Threatened	Final designated	

Population: Wherever found			
Flowering Plants			
California jewelflower *(Caulanthus californicus)* Population: Wherever found	Endangered		
San Joaquin wooly-threads *(Monolopia (=lembertia) congdonii)* Population: Wherever found	Endangered		
Mammals			
Giant kangaroo rat *(Dipodomys ingens)* Population: Wherever found	Endangered		
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard *(Gambelia silus)* Population: Wherever found	Endangered		

Critical habitats that lie within your project area

There are no critical habitats within your project area.

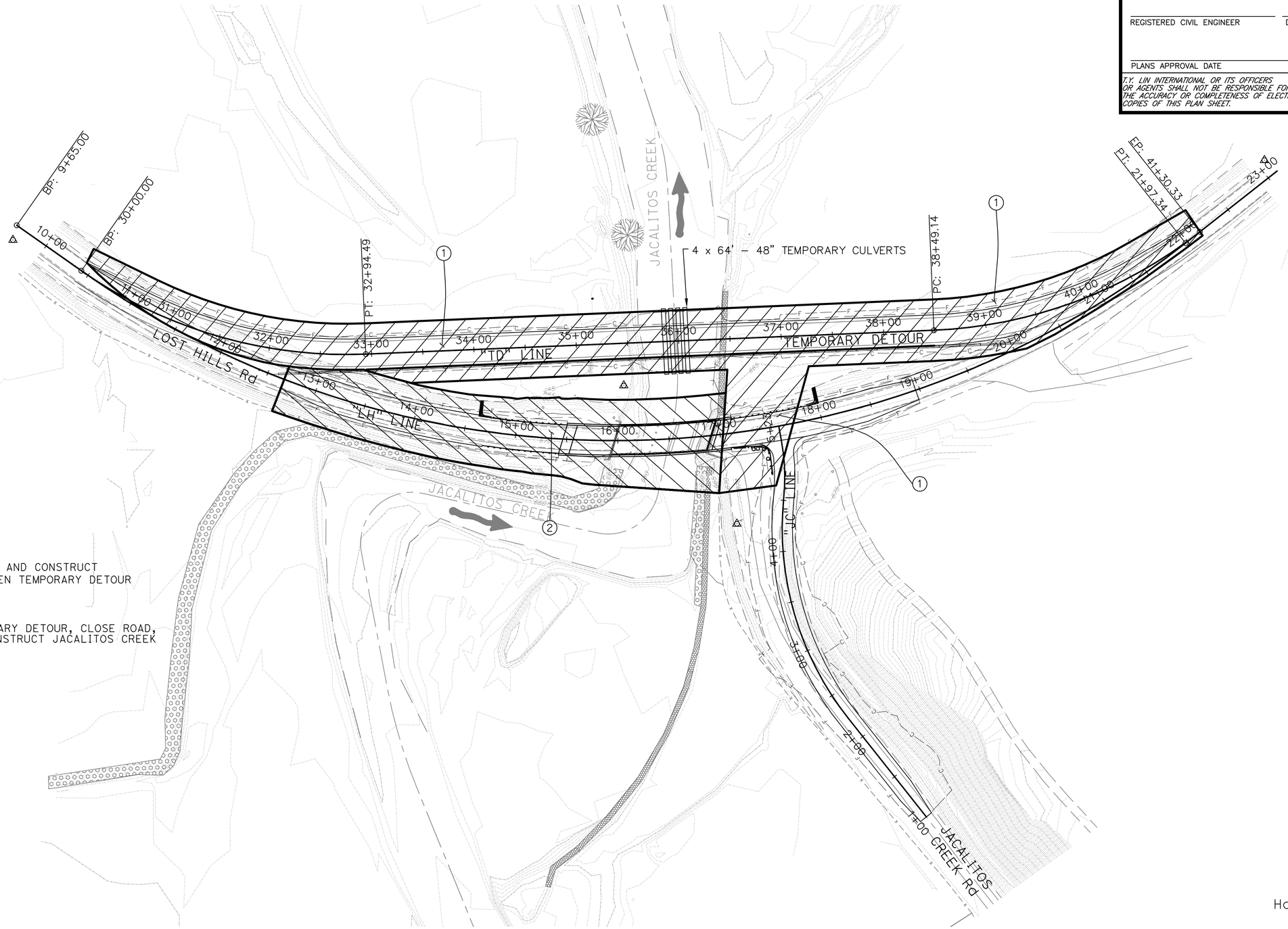
Appendix B – Conceptual Project Design

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
DEAN ZURCHER
No. 03/31/17
Exp. 86371
CIVIL
STATE OF CALIFORNIA

T.Y. LIN INTERNATIONAL OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



LEGEND

- STAGE 1
- STAGE 2
- (#) STAGE OF CONSTRUCTION
- HINGE
- FILL
- CUT

NOTES:

(1) STAGE 1
CONSTRUCT TEMPORARY DETOUR AND CONSTRUCT TEMPORARY CONNECTION BETWEEN TEMPORARY DETOUR AND JACALITOS CREEK ROAD.

(2) STAGE 2
TRANSFER TRAFFIC TO TEMPORARY DETOUR, CLOSE ROAD, REMOVE EXIST BRIDGE AND CONSTRUCT JACALITOS CREEK BRIDGE AND WEST APPROACH

30% SUBMITTAL, NOT FOR CONSTRUCTION

SC-1

SCALE:
Horiz: 1"=50'

XRef List: | 088 Border | ACAD-088 X-TP | 088 X-Land | 054-BRDR | 088-C-RD-Temporary Detour | 088-C-RD | Mar. 07, 2017 – 14:14:25 DWG Name: I:\Sacramento\Projects\710\088.10\600_CADD\30_Working\SHEETS\088 SC-1.dwg Updated By: jhoge

T.Y.LIN INTERNATIONAL	DATE	RECORD DRAWING		SCALE		PROJECT		DEPARTMENT OF PUBLIC WORKS AND PLANNING
DESIGNED: DEAN ZURCHER	####	RESIDENT ENGINEER	DATE	0 PLAN 1" 2"	30% PLANS NOT FOR CONSTRUCTION	JACALITOS CREEK BRIDGE REPLACEMENT PROJECT	THE COUNTY OF FRESNO	STAGE CONSTRUCTION PLAN
DRAWN: JEFFREY HOGE	####				SUPERVISING ENGINEER DATE	ON LOST HILLS ROAD		
CHECKED: TIM CLIFFORD	####					ROAD NO. #### BRIDGE NO. XXXXXXX		DRAWING NO. SC-1 SHEET NO. - TOTAL

FOR RIGHT OF WAY DATA AND ACCURATE ACCESS DETERMINATION, SEE DOCUMENTS IN THE DEPARTMENT OF PUBLIC WORKS AND PLANNING.

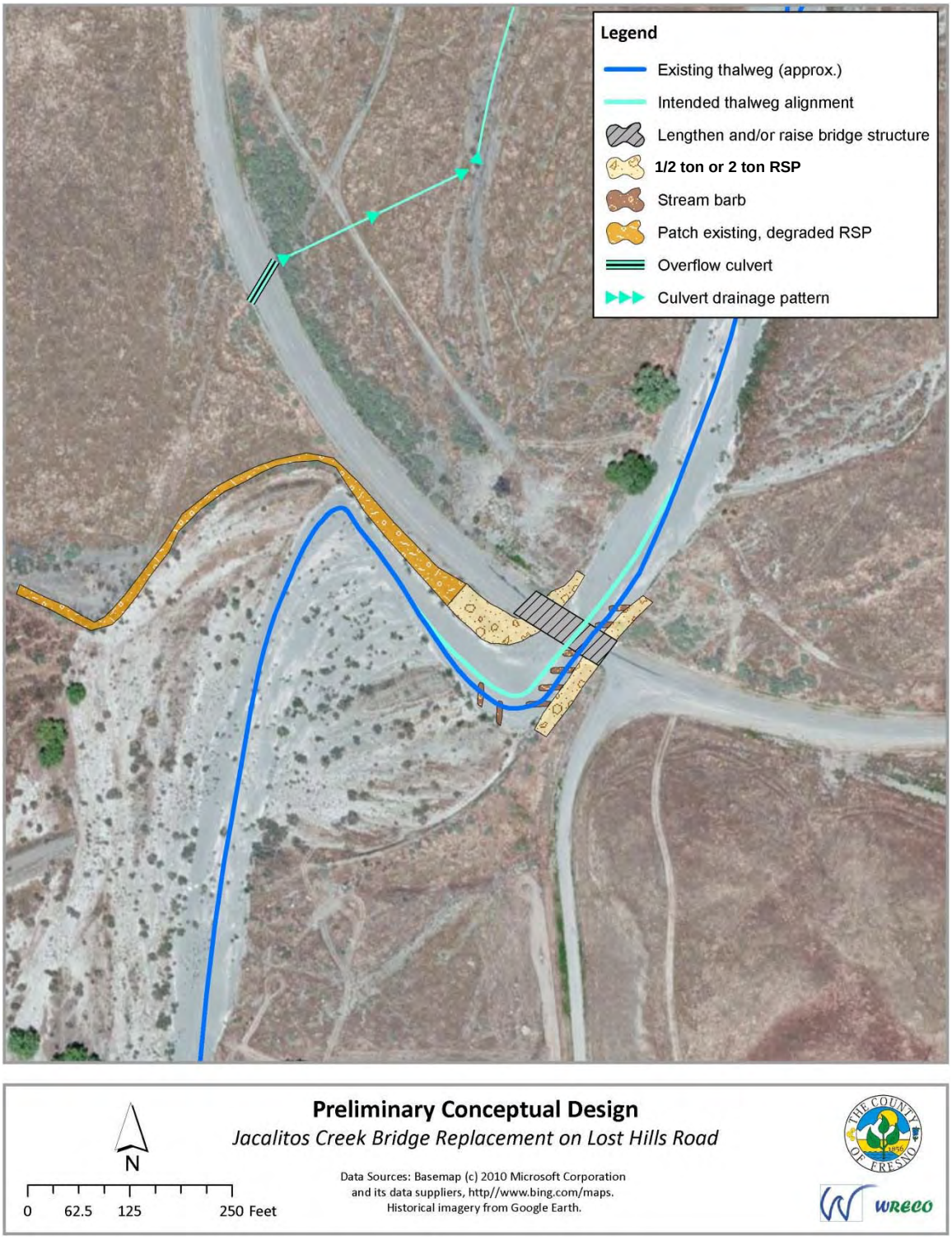


Figure 14. Conceptual Erosion Countermeasure Layout

Appendix C – Terrestrial Vertebrate List

TERRESTRIAL VERTEBRATES THAT POTENTIALLY OCCUR ON THE BSA

The species listed below are those that may reasonably be expected to use the habitats of the study area routinely or occasionally. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the study area during LOA field surveys have been noted with an asterisk.

CLASS: REPTILIA (Reptiles)
ORDER: SQUAMATA (Lizards and Snakes)
SUBORDER: SAURIA (Lizards)
FAMILY: PHRYNOSOMATIDAE
*Desert Spiny Lizard (*Sceloporus magister*)
*Side-blotched Lizard (*Uta stansburiana*)
FAMILY: TEIIDAE (Whiptails and relatives)
*Western Whiptail (*Cnemidophorus tigris*)
SUBORDER: SERPENTES (Snakes)
FAMILY: COLUBRIDAE (Colubrids)
Glossy Snake (*Arizona elegans*)
Gopher Snake (*Pituophis melanoleucus*)
Common Kingsnake (*Lampropeltis getulus*)
Long-nosed Snake (*Rhinocheilus lecontei*)
FAMILY: VIPERIDAE (Vipers)
Western Rattlesnake (*Crotalus viridis*)

CLASS: AVES (Birds)
FAMILY: CATHARTIDAE (American Vultures)
*Turkey Vulture (*Cathartes aura*)
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)
FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)
Northern Harrier (*Circus cyaneus*)
*Red-tailed Hawk (*Buteo jamaicensis*)
Ferruginous Hawk (*Buteo regalis*)
Rough-legged Hawk (*Buteo lagopus*)
Sharp-Shinned Hawk (*Accipiter striatus*)
Cooper's Hawk (*Accipiter cooperii*)
FAMILY: FALCONIDAE (Caracaras and Falcons)
*American Kestrel (*Falco sparverius*)
Merlin (*Falco columbarius*)
Prairie Falcon (*Falco mexicanus*)
ORDER: GALLIFORMES (Megapodes, Currassows, Pheasants, and Relatives)
FAMILY: ODONTOPHORIDAE (New World Quails)
*California Quail (*Callipepla californica*)
ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)
FAMILY: CHARADRIIDAE (Plovers and relatives)

*****Killdeer (*Charadrius vociferus*)

ORDER: COLUMBIFORMES (Pigeons and Doves)

FAMILY: COLUMBIDAE (Pigeons and Doves)

*Eurasian Collared Dove (*Streptopelia decaocto*)

*Mourning Dove (*Zenaida macroura*)

ORDER: CUCULIFORMES (Cuckoos and Relatives)

FAMILY: CUCULIDAE (Typical Cuckoos)

*Greater Roadrunner (*Geococcyx californianus*)

ORDER: STRIGIFORMES (Owls)

FAMILY: TYTONIDAE (Barn Owls)

Common Barn Owl (*Tyto alba*)

FAMILY: STRIGIDAE (Typical Owls)

*Great Horned Owl (*Bubo virginianus*)

Western Screech Owl (*Otus kennicottii*)

ORDER: CAPRIMULGIFORMES (Goatsuckers and relatives)

FAMILY: CAPRIMULGIDAE (Goatsuckers)

*Lesser Nighthawk (*Chordeiles acutipennis*)

ORDER: APODIFORMES (Swifts and Hummingbirds)

FAMILY: TROCHILIDAE (Hummingbirds)

Black-chinned Hummingbird (*Archilochus alexandri*)

*Anna's Hummingbird (*Calypte anna*)

Rufous Hummingbird (*Selasphorus rufus*)

ORDER: PICIFORMES (Woodpeckers and relatives)

FAMILY: PICIDAE (Woodpecker and Wrynecks)

Northern Flicker (*Colaptes chrysoides*)

Nuttall's Woodpecker (*Picoides nuttallii*)

ORDER: PASSERIFORMES (Perching Birds)

FAMILY: TYRANNIDAE (Tyrant Flycatchers)

*Black Phoebe (*Sayornis nigricans*)

*Say's Phoebe (*Sayornis saya*)

*Ash-Throated Flycatcher (*Myiarchus cinerascens*)

*Western Kingbird (*Tyrannus verticalis*)

FAMILY: LANIIDAE (Shrikes)

*Loggerhead Shrike (*Lanius ludovicianus*)

FAMILY: CORVIDAE (Jays, Magpies, and Crows)

American Crow (*Corvus brachyrhynchos*)

*Common Raven (*Corvus corax*)

FAMILY: ALAUDIDAE (Larks)

*****Horned Lark (*Eremophila alpestris*)

FAMILY: HIRUNDINIDAE (Swallows)

Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)

*Cliff Swallow (*Hirundo pyrrhonota*)

*Barn Swallow (*Hirundo rustica*)

FAMILY: TROGLODYTIDAE (Wrens)

House Wren (*Troglodytes aedon*)

Rock Wren (*Salpinctes obsoletus*)

Bewick's Wren (*Thryomanes bewickii*)
FAMILY: REGULIDAE (Kinglets)
Ruby-crowned Kinglet (*Regulus calendula*)
FAMILY: TURDIDAE
Western Bluebird (*Sialia mexicana*)
American Robin (*Turdus migratorius*)
FAMILY: MIMIDAE (Mockingbirds and Thrashers)
*Sage Thrasher (Oreoscoptes montanus)
*Northern Mockingbird (*Mimus polyglottos*)
FAMILY: STURNIDAE (Starlings)
European Starling (*Sturnus vulgaris*)
FAMILY: MOTACILLIDAE (Wagtails and Pipits)
American Pipit (*Anthus rubescens*)
FAMILY: PARULIDAE (Wood Warblers and Relatives)
Orange-crowned Warbler (*Vermivora celata*)
*Yellow-rumped Warbler (*Dendroica coronata*)
FAMILY: EMBERIZIDAE (Wood Warblers, Sparrows, Blackbirds, and relatives)
*Lark Sparrow (*Chondestes grammacus*)
*Savannah Sparrow (*Passerculus sandwichensis*)
Golden-crowned Sparrow (*Zonotrichia atricapilla*)
*White-crowned Sparrow (*Zonotrichia leucophrys*)
FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)
Red-winged Blackbird (*Agelaius phoeniceus*)
*Western Meadowlark (*Sturnella neglecta*)
*Brewer's Blackbird (*Euphagus cyanocephalus*)
Brown-headed Cowbird (*Molothrus ater*)
*Bullock's Oriole (*Icterus bullocki*)
FAMILY: FRINGILLIDAE (Finches)
*House Finch (*Carpodacus mexicanus*)
Lesser Goldfinch (*Carduelis psaltria*)
FAMILY: PASSERIDAE (Old World Sparrows)
House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA (Mammals)
ORDER: DIDELPHIMORPHIA (Marsupials)
FAMILY: DIDELPHIDAE (Opossums)
Virginia Opossum (*Didelphis virginiana*)
ORDER: INSECTIVORA (Insectivores)
Ornate Shrew (*Sorex ornatus*)
ORDER: CHIROPTERA (Bats)
FAMILY: VESPERTILIONIDAE (Evening Bats)
Yuma Myotis (*Myotis yumanensis*)
California Myotis (*Myotis californicus*)
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
Western Red Bat (*Lasiurus borealis*)

FAMILY: MOLOSSIDAE (Free-tailed Bat)
*Mexican Free-tailed Bat (*Tadarida brasiliensis*)
ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)
FAMILY: LEPORIDAE (Rabbits and Hares)
Desert Cottontail (*Sylvilagus audubonii*)
*Black-tailed (Hare) Jackrabbit (*Lepus californicus*)
ORDER: RODENTIA (Rodents)
FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)
California Ground Squirrel (*Spermophilus beecheyi*)
FAMILY: GEOMYIDAE (Pocket Gophers)
Botta's Pocket Gopher (*Thomomys bottae*)
FAMILY: HETEROMYIDAE (Pocket Mice and Kangaroo Rats)
*****California Pocket Mouse (*Chaetodipus californicus*)
*****San Joaquin Pocket Mouse (*Perognathus inornatus*)
*Heermann's Kangaroo Rat (*Dipodomys heermani*)
FAMILY: MURIDAE (Old World Rats and Mice)
*Deer Mouse (*Peromyscus maniculatus*)
ORDER: CARNIVORA (Carnivores)
FAMILY: CANIDAE (Foxes, Wolves, and relatives)
Coyote (*Canis latrans*)
Gray Fox (*Urocyon cinereoargenteus*)
San Joaquin Kit Fox (*Vulpes macrotis mutica*)
FAMILY: PROCYONIDAE (Raccoons and relatives)
Raccoon (*Procyon lotor*)
FAMILY: MUSTELIDAE (Weasels, Badgers, and relatives)
Badger (*Taxidea taxus*)
FAMILY: MEPHITIDAE (Skunks)
Striped Skunk (*Mephitis mephitis*)
FAMILY: FELIDAE (Cats)
Bobcat (*Lynx rufus*)

Appendix D – BNLL Survey Data

BNLL SURVEY DATA, JACALITOS BRIDGE PROJECT (1955-01)

Date	Observers	Start Time	Start % Cloud Cover	Start Wind Speed (MPH)	Start Air Temp (°F)	Start Soil Temp (°F)	End Time	End % Cloud Cover	End Wind Speed (MPH)	End Air Temp (°F)	End Soil Temp (°F)	Reptiles Observed	
6-8-15	KK+SP	0720	0	2.8	78.0	77.6	0907	0	4.0	91.5	82.1	Whiptail = 13, Uta = 21	Original APE
6-9-15	KK+MJ	0736	90	2.2	85.2	84.3	0918	90	3.4	91.9	91.7	Whiptail = 9, Uta = 2	
6-10-15	KK+MJ	0805	10	3.0	82.5	85.0	1035	40	6.1	89.7	91.0	Whiptail = 20, Uta = 32	
6-11-15	KK+JH	0820	1	0.8	77.0	77.4	1040	5	1.2	85.6	81.3	Whiptail = 19 Uta = 72 Desert Spiny = 2	
6-23-15	JG+RJ	0848	2	3.5	78.4	80.0	1054	1	3.1	95.5	92.0	Whiptail = 2 Uta = 54 Desert Spiny = 1	Expanded APE
6-24-15	JG+RJ	0730	0	2.2	77.1	78.0	0935	0	4.1	94.5	101.0	Whiptail = 5 Uta = 88 Desert Spiny = 2	
6-29-15	JG+RJ	0730	50	5.1	77.0	82.0	0932	30	2.3	91.4	98.0	Whiptail = 5 Uta = 51 Desert spiny = 2	
6-30-15	JG+RJ	0650	20	1.7	83.1	86.0	0815	70	2.1	91.5	90.5	Whiptail = 2 Uta = 53 Desert spiny = 3	
7-10-15	JG+RJ	1000	35	3.3	77.4	92.0*	1200	15	6.0	94.8	107	Whiptail = 4 Uta = 47 Desert Spiny = 2	
7-13-15	JG+RJ	0945	2	2.4	79.4	98.0	1120	4	0.0	94.4	107	Whiptail = 4 Uta = 61 Desert Spiny = 1	
7-14-15	JG+RJ	0840	1	3.2	81.2	92.0	1025	2	3.6	90.6	103	Whiptail = 2 Uta = 80 Desert Spiny = 1	
7-15-15	JG+RJ	0850	0	2.4	80.5	92.0	1015	0	3.6	88.8	99	Whiptail = 4 Uta = 93 Desert Spiny = 1	
8-25-15	JG+AP	0814	0	1.0	81.0	87.0	1000	0	2.5	94.8	103	Whiptail = 2 Uta = 60 Spiny = 1	New Expanded APE
8-26-15	JG+AP	0810	25	3.4	81.7	85.0	0955	6	2.7	95.2	100	Whiptail = 1 Uta = 94	
8-31-15	JG+KK	0925	12	1.3	77.0	81.5	1125	12	3.2	93.0	97.5	Whiptail = 7 Uta = 71 Spiny = 2	
9-1-15	JG+KK	0935	0	1.1	82.0	89.0	1100	1	3.2	94.9	94.0	Uta = 109 Spiny = 1	
9-2-15	JG+KK	0935	2	6.0	81.1	85.0	1110	30	6.0	93.0	93.0	Uta = 110 Whiptail = 3 Spiny = 2	

BNLL SURVEY DATA, JACALITOS BRIDGE PROJECT

Date	Observers	Start Time	Start % Cloud Cover	Start Wind Speed (MPH)	Start Air Temp (°F)	Start Soil Temp (°F)	End Time	End % Cloud Cover	End Wind Speed	End Air Temp (°F)	End Soil Temp (°F)	Reptiles Observed
6-1-16	JG/AP	0855	0%	0	85.3	84	0925	0%	0.7	94.4	87	Uta - 6
6-17-16	JG/WF	1335	1%	1.6	89.5	94	1358	1%	0.9	93.6	100	Uta - 1
7-6-16	JG/WF	10 03	0%	0.8	81.3	86	10:34	0%	2.4	88.3	90	Uta - 3
7-13-16	JG/WF	0938	0	2.7	84.2	84	10:18	0	4.7	92.5	92	Uta - 5

Appendix E – Small Mammal Trapping Survey Data

Table 1: West Lost Hills Road Bridge Replacement on Jacalitos Creek Project Giant Kangaroo Rat Trapping Survey Results

Trap Check Date	Trap Night #	Trap Check Start Time (24hr)	Trap Check End Time (24hr)	Trap Check Start Temperature (F), Cloud Conditions, Wind Speed	Number of Traps set/ checked	No. of Heermann's Kangaroo Rat Captured		No. of California Pocket Mouse Captured		No. of San Joaquin Pocket Mouse Captured		No. of Deer Mouse Captured		Number of Traps Closed, Rolled, or Bait Stolen
						New	Recapture	New	Recapture	New	Recapture	New	Recapture	
8-May-17	1	5:30	7:50	54, mostly clear, 5 mph breeze	63	23	0	3	0	0	0	4	0	2
9-May-17	2	4:45	6:40	59, clear, 5mph breeze	63	2	14	1	1	0	0	5	2	4
10-May-17	3	4:45	6:15	56, clear, 1-2 mph breeze	63	3	13	1	2	3	0	4	3	4
11-May-17	4	4:40	7:57	61, clear and 1 mph breeze	63	1	17	3	1	0	0	1	4	4
12-May-17	5	4:45	6:30	55, partly cloudy, 5 mph gust	63	5	14	1	4	0	1	2	4	5
Total					315	34	58	9	8	3	1	16	13	19

Appendix F – Vascular Plant List

VASCULAR PLANTS OF THE STUDY AREA

The plant species listed below have been observed on the study area during 2015 and 2016 surveys conducted by Live Oak Associates, Inc. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland

AMARANTHACEAE – Amaranth Family		
Amaranthus albus	white amaranth	FACU
ASTERACEAE – Sunflower Family		
Ambrosia acanthicarpa	annual bursage	UPL
Baccharis salicifolia	mule fat	FAC
Centaurea melitensis	tocalote	UPL
Deinandra kelloggii	Kellogg's tarweed	UPL
Gutierrezia californica	California matchweed	UPL
Helianthus annuus	common sunflower	FACU
Lepidospartum squamatum	California broomshrub	FACU
Logfia filaginoides	California cottonrose	UPL
Matricaria discoidea	Pineapple weed	UPL
Senecio vulgaris	common groundsel	FACU
Stephanomeria pauciflora	wire lettuce	UPL
BORAGINACEAE – Borage Family		
Amsinckia intermedia	common fiddleneck	UPL
Amsinckia menziesii	small flowered fiddleneck	UPL
Heliotropium curassavicum	salt heliotrope	FACU
Medicago lupulina	black medic	FAC
Pectocarya penicillata	winged comb seed	UPL
Phacelia tanacetifolia	lacy phacelia	UPL
Plagiobothrys canescens	Valley popcornflower	UPL
BRASSICACEAE – Mustard Family		
Caulanthus lasiophyllus	California mustard	UPL
Hirschfeldia incana	short podded mustard	UPL
Lepidium nitidum	shinning pepper grass	FAC
Sisymbrium irio	London rocket	UPL
Sisymbrium orientale	Oriental hedge mustard	UPL
CHENOPODIACEAE – Goosefoot Family		
Atriplex polycarpa	allscale	UPL
Salsola tragus	Russian thistle	FACU

EUPHORBIACEAE – Spurge Family		
Croton setigerus	dove weed	UPL
Euphorbia ocellata ocellata	valley spurge	UPL
FABACEAE – Pea Family		
Acmispon brachycarpus	short podded lotus	UPL
Lupinus succulentus	arroyo lupine	UPL
Melilotus indicus	annual yellow sweetclover	FACU
GERANIACEAE – Geranium Family		
Erodium cicutarium	red-stemmed filaree	UPL
MALVACEAE – Mallow Family		
Malva parviflora	cheeseweed mallow	UPL
POACEAE – Grass Family		
Avena sp.	oats	UPL
Bromus diandrus	ripgut brome	UPL
Bromus madritensis ssp. *rubens*	red brome	UPL
Cynodon dactylon	Bermuda grass	FACU
Hordeum murinum ssp. *leporinum*	foxtail barley	FACU
Poa annua	annual bluegrass	FACU
Schismus sp.	schismus	UPL
Triticum aestivum	wheat	UPL
POLYGONACEAE – Buckwheat Family		
Eriogonum angulosum	anglestem buckwheat	UPL
POLEMONIACEAE – Pink Family		
Eriastrum hooveri	Hoover’s eriastrum	UPL
THEMIDACEAE		
Dichelostemma capitatum	blue dicks	FACU

Appendix G – Site Photographs

Photo 1: Jacalitos Creek

Photo 2: Jacalitos Creek Flood Plain

Photo 3: Valley saltbush scrub habitat with ruderal ranch road in foreground and ruderal scraped area in background before road.

Photo 4: Valley saltbush scrub habitat with ruderal ranch road. Trees in background outside of BSA.

Photo 5: Densely vegetated area of valley saltbush scrub habitat.

Photo 6: Ruderal area.

Appendix H – USFWS 2011 San Jaoquin Kit Fox Guidelines

U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE

Prepared by the Sacramento Fish and Wildlife Office
January 2011

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

IS A PERMIT NECESSARY?

Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens. Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process. All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to an6y survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied and unoccupied)	Service must be contacted

*Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service**.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.

The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is

discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.

5. No firearms shall be allowed on the project site.

6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be

re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.

12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.

13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.

14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT "A" - DEFINITIONS

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

HAZARDOUS WASTE

INITIAL SITE ASSESSMENT

Federal Project No. BRLO 5942 (234)
Jacalitos Creek Bridge Replacement
Fresno County, California

July 14, 2015

Prepared by:
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Project 607-2015

In conjunction with:
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APPENDICES

Appendix A – Regulatory Records and Historical Documentation Reports
Environmental Data Resources: Radius Map with Geocheck®, Aerial Photo Decade Package, Historical Topographic Map Report, Sanborn® Certified Map Report, City Directory Image Report

Appendix B – Preliminary Environmental Study

Appendix C – Photo Log

Appendix D – Caltrans Unknown Hazards Procedures

Appendix E – Qualifications

EXECUTIVE SUMMARY

This Hazardous Waste Initial Site Assessment (ISA) was performed by Haro Environmental, Inc. in conjunction with SWCA Environmental Consultants (SWCA) for the County of Fresno (County) in support of the Federal Project BRLO 5942 (234) Jacalitos Creek Bridge Replacement (project) in Fresno County, California. A site vicinity map is provided on Plate 1. The area evaluated for this ISA (project area) includes those areas which would be disturbed during construction of the proposed project (refer to Plate 2 for identification of the project area). Haro Environmental performed this ISA consistent with the California Department of Transportation (Caltrans) *Environmental Guidance Handbook, Volume 1, Chapter 10 Hazardous Materials, Hazardous Waste, and Contamination, Initial Site Assessment* (Caltrans 2014), and the American Society for Testing and Materials (ASTM) Practice E-1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM Standard). Exceptions to, or deletions from, this practice are described in this report.

The purpose of this assessment was to identify known, potential, and historic recognized environmental conditions (RECs) resulting from historic and/or current uses of hazardous substances or petroleum products at the project area. We understand that SWCA has requested this ISA on behalf of the County (project proponent). The findings of this assessment are based on Haro Environmental's knowledge of the project area from observations and information gathered during the preparation of this ISA.

The project area encompasses roughly 0.05 square miles along Lost Hills Road at Jacalitos Creek. Elevation at the project area is approximately 650 feet above mean sea level (MSL) with relief in the area sloping to the north. The proposed project consists of replacing the Jacalitos Creek Bridge (State Bridge No. 42C-0078; County Bridge No. FRE040501) on Lost Hills Road, approximately 3.5 miles southwest of the City of Coalinga. The five-span timber structure was originally built in 1940 and two spans were reconstructed of reinforced concrete slab in 1962. It is approximately 28 feet in width and 98 feet in length with two 11-foot-wide travel lanes and 2-foot-wide shoulders. Lost Hills Road is a two-lane, local, rural road used by local residents, ranchers and oil field personnel accessing nearby farmland and regional oil fields.

Results of a regulatory agency database search performed by Environmental Database Resources (EDR) indicate the project area was not listed in any of the databases searched, and no nearby properties were listed.

A review of historic aerial photographs, topographic maps, and city directory listings indicate the project area was modified with the construction of Lost Hills Road as of 1912 and the construction of the Jacalitos Creek Bridge by 1950. Vacant, undeveloped land has surrounded the project area since at least 1912.

A field visit of the project area was conducted by a Haro Environmental representative on July 2, 2015. During the field visit, Haro Environmental did not observe hazardous materials or petroleum products under conditions indicative of a release to the environment, or under conditions that pose a material threat of a future release to the environment. No hazardous materials or petroleum products were observed at off-site, nearby properties under current conditions that would pose a significant environmental concern to the project area.

Based on the data gathered and reviewed during this ISA, Haro Environmental did not identify RECs that have impacted, or pose a significant environmental threat to the project area with the exception of the following:

- The concrete used to construct Jacalitos Bridge may contain asbestos.
- The paint used on the railing may contain lead.

Based on the findings of this ISA, Haro Environmental provides the following recommendations:

- An asbestos survey should be performed to determine whether or not the concrete will require special handling and disposal.
- A lead-based paint survey should be performed to determine whether or not the railing paint contains elevated concentrations of lead which could require special handling and disposal.
- Testing and removal requirements for yellow traffic striping and pavement marking materials should be performed in accordance with Caltrans Construction Policy Bulletin 99-2 (Caltrans Construction Manual Chapter 7-107E; Caltrans, 2014a).

Haro Environmental provides the following general recommendations:

- As for all projects proposing excavation, grading, or pile driving, the potential exists for unknown hazardous materials contamination to be encountered during construction of the proposed project. Therefore, for any previously unknown hazardous waste material encountered as part of construction of the proposed project, the procedures outlined in Appendix E (Caltrans Unknown Hazards Procedures) shall be followed (Caltrans 2002).

Based on the information gathered and reviewed during preparation of this ISA, the potential appears low for hazardous materials to be encountered during construction of the proposed project, and as such, the

potential impact to the overall project scope, cost, and schedule from hazardous materials is expected to be low.

1.0 INTRODUCTION

This Hazardous Waste Initial Site Assessment (ISA) was performed by Haro Environmental, Inc. in conjunction with SWCA Environmental Consultants (SWCA) for the County of Fresno (County) in support of the Federal Project BRLO 5942 (234) Jacalitos Creek Bridge Replacement (project) in Fresno County, California. A site vicinity map is provided on Plate 1. The area evaluated for this ISA (project area) includes those areas which would be disturbed during construction of the proposed project (refer to Plate 2 for identification of the project area). Haro Environmental performed this ISA consistent with the California Department of Transportation (Caltrans) *Environmental Guidance Handbook, Volume 1, Chapter 10 Hazardous Materials, Hazardous Waste, and Contamination, Initial Site Assessment* (Caltrans 2014), and the American Society for Testing and Materials (ASTM) Practice E-1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM Standard). Exceptions to, or deletions from, this practice are described in this report.

1.1 PURPOSE

This ISA was performed to identify potential hazardous materials that could be encountered during implementation of the proposed project. We understand the County has requested this ISA to meet the requirement for federal funding of the proposed project. In addition, we understand that although the project is federally funded, no land will be deeded over to Caltrans from the County. The purpose of this assessment was to identify known, potential, and historic recognized environmental conditions (RECs) resulting from historic and/or current uses of hazardous substances or petroleum products at the project area.

The ASTM Standard defines a REC as:

> "The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment." The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate

governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions."

The ASTM Standard defines a historical REC as:

> "An environmental condition which, in the past, would have been considered a recognized environmental condition, but which may or may not be considered a recognized environmental condition currently." For example, a historical REC could be identified if a past release of any hazardous substances or petroleum products has occurred in connection with the property and has been remediated to the satisfaction of the lead regulatory agency as evidenced by a no further action letter or a case closure determination.

At the request of SWCA, on behalf of the County, Haro Environmental has completed this ISA. This report is subject to the limitations presented in this ISA report. This report describes Haro Environmental's assessment methodology, findings, and opinion as to the potential presence of RECs in connection with the project area.

1.2 SCOPE OF SERVICES

The scope of services conducted for this study included the following tasks:

- Perform an on-site reconnaissance to identify indicators of the existence of hazardous materials and petroleum products;

- Observe adjacent or nearby properties from the project area and public thoroughfares in an attempt to see if such properties are likely to use, store, generate, or dispose of hazardous materials or petroleum products;

- Obtain and review an environmental records database search from Environmental Data Resources, Inc. (EDR) to acquire information about the potential for hazardous materials to exist on-site or at nearby properties;

- Review the current U.S. Geological Survey (USGS) topographic map to obtain information about topography and uses of the project area and nearby properties;

- Review historic aerial photographs, topographic maps, Sanborn Fire Insurance Maps, and historic city directory listings, if available, to obtain information about historic uses of the project area and adjacent properties;

- Review California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR) records to obtain information about historic oil and gas activity in the vicinity of the project area;

- Conduct interviews with persons familiar with the project area development and local and/or State government agencies, as warranted, to obtain information about current and historic uses of the property; and,

- Prepare a report documenting the findings of the ISA.

The scope of services did not include any inquiries with respect to non-scope ASTM considerations including, but not limited to, radon gas, lead in drinking water, mold, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, geologic hazards, endangered species, indoor air quality or electromagnetic fields, subsurface or other invasive assessments, business environmental risk evaluations or other services not particularly identified and discussed herein.

2.0 PROJECT INFORMATION

This section provides a description of the prosed project setting and the condition of the project area at the time this ISA was being prepared. Tables 2-1 and 2-2 summarize the physical characteristics of the project area and adjoining properties. A Site and Adjacent Land Use Map is provided on Plate 2.

2.1 PROJECT DESCRIPTION

The proposed project consists of replacing the Jacalitos Creek Bridge (State Bridge No. 42C-0078; County Bridge No. FRE040501) on Lost Hills Avenue at Jacalitos Creek Road, near the City of Coalinga. The existing functionally obsolete, 2-lane bridge would be replaced with a new 2-lane bridge that meets current standards. Jacalitos Creek Road may need to shift slightly at the intersection with Lost Hills Avenue to accommodate approach railing. It is anticipated that an onsite low-water crossing would be used to move traffic through the construction site. Right-of-way acquisition may be required. Utility relocation is not anticipated.

The five-span timber structure was originally built in 1940 and two spans were reconstructed of reinforced concrete slab in 1962. It is approximately 28 feet in width and 98 feet in length with two 11-foot-wide travel lanes and 2-foot-wide shoulders. The proposed structure could be approximately 32 feet in width and 105 feet in length.

2.2 PROJECT AREA DESCRIPTION

Table 2-1 provides a summary of the physical location and size of the project area, as well as the current and proposed land uses. This information was obtained from review of various maps (including topographic maps and tax assessor maps) and aerial photographs. Additional site description information was obtained during the site visit. Please refer to Section 5.0 for site reconnaissance information.

TABLE 2-1
PROJECT AREA LOCATION AND LAND USE

Parameter	Information/Comments
Location	The project area encompasses roughly 0.05 square miles along Lost Hills Road at Jacalitos Creek.

TABLE 2-1
PROJECT AREA LOCATION AND LAND USE

Parameter	Information/Comments
Assessor's Parcel Nos. (APNs)	The project area is located within APNs 083-050-08S, 083-050-04S, and 083-260-01S.
Section, Township, and Range	Section 14, Township 21 South, Range 15 East of the Mount Diablo Base and Meridian.
Current Use	Bridge, Lost Hills Road, and Jacalitos Creek Road.

2.3 REGIONAL GEOLOGY AND HYDROGEOLOGY

Information on regional geology and hydrogeology is presented in Table 2-2. This information was obtained from published data and maps of the project area vicinity.

TABLE 2-2
PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Geologic/Hydrogeologic Parameter	Information/Comments
Project Area Topography	Based on a review of the USGS Kreyenhagen Hills, California 7.5-Minute Topographic Quadrangle Map, dated 1978, elevation at the project area is approximately 650 feet above MSL with topography generally sloping to the north.
Project Area Geology and Soil Types	The project area is located within the Great Valley Geomorphic Province in California (CGS 2002). The Great Valley is an alluvial plain, extending approximately 50 miles wide by 400 miles long. The northern part is identified as the Sacramento Valley, drained by the Sacramento River, and the southern part is identified as the San Joaquin Valley, drained by the San Joaquin River. The Great Valley is a trough in which sediments have been deposited almost continuously since the Jurassic period (about 160 million years ago). The Great Valley is bound by the Klamath Mountains to the north, the Sierra Nevada to the east, the Coast Ranges to the west, and the Tehachapi Mountains to the south. According to the Geologic Atlas of California – Fresno Sheet (CGS 1965), geologic deposits beneath the site consist of alluvial fan deposits. Based on information provided in the Geo-Check® section of the EDR report (Appendix A), soils at the project area include the Excelsior sandy loam found within the Jacalitos Creek channel and at the northwest corner of the project area, and the Milham-Guijarral association found at the southeast portion of the project area. These soils are moderately deep to deep and are moderately well to well-drained, and have sandy loam surface textures and moderate infiltration rates.
Project Area Hydrogeologic Setting	The site is located within the Pleasant Valley Subbasin of the San Joaquin Valley Groundwater Basin (California Department of Water Resources [DWR] 2006). The San Joaquin Valley represents the southern portion of

TABLE 2-2
PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

Geologic/Hydrogeologic Parameter	Information/Comments
	the Great Central Valley of California. The Pleasant Valley Subbasin lies along the west side of the San Joaquin Valley, north of the Kings-Kern county line. It straddles the Fresno-Kings county line. The Subbasin is surrounded by Tertiary continental and marine sediments of the Coast Ranges and west flank of the Kettleman Hills. The Subbasin includes the older and younger alluvium of the San Joaquin Valley. The eastern boundary of the Subbasin abuts the Westside and Tulare Lake subbasins. The southern boundary abuts the Kern County Subbasin. According to the GeoCheck® section of the EDR report (Appendix A), one groundwater well is located within a one-quarter-mile radius of the project area. This well is located approximately 1,000 feet to the south-southeast of the project area. The nearest surface water body is Jacalitos (intermittent) Creek which runs through the middle of the project area. No groundwater wells are located within the project area.

2.4 ADJOINING AREA LAND USE

A visual survey of the land adjoining the project area was performed from the project site by Haro Environmental personnel on July 2, 2015. The results of this survey indicate the project area is surrounded by vacant, undeveloped land. The project area land uses and adjoining land uses are depicted on Plate 2.

2.5 USER-PROVIDED INFORMATION

The Preliminary Environmental Study (PES) prepared by Ms. Alexis Rutherford was reviewed as part of this ISA and a copy is provided in Appendix B. Based on the answers to the questions in the PES, Ms. Rutherford indicated she was not aware of the presence of railroads or hazardous materials associated with the project and that, to her knowledge, there are no clean-up or listed sites with the vicinity of the project area.

2.6 ENVIRONMENTAL LIENS

No environmental lien search was conducted by the user or preparer of this ISA report.

3.0 RECORDS REVIEW

Government agency database records are sources of information that may be helpful in evaluating activities that may have contributed to a release of hazardous substances or petroleum products to soil and/or groundwater. Haro Environmental contracted a government agency database search from EDR. A copy of the EDR report, which specifies the approximate minimum search distance for each public list as defined in the ASTM Standard, is included as Appendix A. No listed properties were identified within the approximate minimum search distance from the project area (see Appendix A for acronyms used by EDR).

3.1 EDR ORPHAN LIST

Sites that have poor or inadequate address information are not plotted by EDR and are referred to as orphan sites. No unmapped orphan sites were listed in the EDR Report.

3.2 NON-ASTM ISSUES

Assessment of non-ASTM issues including, but not limited to, radon gas, lead in drinking water, mold, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, geologic hazards, endangered species, indoor air quality or electromagnetic fields, subsurface or other invasive assessments, business environmental risk evaluations, or other services not particularly identified and discussed herein was not included as part of this ISA.

3.3 OTHER RECORDS REVIEWED

3.3.1 Public Agency Records

The National Pipeline Mapping System maintained by the Pipeline and Hazardous Materials Safety Administration was reviewed for the presence of gas and hazardous liquid transmission pipelines, and the results indicate there are no mapped pipelines located within a one-mile radius of the project area (PHMSA, 2015).

The following additional public agencies were contacted regarding files for the project area and indicated no files are available:

- Fresno County Department of Public Health – Environmental Health Division; and,
- Regional Water Quality Control Board – Central Valley Region.

3.3.2 Previous Environmental Reports

No previous environmental reports were provided for review.

4.0 PROJECT AREA HISTORY

The history of the project area was researched to identify obvious uses of the project area as early as the first developed use, or at least 40 years ago, whichever was earlier or readily available. Several data gaps since 1940 of greater than 5 years were identified in the historical records reviewed and included the years from 1944 to 1950, from 1950 to 1956, from 1956 to 1965, and from 1971 to 1978. These data gaps are considered insignificant because the project area use appears to be similar during the data gaps and it is known that the Jacalitos Creek Bridge was built in 1940.

4.1 AERIAL PHOTOGRAPHS

A review of historical aerial photography may indicate past activities at a property that may not be documented by other sources, or observed during a site visit. The effectiveness of this technique depends on the scale and quality of the photographs and the available coverage. Aerial photographs were obtained from several historical photograph collections through EDR. A tabulation of the aerial photographs reviewed is presented in Table 4-1.

TABLE 4-1
HISTORICAL AERIAL PHOTOGRAPHS REVIEWED

Date	Approximate Scale	Source
1937	1” = 500’	USGS
1940	1” = 500’	USGS
1950	1” = 500’	USGS
1957	1” = 500’	Cartwright
1965	1” = 500’	Cartwright
1970	1” = 500’	Cartwright
1981	1” = 500’	USGS
1989	1” = 500’	USGS
1994	1” = 500’	USGS/DOQQ
2005	1” = 500’	USDA/NAIP
2006	1” = 500’	USDA/NAIP
2009	1” = 500’	USDA/NAIP
2010	1” = 500’	USDA/NAIP
2012	1” = 500’	USDA/NAIP

Note: Aerial photographs only provide information on indications of land use and no conclusions regarding the release of hazardous substances or petroleum products can be drawn from the review of photographs alone.

Copies of the reviewed aerial photographs are included in Appendix A. The following is a summary of Haro Environmental's review of these photographs.

- ***1937*** – Lost Hills Road is located in its present day location. Surrounding land is vacant and undeveloped.

- ***1940*** – The project area and nearby properties appear similar to the 1937 aerial photograph.

- ***1950*** – The Jacalitos Creek Bridge appears at its present day location within the project area. Nearby properties appear similar to the 1940 aerial photograph.

- ***1957*** – The project area and nearby properties appear similar to the 1950 aerial photograph.

- ***1965*** – The project area and nearby properties appear similar to the 1957 aerial photograph.

- ***1970*** – The project area and nearby properties appear similar to the 1965 aerial photograph.

- ***1981*** – The project area and nearby properties appear similar to the 1970 aerial photograph.

- ***1989*** – The project area and nearby properties appear similar to the 1981 aerial photograph with the exception of rural residential land uses appearing south of the project area along Jacalitos Creek Road.

- ***1994*** – The project area and nearby properties appear similar to the 1989 aerial photograph.

- ***2005*** – The project area and nearby properties appear similar to the 1994 aerial photograph.

- ***2006*** – The project area and nearby properties appear similar to the 2005 aerial photograph.

- ***2009*** – The project area and nearby properties appear similar to the 2006 aerial photograph.

- ***2010*** – The project area and nearby properties appear similar to the 2009 aerial photograph.

- ***2012*** – The project area and nearby properties appear similar to the 2010 aerial photograph.

4.2 HISTORICAL TOPOGRAPHIC MAPS

Haro Environmental reviewed historical topographic maps of the project area vicinity. The topographic maps reviewed for this assessment are listed below in Table 4-2. Copies of the maps provided by EDR are provided in Appendix A.

TABLE 4-2
HISTORICAL TOPOGRAPHIC MAPS REVIEWED

Year	Quadrangle	Series	Scale
1912	Coalinga	30 minute	1:125,000
1941	Kreyenhagen Hills	7.5 minute	1:24,000
1944	Coalinga	15 minute	1:62,500
1950	Kreyenhagen Hills	7.5 minute	1:24,000
1956a	Coalinga	15 minute	1:62,500
1956b	Kreyenhagen Hills	7.5 minute	1:24,000
1971 (photorevised from 1956)	Kreyenhagen Hills	7.5 minute	1:24,000
1978 (photorevised from 1956)	Kreyenhagen Hills	7.5 minute	1:24,000

The following is a summary of Haro Environmental's review of the maps.

- ***1912*** – The project area and surrounding land is depicted as undeveloped. Lost Hills Road is depicted in its present day location.

- ***1941*** – The project area and surrounding land is depicted similar to the 1912 map.

- ***1944*** – The project area and surrounding land is depicted similar to the 1941 map.

- ***1950*** – The project area and surrounding land is depicted similar to the 1944 map with the exception of Zuburi Ranch identified to the south of the project area.

- ***1956a*** – The project area and surrounding land is depicted similar to the 1950 map.

- ***1956b*** – The project area and surrounding land is depicted similar to the 1956a map.

- ***1971*** – The project area and surrounding land is depicted similar to the 1956b map.

- ***1978*** – The project area and surrounding land is depicted similar to the 1971 map.

4.3 SANBORN® FIRE INSURANCE MAPS

Sanborn® Fire Insurance Maps provide historical land use information in some metropolitan areas and small, established towns. EDR indicated Sanborn® Fire Insurance Maps are not available for the project area. A copy of the no-coverage letter is included in Appendix A.

4.4 CITY DIRECTORIES

Haro Environmental contacted EDR to obtain a historical city directory abstract, which lists the names and/or businesses that historically occupied an address. The City Directory Abstract, which covers the period from 1985 to 2013, provides tenant information for an address and/or adjoining streets. In general, residential listings were noted for surrounding properties and appear to be consistent with the rural residential setting of the project area. The complete EDR City Directory Abstract listing results is provided in Appendix A.

4.5 OIL AND GAS MAPS

Maps provided online by DOGGR were reviewed to determine the current and historic presence of oil and gas wells in the vicinity of the project area (DOGGR 2003). The maps indicated there are three oil or gas wells located within a one-mile-radius of the project area. The nearest well is an oil well located approximately 2,500 feet to the southwest of the project area and is identified as Anshutz Exploration Corporation well number 12-12. According to the records maintained by DOGGR, this well was reportedly drilled, plugged and abandoned in 1996. Based on the distance from the project area and the 'plugged and abandoned' status, the Anshutz Exploration Corporation well number 12-12 would not be expected to pose an environmental concern to the project area. In addition, based on the distance from the project area and the 'plugged and abandoned' status, the remaining two wells located within a one-mile radius of the project area (3,000 feet to the northwest and 3,500 feet to the southwest) would not be expected to pose an environmental concern to the project area.

4.6 CHAIN OF TITLE RECORDS

Haro Environmental was provided a Preliminary Title Report for the project area.

5.0 SITE RECONNAISSANCE AND INTERVIEWS

5.1 SITE RECONNAISSANCE

Haro Environmental's assessment activities included a site reconnaissance. This section summarizes the findings of the site reconnaissance.

5.1.1 Methodology and Limiting Conditions

Haro Environmental performed a site reconnaissance of the project area on July 2, 2015. The project area reconnaissance was conducted by observing the project area and adjacent properties from public thoroughfares. The purpose of the site reconnaissance was to identify the presence or likely presence of hazardous substances and petroleum products under conditions that indicate an existing release, a past release, or threat of release into soil, groundwater, or surface water at the project area (RECs). Observations from the site reconnaissance are summarized in the following sections. A photo log of photographs taken during the site reconnaissance is provided in Appendix C.

5.1.2 Current Use of the Property and Adjoining Properties

The project area is currently comprised of the Jacalitos Creek Bridge, rural roadways, and vacant land. Surrounding land is vacant and undeveloped. Rural residences are located approximately 500 feet to the south of the project area. Land uses in the project area are depicted on Plate 2.

5.1.3 General Description of Structures

Jacalitos Creek Bridge is a five-span timber structure originally built in 1940, with two spans reconstructed of reinforced concrete in 1962. It is approximately 28 feet in width and 98 feet in length with two 11-foot-wide travel lanes and 2-foot-wide shoulders.

5.1.4 Interior and Exterior Observations

No buildings are located within the project area.

5.1.5 Hazardous Substances and Petroleum Products

No hazardous substances were observed in the project area or on surrounding properties.

5.1.6 Unidentified Substance Containers

During the site reconnaissance, Haro Environmental did not observe evidence of unidentified hazardous substance containers or unidentified containers that might contain hazardous substances in the project area.

5.1.7 Storage Tanks

During the site reconnaissance, Haro Environmental did not observe evidence of underground storage tanks (USTs) or above ground storage tanks (ASTs) in the project area.

5.1.8 Odors

During the site reconnaissance, Haro Environmental did not identify any strong, pungent, or noxious odors.

5.1.9 Pools of Liquid

During the site reconnaissance, Haro Environmental did not identify any pools of liquid or standing surface water. In addition, Haro Environmental did not identify any sumps containing liquids such as hazardous substances or spent petroleum products.

5.1.10 Drums

A drum is a container (typically, but not necessarily, holding 55-gallons of liquid) that may be used to store hazardous substances or petroleum products. During the site reconnaissance, Haro Environmental did not observe drums in the project area.

5.1.11 Indications of Polychlorinated Biphenyls (PCBs)

Polychlorinated Biphenyls (PCBs) are chemicals potentially associated with electrical transformers and florescent light ballasts. During the site reconnaissance, Haro Environmental did not observe evidence of PCBs onsite.

5.1.12 Other Conditions of Concern

During the site reconnaissance, Haro Environmental did not note any of the following:

- Corrosion ;
- Clarifiers, and/or sumps;
- Stressed vegetation;
- Wastewater;
- Storm drains;
- Ponds; and,
- Septic tanks.

The concrete used to construct Jacalitos Bridge may contain asbestos and the paint used on the railing may contain lead.

6.0 FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This Hazardous Waste ISA was performed by Haro Environmental, Inc. in conjunction with SWCA for the County in support of Federal Project BRLO 5942 (234) Jacalitos Creek Bridge Replacement project in Fresno County, California.

Based on the data gathered and reviewed during this ISA, Haro Environmental did not identify RECs that have impacted, or pose a significant environmental threat to the project area with the exception of the following:

- The concrete used to construct Jacalitos Bridge may contain asbestos.
- The paint used on the railing may contain lead.

Based on the findings of this ISA, Haro Environmental provides the following recommendations:

- An asbestos survey should be performed to determine whether or not the concrete will require special handling and disposal.
- A lead-based paint survey should be performed to determine whether or not the railing paint contains elevated concentrations of lead which could require special handling and disposal.
- Testing and removal requirements for yellow traffic striping and pavement marking materials should be performed in accordance with Caltrans Construction Policy Bulletin 99-2 (Caltrans Construction Manual Chapter 7-107E; Caltrans, 2014a).

Haro Environmental provides the following general recommendations:

- As for all projects proposing excavation, grading, or pile driving, the potential exists for unknown hazardous materials contamination to be encountered during construction of the proposed project. Therefore, for any previously unknown hazardous waste material encountered as part of construction of the proposed project, the procedures outlined in Appendix E (Caltrans Unknown Hazards Procedures) shall be followed (Caltrans 2002).

Based on the information gathered and reviewed during preparation of this ISA, the potential appears low for hazardous materials to be encountered during construction of the proposed project, and as such, the potential impact to the overall project scope, cost, and schedule from hazardous materials is expected to be low.

7.0 STANDARD OF CARE

The findings and conclusions contained in this ISA are based upon professional opinions with regard to the subject matter. These conclusions have been made in accordance with currently accepted industry standards and practices applicable to this location and are subject to the following inherent limitations.

Accuracy of Information. Information utilized by Haro Environmental in this assessment has been obtained, reviewed, and evaluated from various sources believed to be reliable. Although Haro Environmental's conclusions, opinions, and recommendations are based, in part, on such information, Haro Environmental's services did not include the verification of the accuracy or authenticity of the information. Should such information prove to be inaccurate or unreliable, Haro Environmental reserves the right to amend or revise its conclusions, opinions, and/or recommendations.

Reconnaissance. Haro Environmental performed a reconnaissance of the project area that is the subject of this assessment to document current conditions. No known areas were inaccessible at the time of Haro Environmental's reconnaissance.

Limitations. Haro Environmental does not guarantee that the project area is free of hazardous or potentially hazardous materials or conditions, or that latent or undiscovered conditions will not become evident in the future. This assessment has been prepared in accordance with currently accepted industry standards, and no other warranties, representations, or certifications are intended. Unless stated otherwise herein, this report is intended for and restricted to the sole use by SWCA and the County. Any other use, interpretation, or reliance upon this assessment is at the sole risk of the user, and Haro Environmental shall have no liability for such unauthorized use, interpretation, or reliance.

Qualifications of Environmental Professionals. Mr. Elliot Haro, representing Haro Environmental, performed this ISA. Mr. Haro is an environmental consultant who has performed multiple ISAs for a variety of clients. Mr. Timothy Nelligan reviewed this report. Mr. Nelligan is a California State Licensed Professional Engineer with over 15 years of site assessment experience. Messrs. Haro's and Nelligan's resumes are provided in Appendix E.

Reliance. This ISA report has been prepared for the exclusive use and reliance by SWCA and the County. Use or reliance by any other party is prohibited without the written authorization of SWCA, the County, and Haro Environmental.

Scope Limitations and ASTM Exceptions. This ISA did not include any inquiries with respect to non-scope ASTM considerations including, but not limited to, radon gas, lead in drinking water, mold, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, geologic hazards, endangered species, indoor air quality or electromagnetic fields, subsurface or other invasive assessments, business environmental risk evaluations or other services not particularly identified and discussed herein.

Reasonable attempts were made to obtain information within the scope and time constraints set forth by the County however, in some instances, information requested may not be received by the issuance date of the report. In the event that information obtained from sources mentioned previously alters the findings stated in this report, an addendum letter will be forwarded to SWCA and the County under separate cover providing Haro Environmental's findings and conclusions. Additional ISA limitations include:

- Several data gaps since 1940 of greater than 5 years were identified in the historical records reviewed and included the years from 1944 to 1950, from 1950 to 1956, from 1956 to 1965, and from 1971 to 1978. These data gaps are considered insignificant because the project area use appears to be similar during the data gaps and it is known that the Jacalitos Creek Bridge was built in 1940.

This report represents our service to you as of the report date and constitutes our final document; its text may not be altered after final issuance. Findings in this report are based upon the current utilization of the project area, information derived from the most recent reconnaissance, and from other activities described herein; such information is subject to change. Certain indicators of the presence of hazardous substances or petroleum products may have been latent, inaccessible, unobservable, or not present during the reconnaissance and may subsequently become observable (i.e., after site renovation or development). Further, these services are not to be construed as legal interpretation or advice.

8.0 REFERENCES

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EDR. June 16, 2015. The EDR Sanborn® Map Report, Jacalitos Creek Bridge, Coalinga, CA 93210.

EDR. June 18, 2015. The EDR-City Directory Image Report, Jacalitos Creek Bridge, Coalinga, CA 93210.

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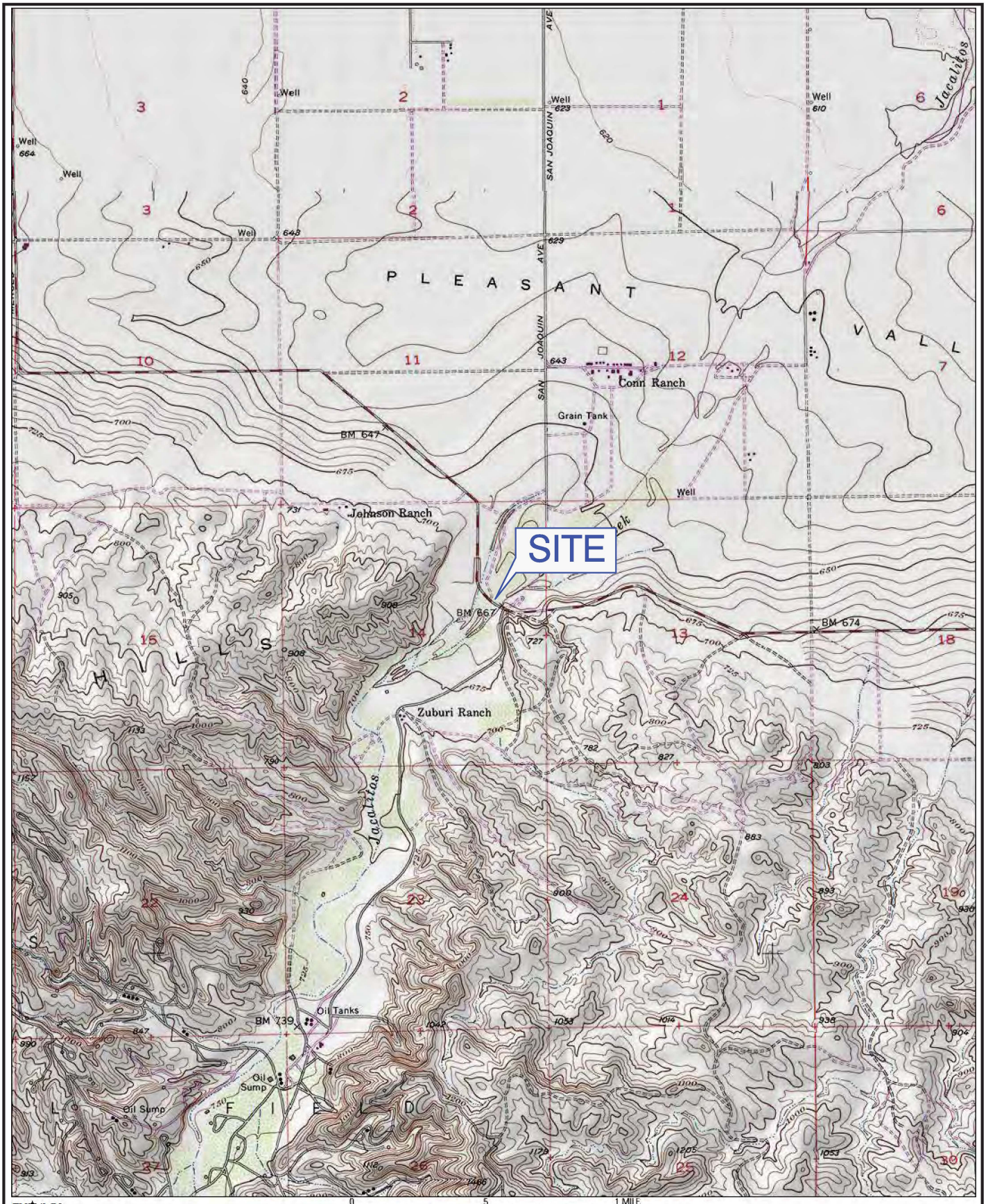
PLATES



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HARO ENVIRONMENTAL
1065 Higuera St. Suite 301
San Luis Obispo, CA 93401
Phone: 805 204 4483
Fax: 805 831 6081

FILE NAME: *SITE VICINITY MAP.DWG*

SITE VICINITY MAP

Jacalitos Creek Bridge
Fresno County, California

PLATE: 1
SHEET: of
REVISION NO: 0
DATE: 06/15

HARO ENVIRONMENTAL
1065 Higuera Street, Suite 301
San Luis Obispo, California 93401
Phone: 805.204.4483
Fax: 805.832.6081

SALU MAP.dwg

SITE AND ADJACENT LAND USE MAP

Jacalitos Creek Bridge
Fresno County, California

PLATE: 2

REVISION NO:

DATE: 07/15

APPENDIX A

REGULATORY RECORDS DOCUMENTATION

Jacalitos Creek Bridge
Jacalitos Creek Bridge
Coalinga, CA 93210

Inquiry Number: 4327338.3
June 16, 2015

Certified Sanborn® Map Report

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

6/16/15

Site Name:
Jacalitos Creek Bridge
Jacalitos Creek Bridge
Coalinga, CA 93210

EDR Inquiry # 4327338.3

Client Name:
Haro Environmental, Inc.
PO Box 7002
Los Osos, CA 93412

Contact: Elliot Haro

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Certified Sanborn Results:

Site Name: Jacalitos Creek Bridge
Address: Jacalitos Creek Bridge
City, State, Zip: Coalinga, CA 93210
Cross Street:
P.O. # NA
Project: NA
Certification # 6472-4FB2-854E

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results
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- ✔ University Publications of America
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Jacalitos Creek Bridge
Jacalitos Creek Bridge
Coalinga, CA 93210

Inquiry Number: 4327338.4
June 16, 2015

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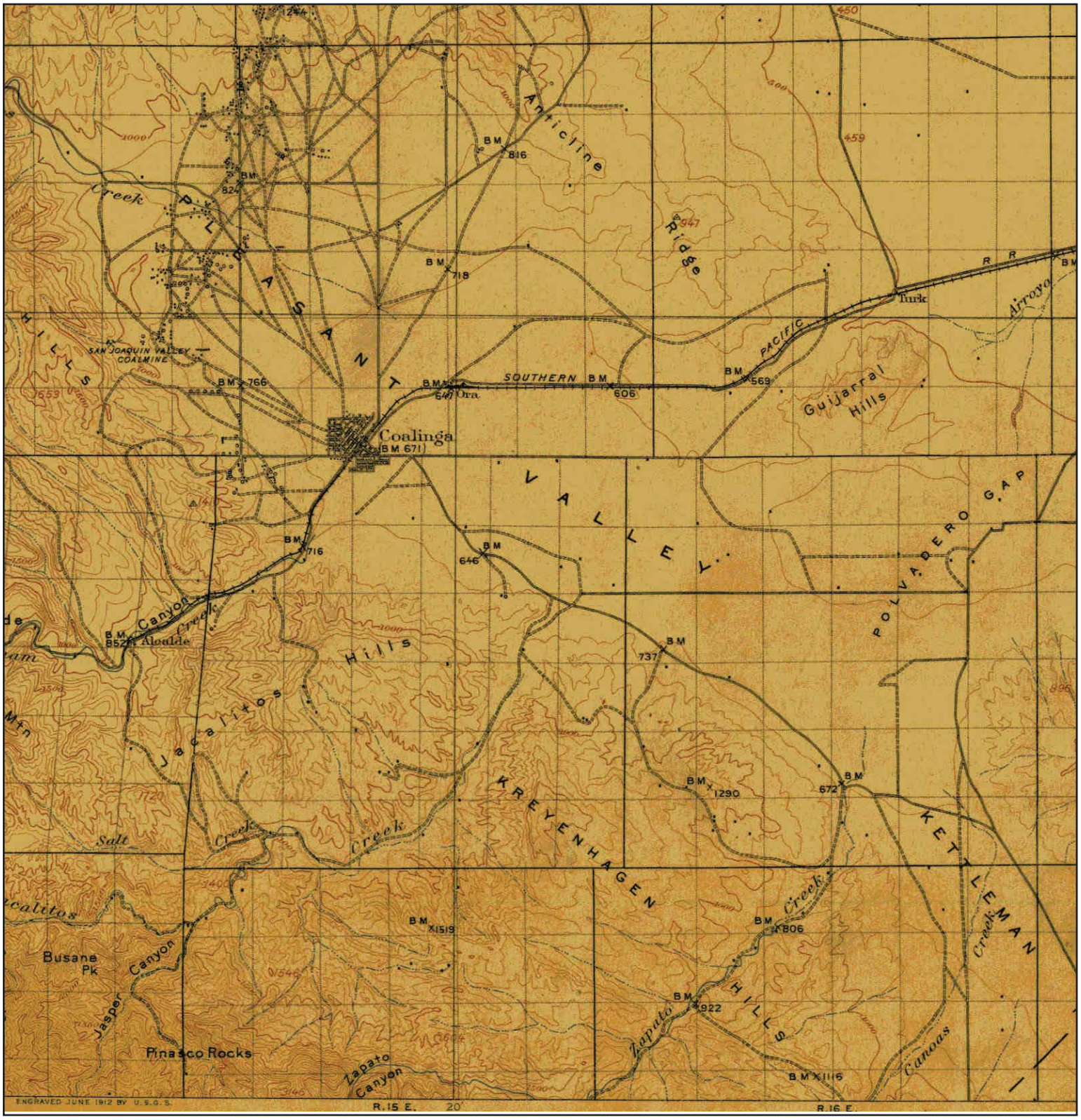

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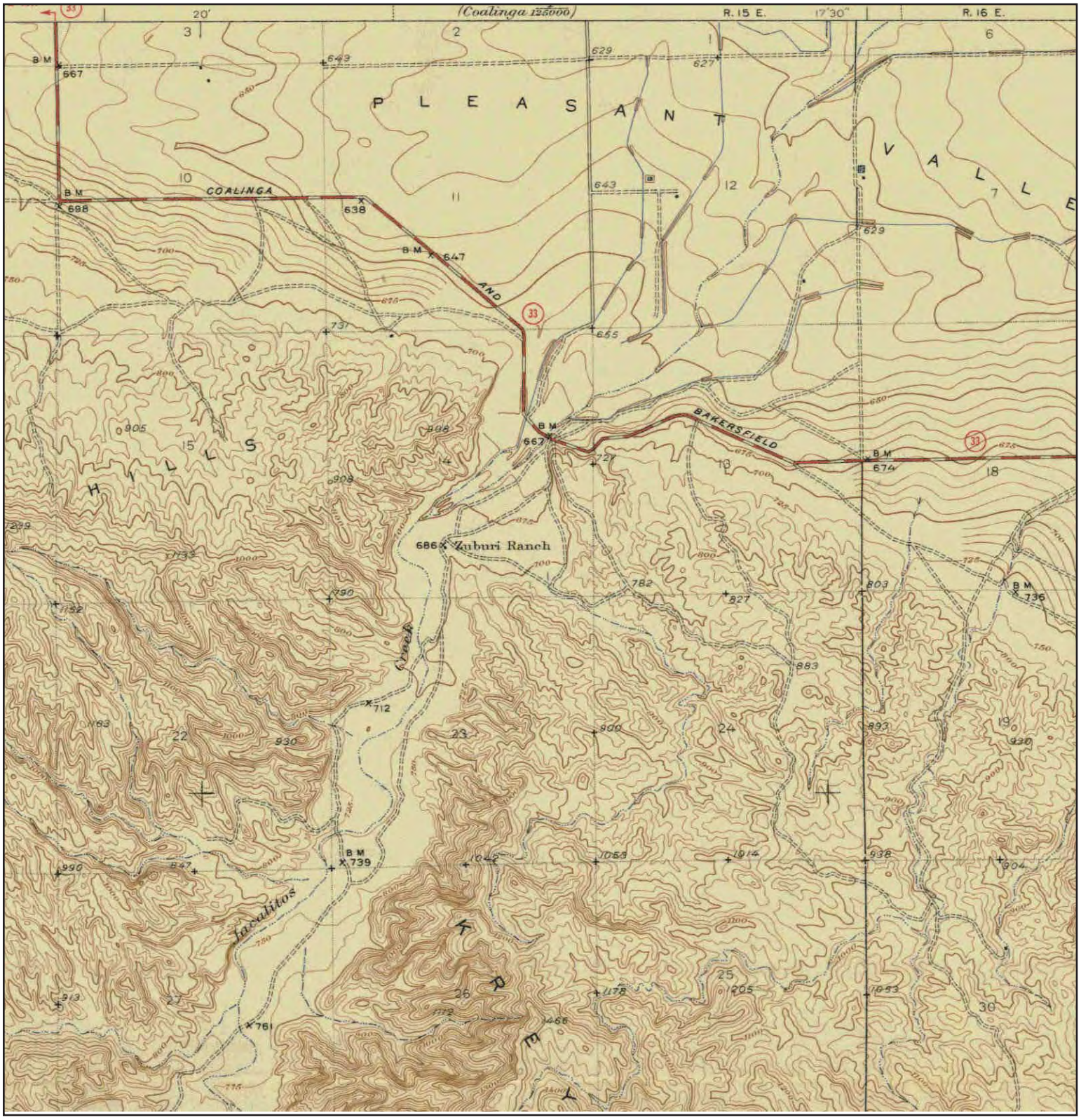

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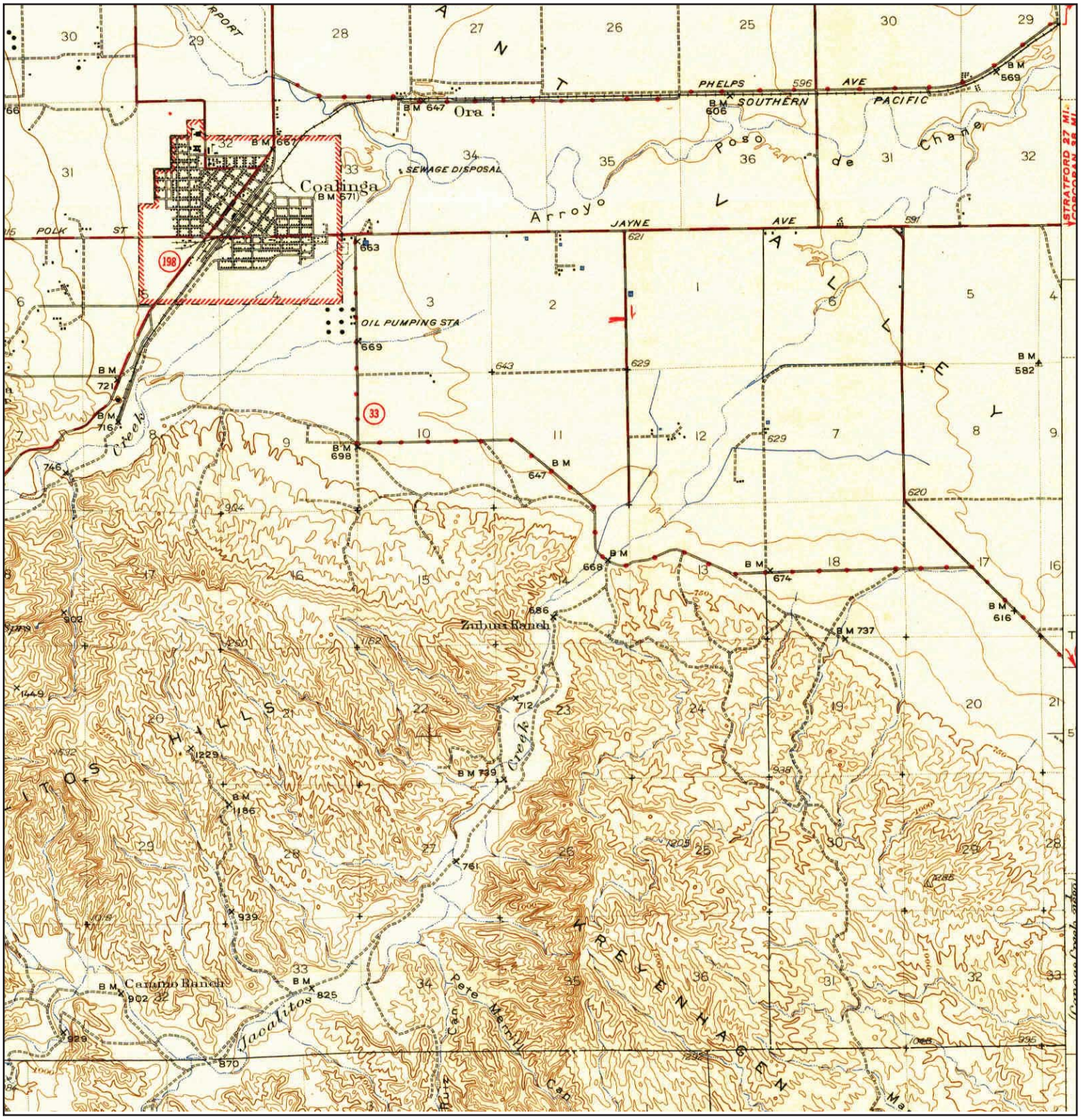

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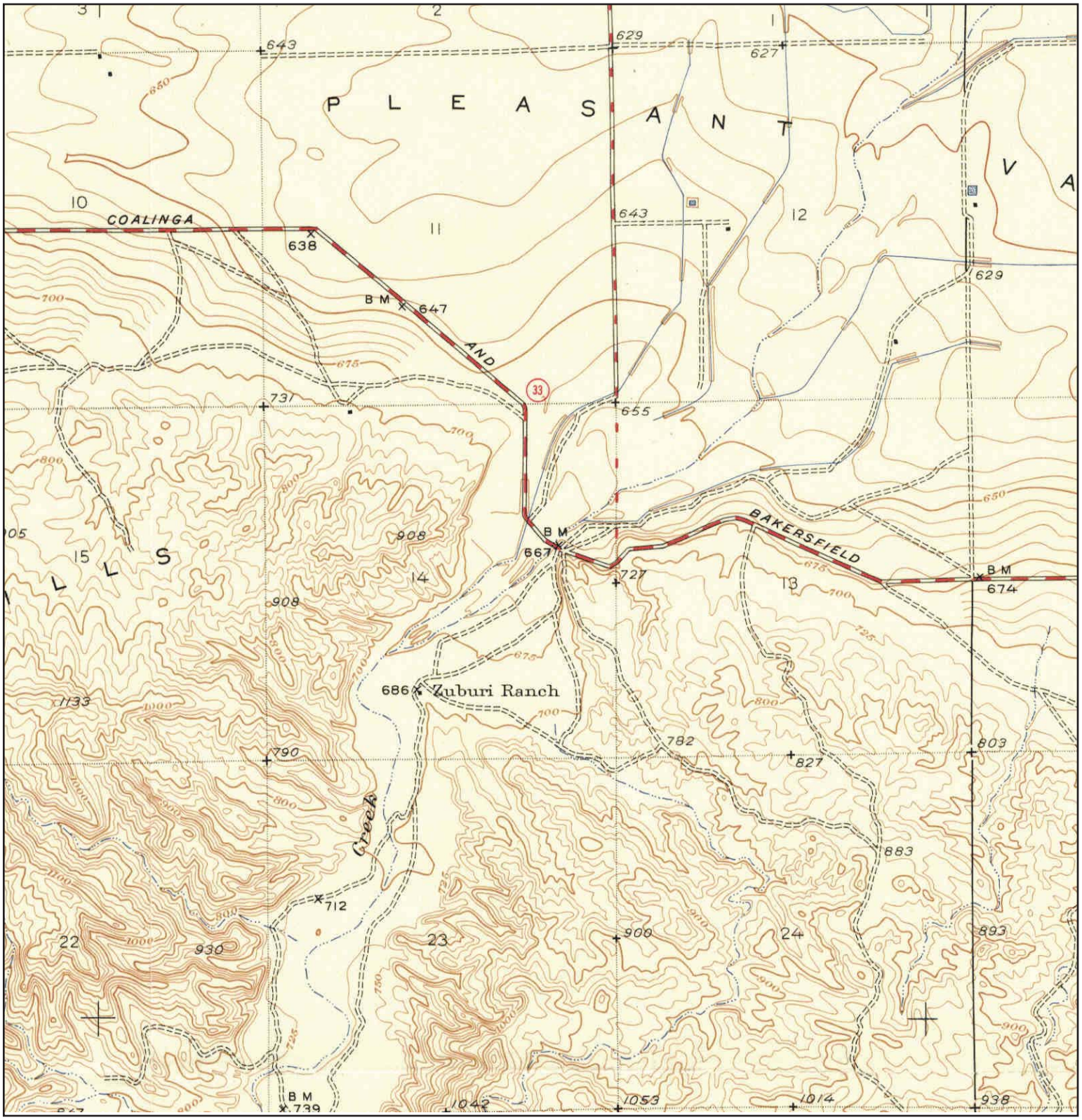

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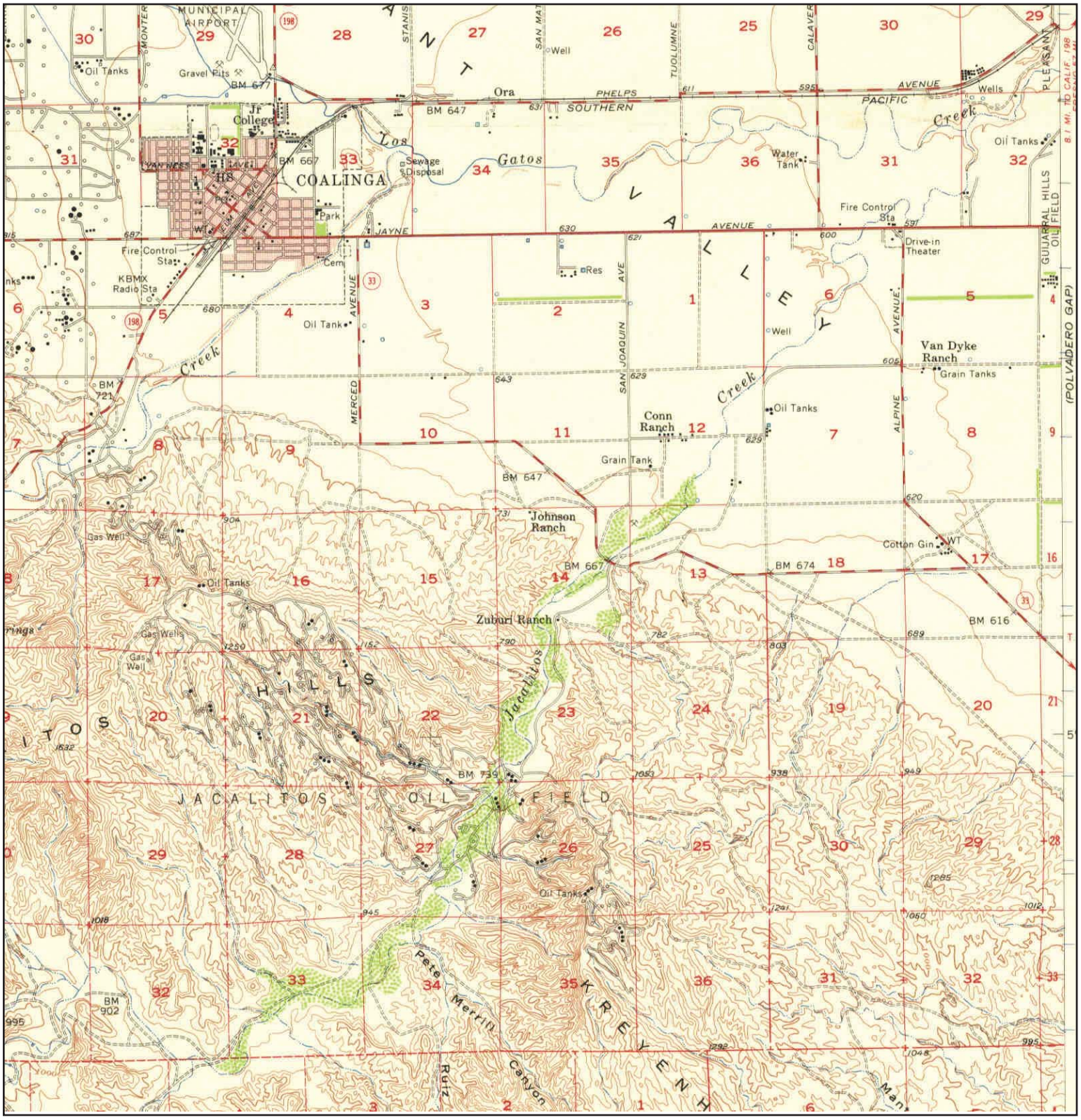

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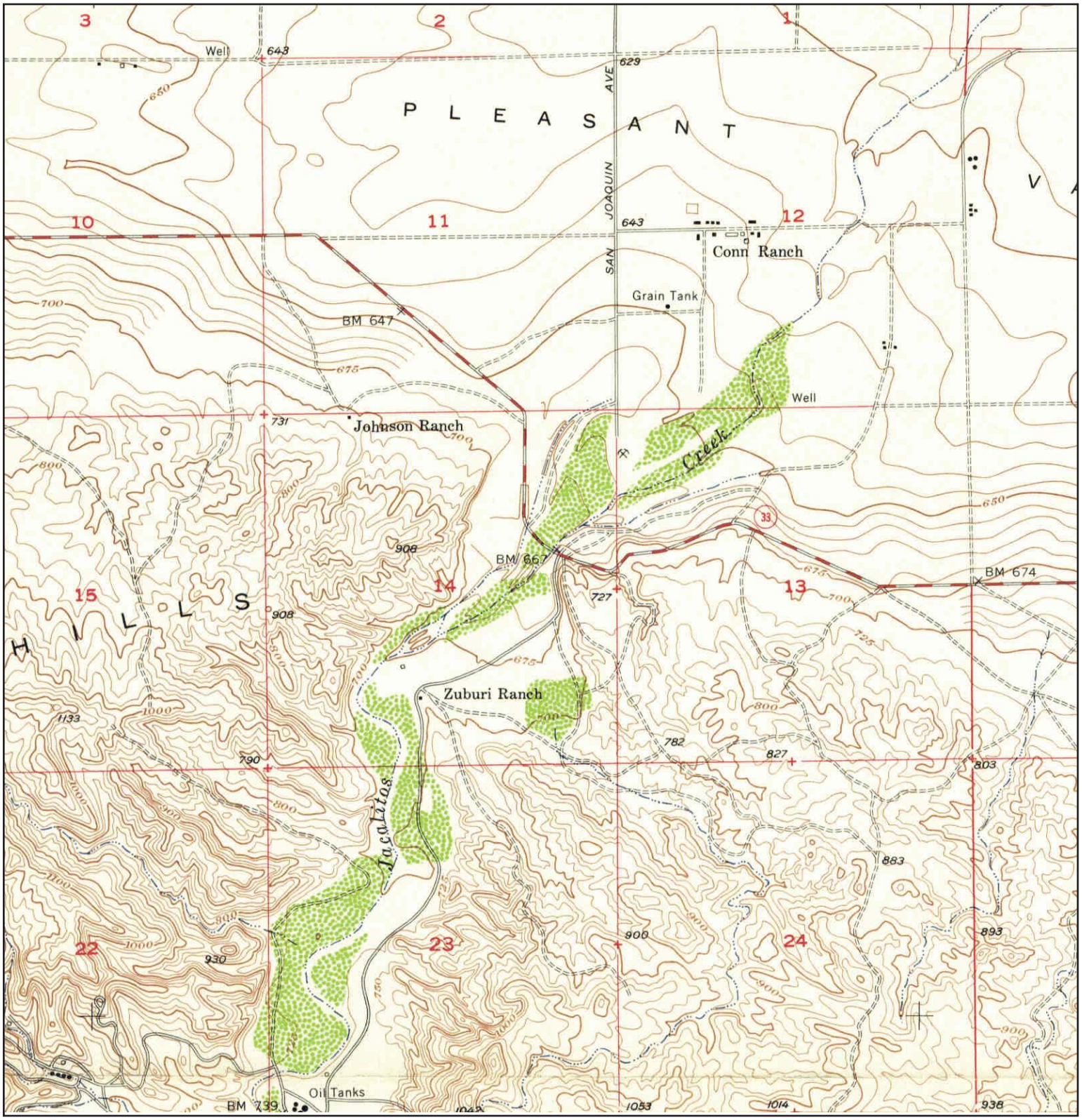

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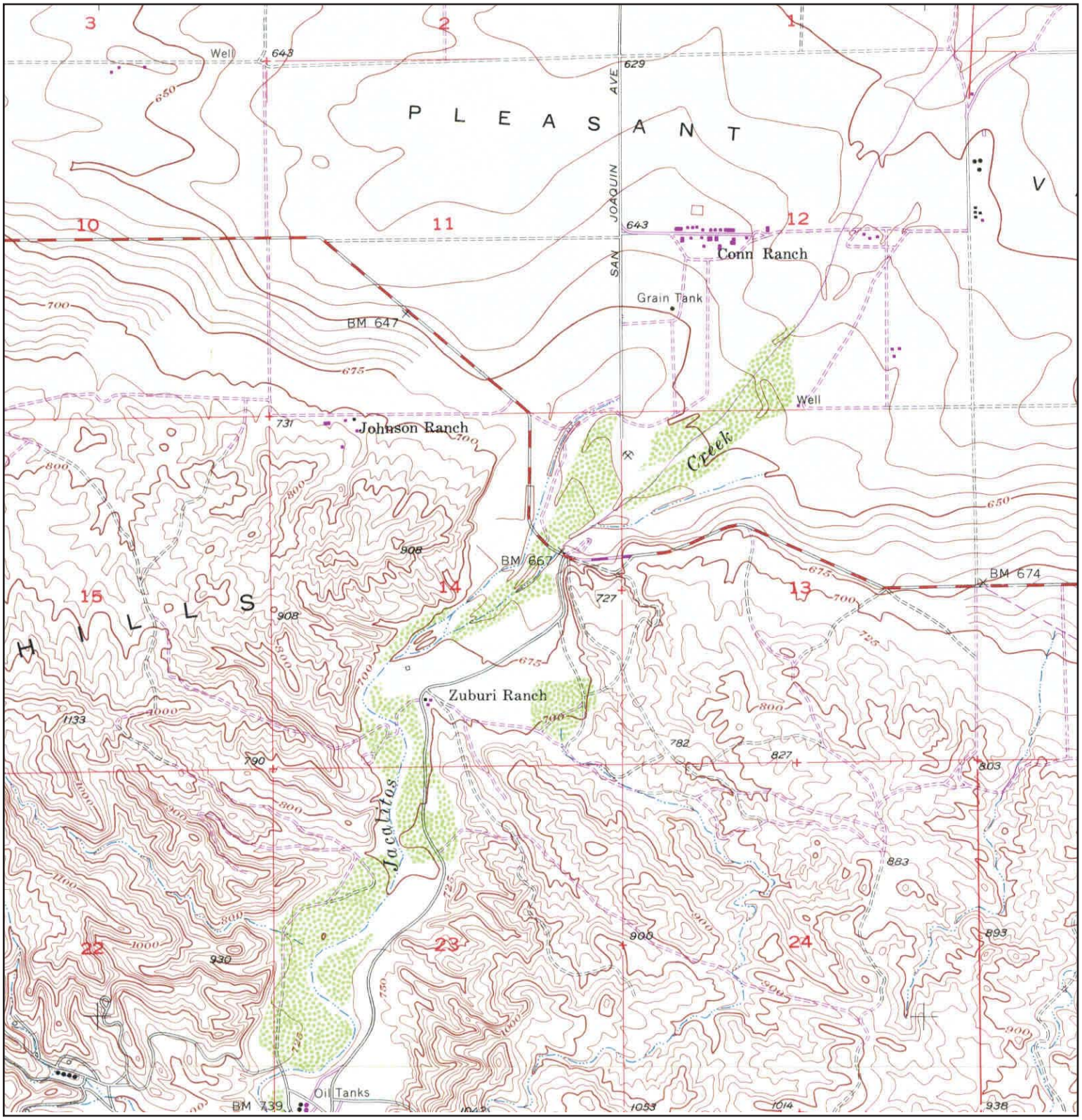

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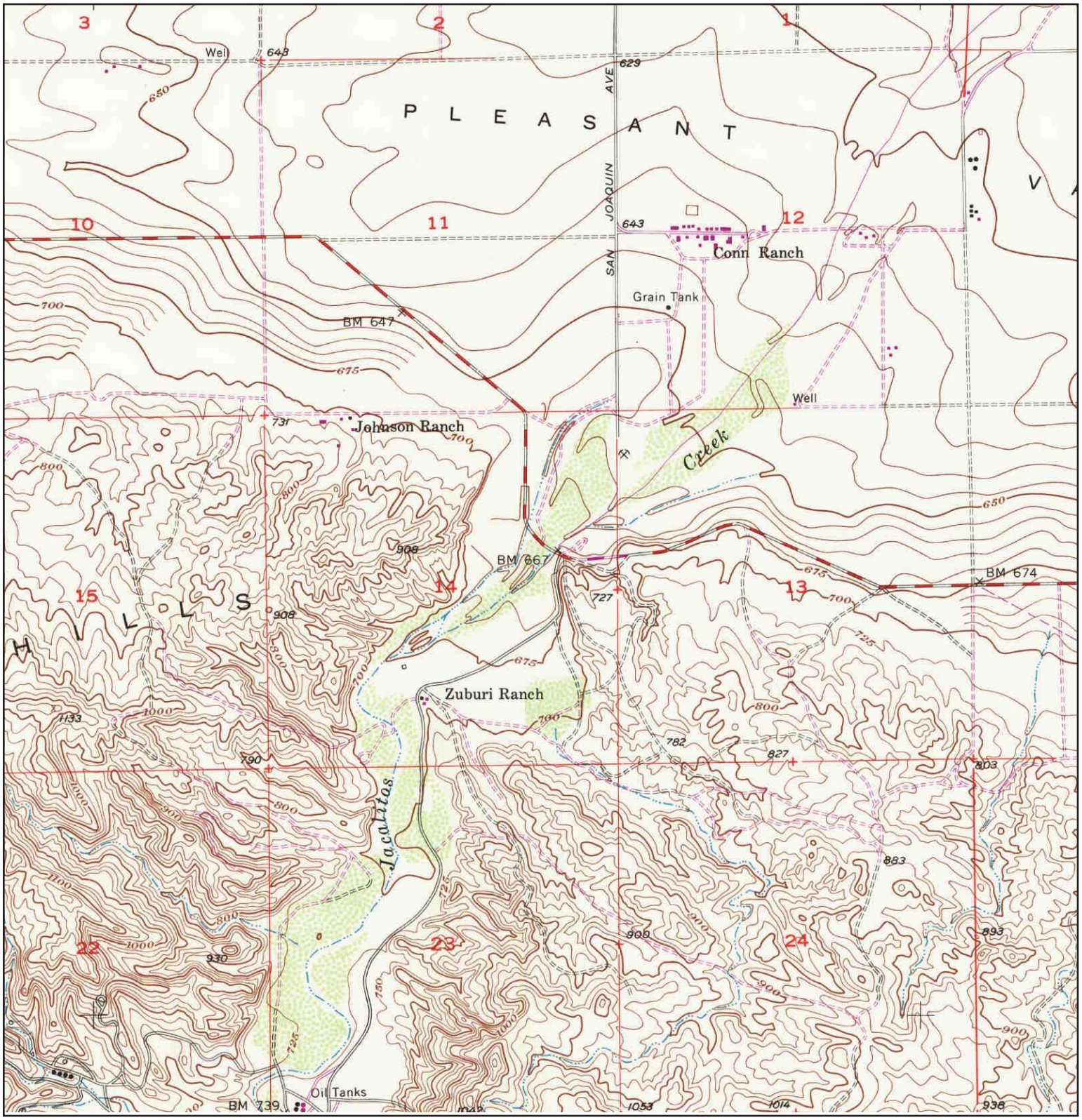
Historical Topographic Map



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Jacalitos Creek Bridge
Jacalitos Creek Bridge
Coalinga, CA 93210

Inquiry Number: 4327338.9
June 17, 2015

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Date EDR Searched Historical Sources:

Aerial Photography June 17, 2015

Target Property:

Jacalitos Creek Bridge

Coalinga, CA 93210

Year	Scale	Details	Source
1937	Aerial Photograph. Scale: 1"=500'	Flight Year: 1937	USGS
1940	Aerial Photograph. Scale: 1"=500'	Flight Year: 1940	USGS
1950	Aerial Photograph. Scale: 1"=500'	Flight Year: 1950	USGS
1957	Aerial Photograph. Scale: 1"=500'	Flight Year: 1957 Best Copy Available from original source	Cartwright
1965	Aerial Photograph. Scale: 1"=500'	Flight Year: 1965	Cartwright
1970	Aerial Photograph. Scale: 1"=500'	Flight Year: 1970	Cartwright
1981	Aerial Photograph. Scale: 1"=500'	Flight Year: 1981	USGS
1989	Aerial Photograph. Scale: 1"=500'	Flight Year: 1989	USGS
1994	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1994	USGS/DOQQ
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2006	Aerial Photograph. Scale: 1"=500'	Flight Year: 2006	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP

INQUIRY #: 4327338.9
YEAR: 1937
= 500'
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EDR

INQUIRY #: 4327338.9

YEAR: 1940

= 500'

N

EDR

INQUIRY #: 4327338.9
YEAR: 1950
= 500'
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EDR

INQUIRY #: 4327338.9

YEAR: 1957

= 500'

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EDR

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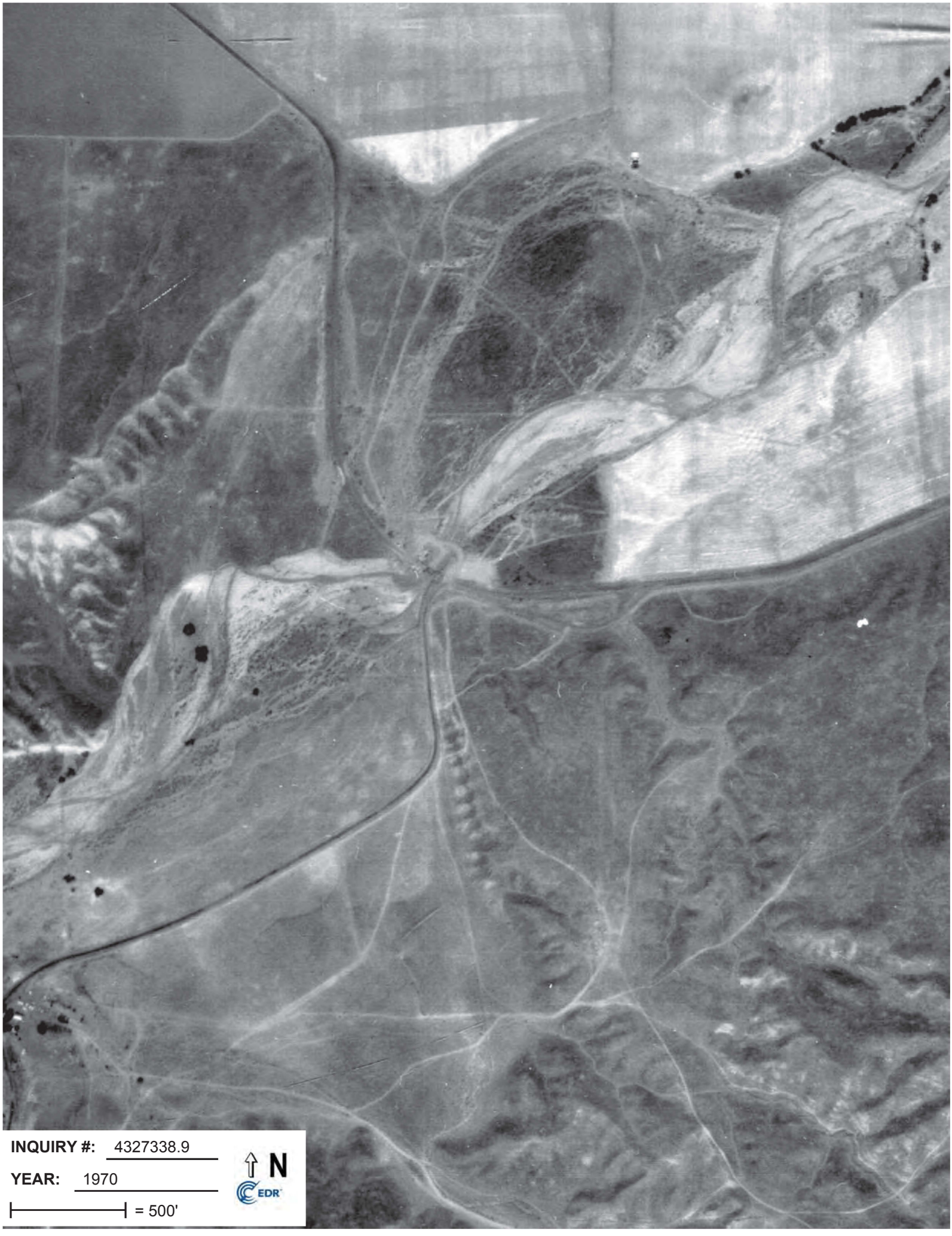

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= 500'

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EDR

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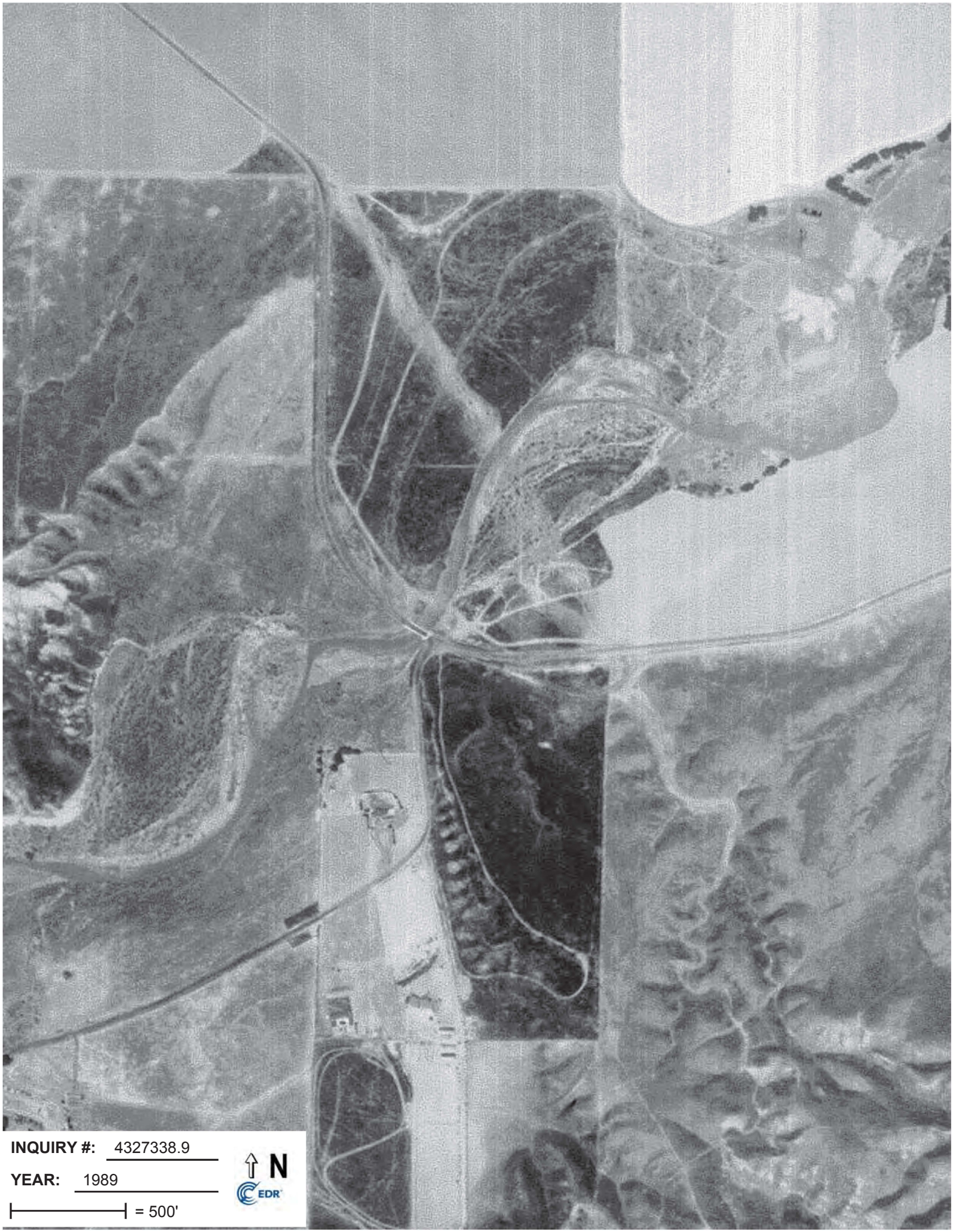
EDR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EDR

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YEAR: 1994

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EDR

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INQUIRY #: 4327338.9
YEAR: 2012
= 500'
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EDR

Jacalitos Creek Bridge
Jacalitos Creek Bridge
Coalinga, CA 93210

Inquiry Number: 4327338.2s
June 16, 2015

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

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with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

JACALITOS CREEK BRIDGE
COALINGA, CA 93210

COORDINATES

Latitude (North):	36.1020000 - 36° 6' 7.20''
Longitude (West):	120.3108000 - 120° 18' 38.88''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	742091.9
UTM Y (Meters):	3998410.0
Elevation:	669 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	36120-A3 KREYENHAGEN HILLS, CA
Most Recent Revision:	1978

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120622
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
JACALITOS CREEK BRIDGE
COALINGA, CA 93210

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

CERCLIS ---------- Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ---------- Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ---------- CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

LUCIS ---------- Land Use Control Information System

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ---------- State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR ---------- EnviroStor Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Information System

State and tribal leaking storage tank lists

LUST ---------- Geotracker's Leaking Underground Fuel Tank Report
SLIC ---------- Statewide SLIC Cases
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST ---------- Active UST Facilities
AST ---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land
FEMA UST ---------- Underground Storage Tank Listing

State and tribal voluntary cleanup sites

INDIAN VCP ---------- Voluntary Cleanup Priority Listing
VCP ---------- Voluntary Cleanup Program Properties

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---------- Open Dump Inventory
SWRCY ---------- Recycler Database
HAULERS ---------- Registered Waste Tire Haulers Listing
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
WMUDS/SWAT ---------- Waste Management Unit Database

Local Lists of Hazardous waste / Contaminated Sites

US CDL ---------- Clandestine Drug Labs

HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
Toxic Pits ---- Toxic Pits Cleanup Act Sites
CDL ---- Clandestine Drug Labs
US HIST CDL ---- National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

CA FID UST ---- Facility Inventory Database
HIST UST ---- Hazardous Substance Storage Container Database
SWEEPS UST ---- SWEEPS UST Listing

Local Land Records

LIENS 2 ---- CERCLA Lien Information
LIENS ---- Environmental Liens Listing
DEED ---- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
CHMIRS ---- California Hazardous Material Incident Report System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---- RCRA - Non Generators / No Longer Regulated
DOT OPS ---- Incident and Accident Data
DOD ---- Department of Defense Sites
FUDS ---- Formerly Used Defense Sites
CONSENT ---- Superfund (CERCLA) Consent Decrees
ROD ---- Records Of Decision
UMTRA ---- Uranium Mill Tailings Sites
US MINES ---- Mines Master Index File
TRIS ---- Toxic Chemical Release Inventory System
TSCA ---- Toxic Substances Control Act
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
SSTS ---- Section 7 Tracking Systems
ICIS ---- Integrated Compliance Information System
PADS ---- PCB Activity Database System
MLTS ---- Material Licensing Tracking System
RADINFO ---- Radiation Information Database
FINDS ---- Facility Index System/Facility Registry System
RAATS ---- RCRA Administrative Action Tracking System
RMP ---- Risk Management Plans
CA BOND EXP. PLAN ---- Bond Expenditure Plan
NPDES ---- NPDES Permits Listing
UIC ---- UIC Listing
Cortese ---- "Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE ---- Hazardous Waste & Substance Site List
CUPA Listings ---- CUPA Resources List

Notify 65	Proposition 65 Records
DRYCLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
ENF	Enforcement Action Listing
HAZNET	Facility and Manifest Data
EMI	Emissions Inventory Data
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
WDS	Waste Discharge System
Financial Assurance	Financial Assurance Information Listing
PROC	Certified Processors Database
HWT	Registered Hazardous Waste Transporter Database
HWP	EnviroStor Permitted Facilities Listing
MWMP	Medical Waste Management Program Listing
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
EPA WATCH LIST	EPA WATCH LIST
US FIN ASSUR	Financial Assurance Information
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
COAL ASH DOE	Steam-Electric Plant Operation Data
2020 COR ACTION	2020 Corrective Action Program List
PRP	Potentially Responsible Parties

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat	EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners	EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST	Recovered Government Archive Leaking Underground Storage Tank
RGA LF	Recovered Government Archive Solid Waste Facilities List

SURROUNDING SITES: SEARCH RESULTS

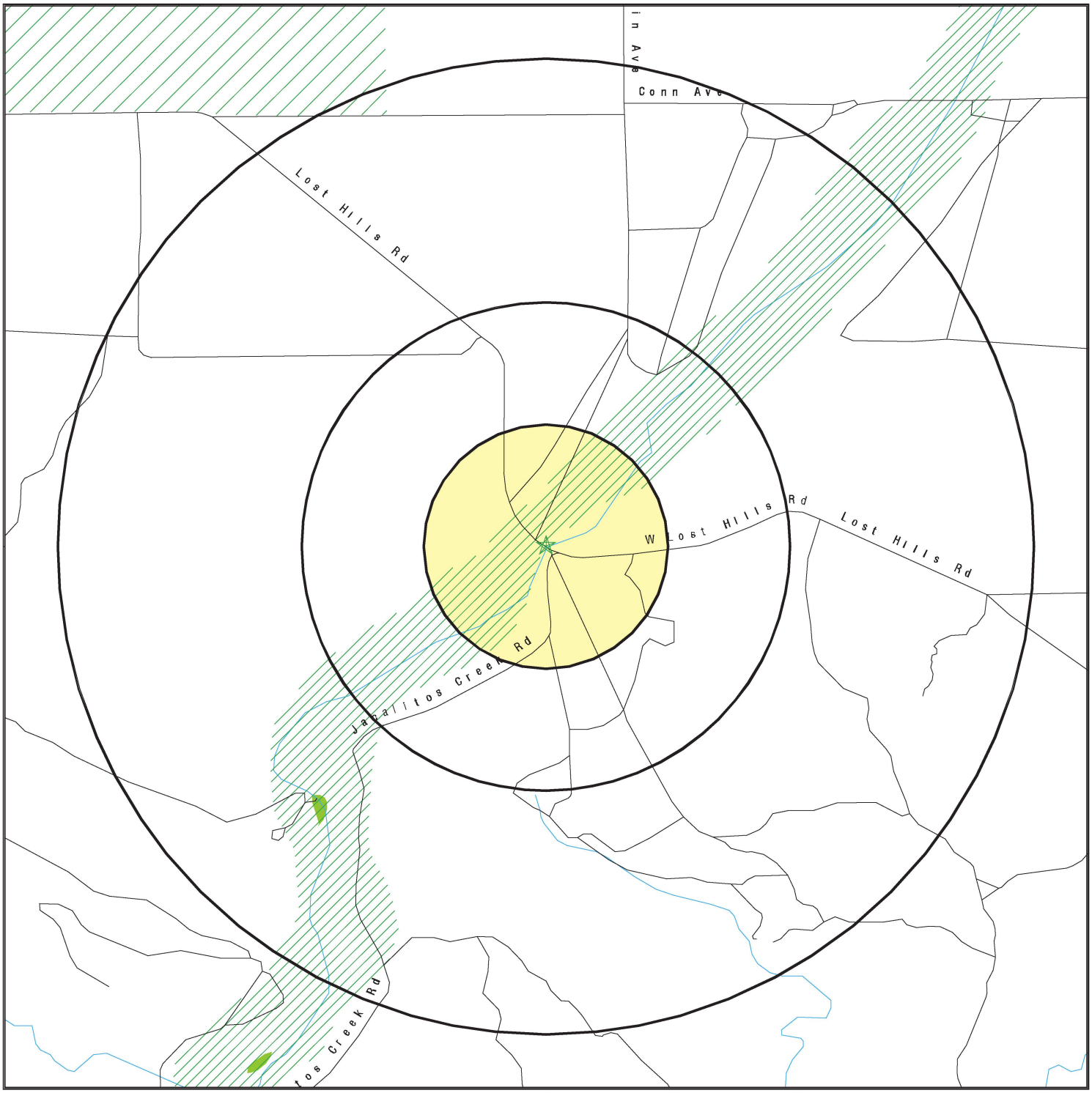
Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 4327338.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Jacalitos Creek Bridge ADDRESS: Jacalitos Creek Bridge Coalinga CA 93210 LAT/LONG: 36.102 / 120.3108	CLIENT: Haro Environmental, Inc. CONTACT: Elliot Haro INQUIRY #: 4327338.2s DATE: June 16, 2015 12:17 pm

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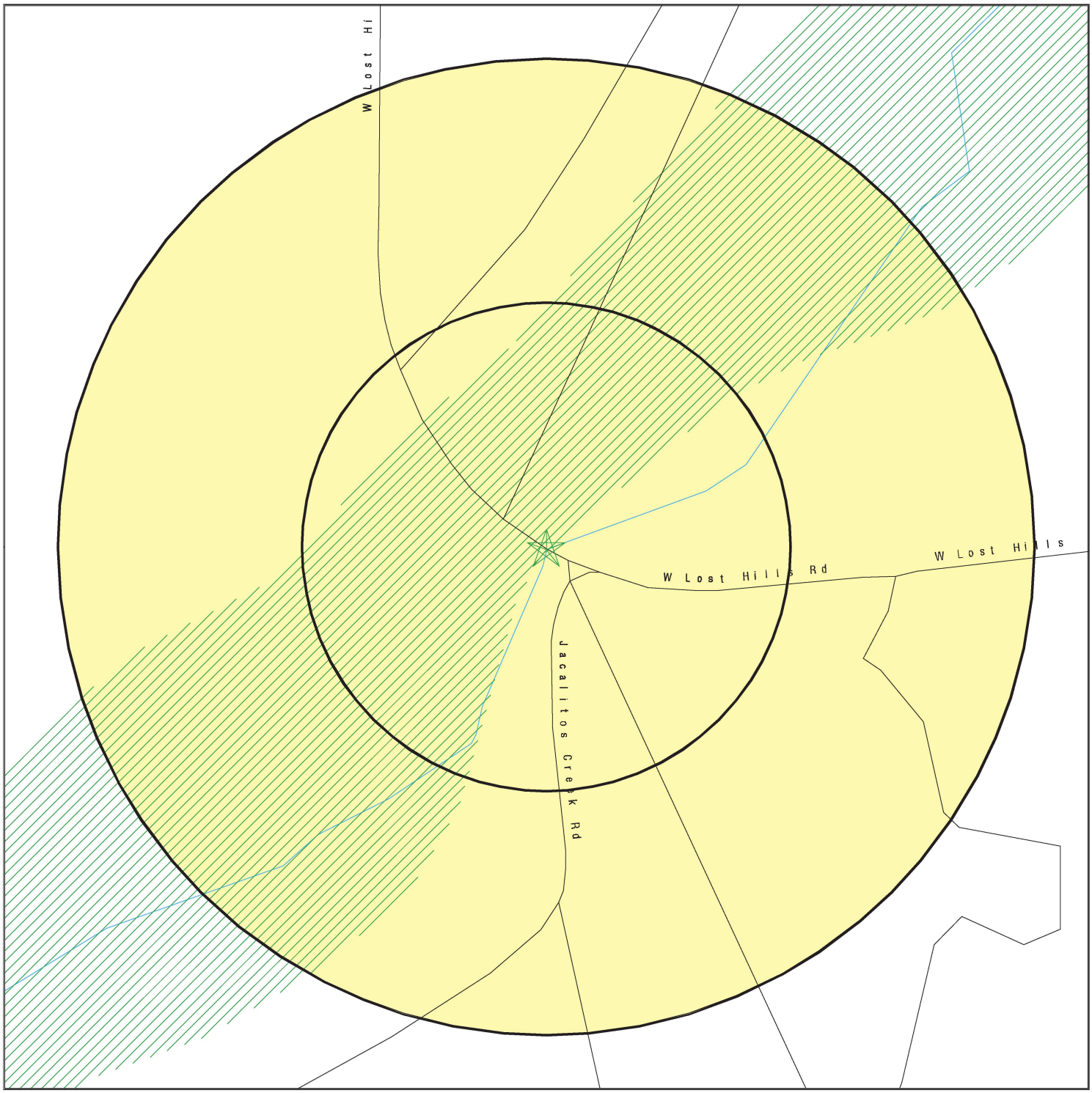
DETAIL MAP - 4327338.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Jacalitos Creek Bridge ADDRESS: Jacalitos Creek Bridge Coalinga CA 93210 LAT/LONG: 36.102 / 120.3108	CLIENT: Haro Environmental, Inc. CONTACT: Elliot Haro INQUIRY #: 4327338.2s DATE: June 16, 2015 12:18 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SLIC	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
SWEEPS UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
LIENS	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LUST	TP		NR	NR	NR	NR	NR	0
RGA LF	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	0	0	0	0	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/16/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/16/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/16/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 63

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 05/04/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 05/14/2015
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 05/04/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 05/14/2015
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/18/2015
Date Data Arrived at EDR: 05/20/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 16

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 184

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/03/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 01/30/2015
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 32

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Semi-Annually

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/08/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/10/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 31

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 01/28/2015
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 42

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/26/2015
Number of Days to Update: 8

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 04/13/2015
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 01/27/2014
Number of Days to Update: 271

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/28/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 01/30/2015
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 36

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/29/2015
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 42

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27
Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/29/2014
Date Data Arrived at EDR: 10/01/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 36
Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 04/02/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 05/04/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 05/14/2015
Number of Days to Update: 9
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/23/2015
Date Data Arrived at EDR: 03/24/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 70
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/24/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137
Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/23/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39
Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/26/2015
Number of Days to Update: 8
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/28/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 8
Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 05/01/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30
Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 05/04/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 05/14/2015
Number of Days to Update: 9
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8
Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 06/09/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 04/14/2015
Date Data Arrived at EDR: 04/29/2015
Date Made Active in Reports: 05/21/2015
Number of Days to Update: 22

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 06/06/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 12/30/2014
Date Data Arrived at EDR: 12/31/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/03/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 110

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 01/29/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/27/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/10/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 04/09/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/17/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/31/2015
Date Data Arrived at EDR: 04/09/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 63

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 06/04/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/07/2015
Date Data Arrived at EDR: 04/09/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/09/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/18/2015
Date Data Arrived at EDR: 02/27/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 26

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 05/18/2015
Date Data Arrived at EDR: 05/20/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 22

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 11/19/2014
Date Data Arrived at EDR: 12/15/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 45
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/20/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Varies

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 04/10/2015
Number of Days to Update: 10
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 02/18/2015
Date Data Arrived at EDR: 02/20/2015
Date Made Active in Reports: 03/12/2015
Number of Days to Update: 20
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Annually

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/01/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 12

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/19/2014
Number of Days to Update: 35

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/17/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 03/25/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 34

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/27/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/18/2015
Date Data Arrived at EDR: 05/22/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 14

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 05/01/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/01/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 12

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

EPA WATCH LIST: EPA WATCH LIST
EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/07/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

FEDLAND: Federal and Indian Lands
Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: N/A

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64
Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/10/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36
Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

2020 COR ACTION: 2020 Corrective Action Program List
The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6
Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

US FIN ASSUR: Financial Assurance Information
All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/28/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 8

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/28/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 01/16/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 06/09/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 04/13/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/24/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 7

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 11/20/2014
Date Data Arrived at EDR: 11/24/2014
Date Made Active in Reports: 01/07/2015
Number of Days to Update: 44

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 04/27/2015
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 04/17/2015
Date Data Arrived at EDR: 04/21/2015
Date Made Active in Reports: 05/07/2015
Number of Days to Update: 16

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/11/2014
Date Data Arrived at EDR: 06/13/2014
Date Made Active in Reports: 07/07/2014
Number of Days to Update: 24

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 05/19/2015
Date Data Arrived at EDR: 05/22/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 14

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 7

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/31/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 04/06/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 04/27/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 15

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 07/22/2014
Date Data Arrived at EDR: 11/12/2014
Date Made Active in Reports: 12/19/2014
Number of Days to Update: 37

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/28/2015
Date Made Active in Reports: 06/15/2015
Number of Days to Update: 18

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 05/05/2015
Date Data Arrived at EDR: 05/07/2015
Date Made Active in Reports: 05/20/2015
Number of Days to Update: 13

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/24/2014
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 33

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/20/2015
Date Data Arrived at EDR: 04/20/2015
Date Made Active in Reports: 05/07/2015
Number of Days to Update: 17

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/20/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/15/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 40

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 03/06/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/03/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 16

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 04/14/2015
Date Data Arrived at EDR: 04/23/2015
Date Made Active in Reports: 05/11/2015
Number of Days to Update: 18

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/15/2015
Number of Days to Update: 17

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 10/08/2014
Date Data Arrived at EDR: 10/22/2014
Date Made Active in Reports: 12/15/2014
Number of Days to Update: 54

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 05/22/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 10

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 02/27/2015
Date Data Arrived at EDR: 03/06/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 4

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 03/19/2015
Date Data Arrived at EDR: 03/20/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 11

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/12/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 18

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 24

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/08/2015
Number of Days to Update: 27

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 30

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/12/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/12/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 6
Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 06/21/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/28/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 13
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 04/28/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 13
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/02/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 04/16/2015
Number of Days to Update: 8
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/02/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 04/16/2015
Number of Days to Update: 8
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 03/02/2015
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 7

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 05/12/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2014
Date Data Arrived at EDR: 11/21/2014
Date Made Active in Reports: 12/29/2014
Number of Days to Update: 38

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 06/03/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 03/24/2015
Date Data Arrived at EDR: 03/25/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 6
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/22/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/10/2015
Number of Days to Update: 15
Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 04/13/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/15/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/17/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 7
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28
Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/25/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 6

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/07/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/08/2015
Number of Days to Update: 27

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 05/07/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 05/22/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/08/2015
Number of Days to Update: 13

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 5

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/20/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 11

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 03/31/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/10/2015
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/01/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 05/05/2015
Date Data Arrived at EDR: 05/07/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 6

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 04/27/2015
Date Data Arrived at EDR: 05/22/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 14

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/02/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 04/27/2015
Date Data Arrived at EDR: 04/29/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 14

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/27/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/26/2015
Number of Days to Update: 8

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/01/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 12

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 05/18/2015
Date Data Arrived at EDR: 05/19/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 17

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 04/29/2015
Date Made Active in Reports: 05/29/2015
Number of Days to Update: 30

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/06/2015
Date Made Active in Reports: 05/20/2015
Number of Days to Update: 14

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/21/2014
Date Made Active in Reports: 08/25/2014
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 08/13/2014
Number of Days to Update: 29

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 04/07/2015
Number of Days to Update: 19

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/11/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

JACALITOS CREEK BRIDGE
JACALITOS CREEK BRIDGE
COALINGA, CA 93210

TARGET PROPERTY COORDINATES

Latitude (North):	36.102 - 36° 6' 7.20''
Longitude (West):	120.3108 - 120° 18' 38.88''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	742091.9
UTM Y (Meters):	3998410.0
Elevation:	669 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	36120-A3 KREYENHAGEN HILLS, CA
Most Recent Revision:	1978

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

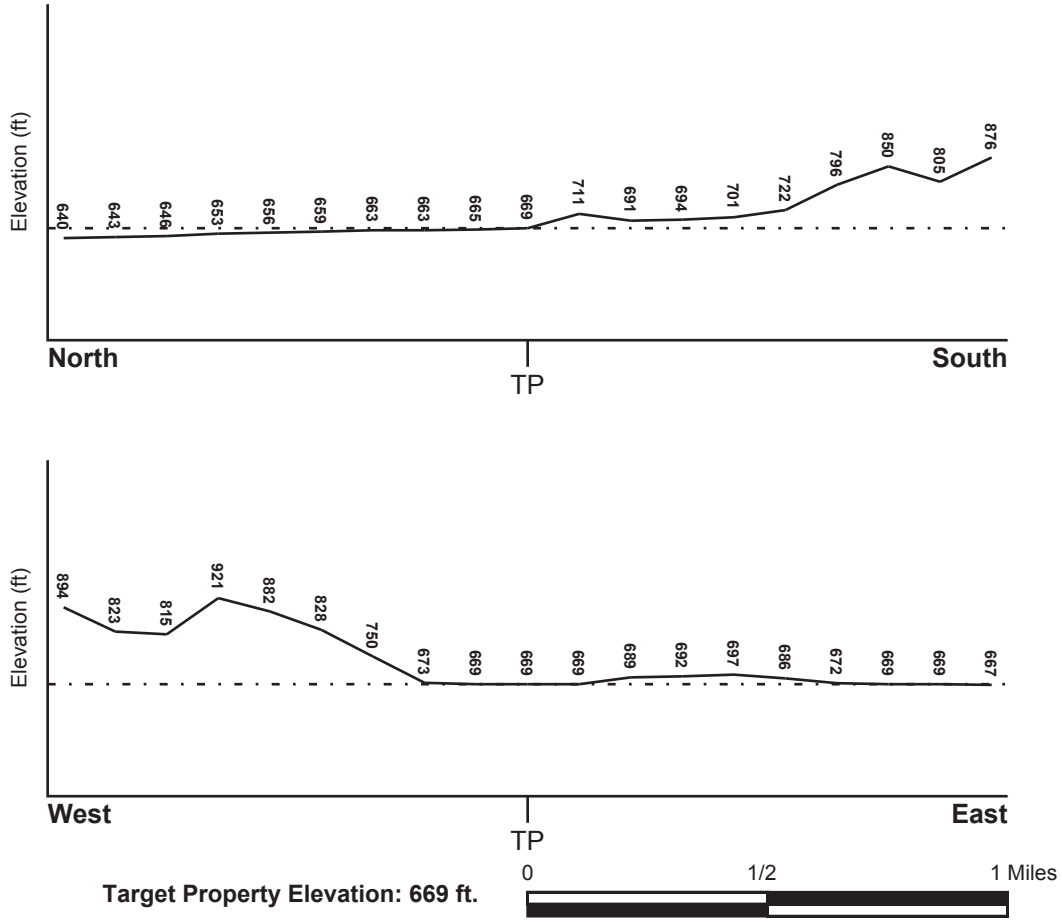
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
FRESNO, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06019C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
KREYENHAGEN HILLS	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

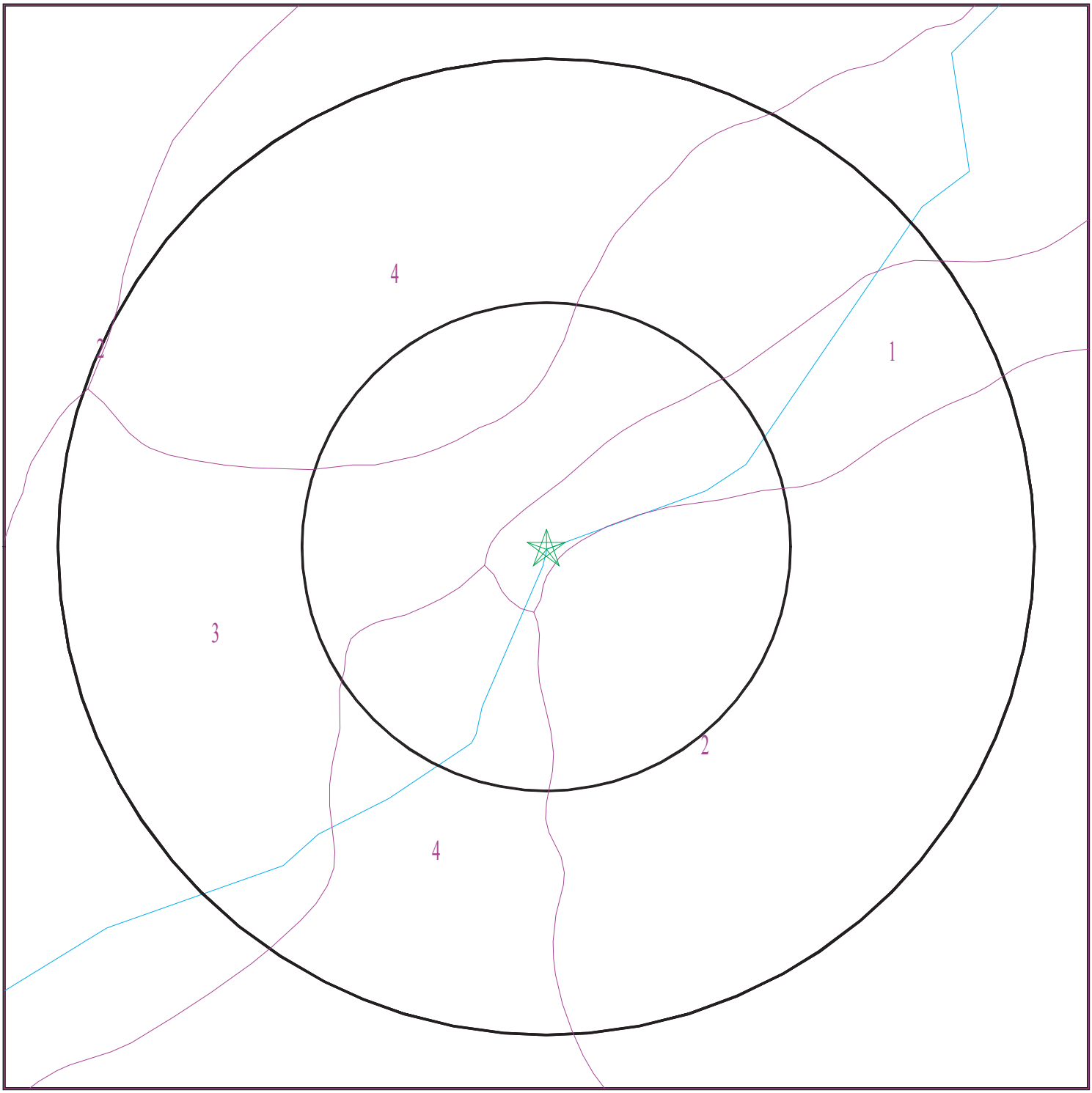
Era:	Cenozoic
System:	Tertiary
Series:	Pliocene
Code:	Tpc *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Continental Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4327338.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Jacalitos Creek Bridge	CLIENT:	Haro Environmental, Inc.
ADDRESS:	Jacalitos Creek Bridge Coalinga CA 93210	CONTACT:	Elliot Haro
LAT/LONG:	36.102 / 120.3108	INQUIRY #:	4327338.2s
		DATE:	June 16, 2015 12:19 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: EXCELSIOR

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4
2	7 inches	22 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4
3	22 inches	72 inches	stratified sandy loam to silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.9

Soil Map ID: 2

Soil Component Name: MILHAM

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 42 Min: 14	Max: 7.8 Min: 7.4
2	5 inches	16 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 7.8 Min: 7.4
3	16 inches	31 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4
4	31 inches	59 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.9

Soil Map ID: 3

Soil Component Name: EXCELSIOR

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4
2	7 inches	22 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4
3	22 inches	53 inches	stratified loamy sand to silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.9
4	53 inches	72 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 4

Soil Component Name: EXCELSIOR

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4
2	7 inches	22 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4
3	22 inches	53 inches	stratified loamy sand to silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.9
4	53 inches	72 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000169948	1/8 - 1/4 Mile South

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

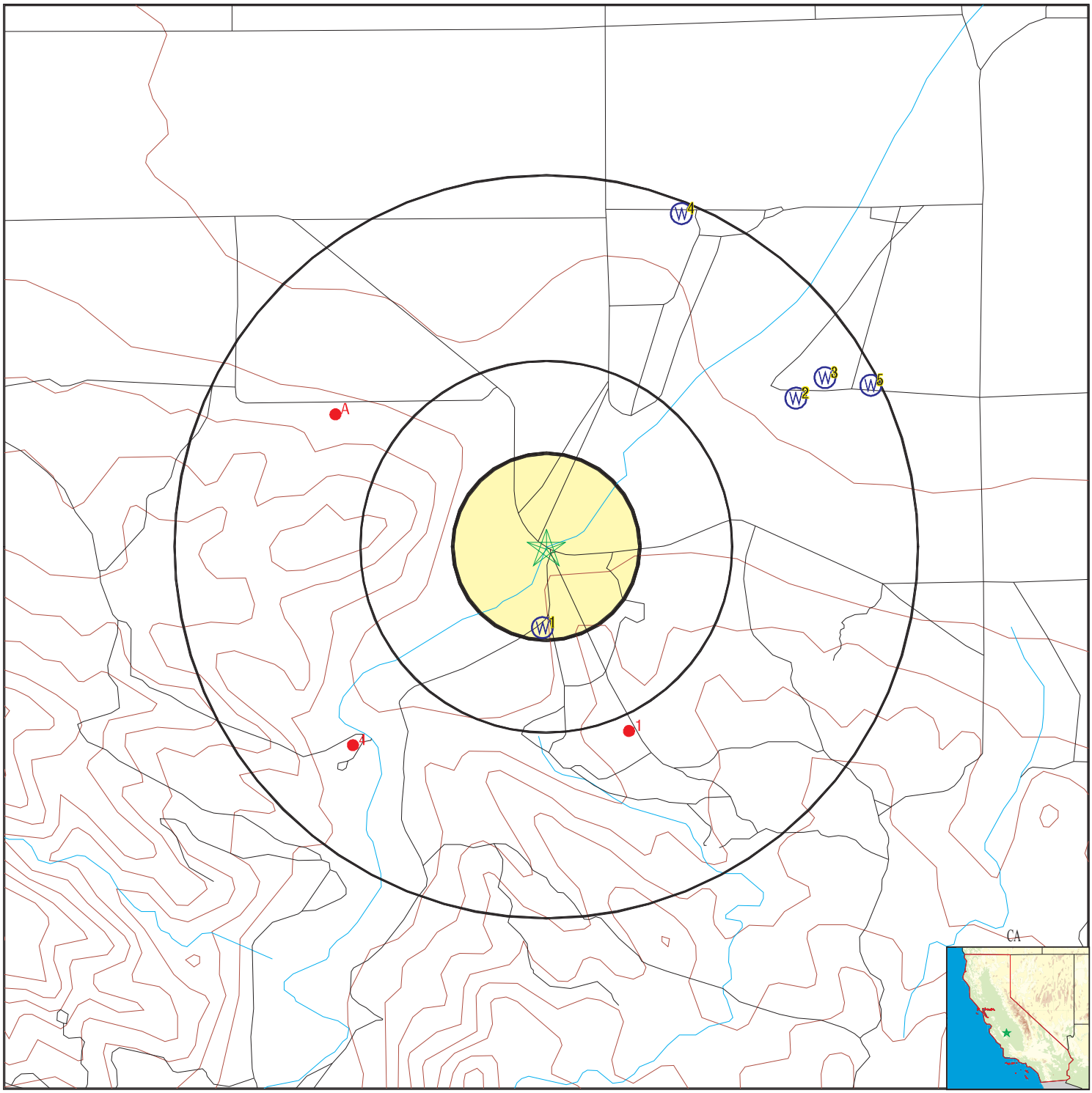
MAP ID	WELL ID	LOCATION FROM TP
2	CADW50000018397	1/2 - 1 Mile ENE
3	CADW50000018411	1/2 - 1 Mile ENE
4	CADW50000018472	1/2 - 1 Mile NNE
5	CADW50000018406	1/2 - 1 Mile ENE

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG11000274583	1/2 - 1 Mile SSE
A2	CAOG11000268636	1/2 - 1 Mile WNW
A3	CAOG11000268637	1/2 - 1 Mile WNW
4	CAOG11000268639	1/2 - 1 Mile SW

PHYSICAL SETTING SOURCE MAP - 4327338.2s



0 1/4 1/2 1 Miles

N

- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME: Jacalitos Creek Bridge	CLIENT: Haro Environmental, Inc.
ADDRESS: Jacalitos Creek Bridge Coalinga CA 93210	CONTACT: Elliot Haro
LAT/LONG: 36.102 / 120.3108	INQUIRY #: 4327338.2s DATE: June 16, 2015 12:19 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
South
1/8 - 1/4 Mile
Higher | **FED USGS** | **USGS40000169948**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-360556120183601		
Monloc name:	021S015E14J001M		
Monloc type:	Well		
Monloc desc:	RASA II		
Huc code:	18030011	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	36.0988451
Longitude:	-120.3109799	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	675
Vert measure units:	feet	Vertacc measure val:	2.5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Central Valley aquifer system		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19820324	Welldepth:	150
Welldepth units:	ft	Wellholedepth:	160
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

2
ENE
1/2 - 1 Mile
Lower | **CA WELLS** | **CADW50000018397**

Latitude :	36.1078		
Longitude :	120.2988		
Site code:	361078N1202988W001	Casgem sta:	21S15E12Q002M
Local well:	Not Reported	Casgem s 1:	Unknown
County id:	10		
Basin cd:	5-22.10	Basin desc:	Pleasant Valley
Org unit n:	South Central Region Office	Site id:	CADW50000018397

3
ENE
1/2 - 1 Mile
Lower | **CA WELLS** | **CADW50000018411**

Latitude :	36.1086		
Longitude :	120.2974		
Site code:	361086N1202974W001	Casgem sta:	21S15E12Q003M
Local well:	Not Reported	Casgem s 1:	Unknown
County id:	10		
Basin cd:	5-22.10	Basin desc:	Pleasant Valley
Org unit n:	South Central Region Office	Site id:	CADW50000018411

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
4 **NNE** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADW50000018472**

Latitude :	36.115		
Longitude :	120.3043		
Site code:	361150N1203043W001	Casgem sta:	21S15E12M001M
Local well:	Not Reported	Casgem s 1:	Unknown
County id:	10		
Basin cd:	5-22.10	Basin desc:	Pleasant Valley
Org unit n:	South Central Region Office	Site id:	CADW50000018472

	Database	EDR ID Number
5 **ENE** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADW50000018406**

Latitude :	36.1083		
Longitude :	120.2952		
Site code:	361083N1202952W001	Casgem sta:	21S15E12Q001M
Local well:	Not Reported	Casgem s 1:	Unknown
County id:	10		
Basin cd:	5-22.10	Basin desc:	Pleasant Valley
Org unit n:	South Central Region Office	Site id:	CADW50000018406

Map ID
Direction
Distance

Database EDR ID Number

1
SSE
1/2 - 1 Mile

OIL_GAS **CAOG11000274583**

District nun:	5	Api number:	01923716
Blm well:	N	Redrill can:	Not Reported
Dryhole:	Y	Well status:	P
Operator name:	Anschutz Expl. Corp.		
County name:	Fresno	Fieldname:	Any Field
Area name:	Any Area	Section:	13
Township:	21S	Range:	15E
Base meridian:	MD	Elevation:	Not Reported
Locationde:	Fr SW cor 430’ Nly 330’ Ely		
Gissourcec:	hud		
Comments:	Not Reported		
Leasename:	Chevron Fee	Wellnumber:	13-13
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	23-MAY-96
Welldeptha:	6910		
Redrillfoo:	0		
Abandonedd:	20-SEP-96	Completion:	30-DEC-99
Directiona:	Unknown	Gissymbol:	PDH
Site id:	CAOG11000274583		

A2
WNW
1/2 - 1 Mile

OIL_GAS **CAOG11000268636**

District nun:	5	Api number:	01906337
Blm well:	N	Redrill can:	Not Reported
Dryhole:	Y	Well status:	P
Operator name:	Blair Oil Co.		
County name:	Fresno	Fieldname:	Any Field
Area name:	Any Area	Section:	14
Township:	21S	Range:	15E
Base meridian:	MD	Elevation:	Not Reported
Locationde:	W/2 of NW/2		
Gissourcec:	hud		
Comments:	Not Reported		
Leasename:	Not Reported	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-DEC-99
Welldeptha:	2480		
Redrillfoo:	0		
Abandonedd:	30-DEC-99	Completion:	30-DEC-99
Directiona:	Unknown	Gissymbol:	PDH
Site id:	CAOG11000268636		

A3
WNW
1/2 - 1 Mile

OIL_GAS **CAOG11000268637**

District nun:	5	Api number:	01906338
Blm well:	N	Redrill can:	Not Reported
Dryhole:	Y	Well status:	P
Operator name:	Blair Oil Co.		
County name:	Fresno	Fieldname:	Any Field
Area name:	Any Area	Section:	14
Township:	21S	Range:	15E
Base meridian:	MD	Elevation:	Not Reported
Locationde:	Fr NW cor 1400B1 Ely 175B1 Sly		
Gissourcec:	hud		
Comments:	Not Reported		
Leasename:	Not Reported	Wellnumber:	2
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	06-JUL-10
Welldeptha:	4626		
Redrillfoo:	0		
Abandonedd:	24-MAY-18	Completion:	30-DEC-99
Directiona:	Unknown	Gissymbol:	PDH
Site id:	CAOG11000268637		

4
SW **OIL_GAS** **CAOG11000268639**
1/2 - 1 Mile

District nun:	5	Api number:	01906340
Blm well:	N	Redrill can:	Not Reported
Dryhole:	Y	Well status:	P
Operator name:	Jacalitos Petroleum Co.		
County name:	Fresno	Fieldname:	Any Field
Area name:	Any Area	Section:	14
Township:	21S	Range:	15E
Base meridian:	MD	Elevation:	Not Reported
Locationde:	Fr SW cor SE/4 SW/4 330 N 330 E		
Gissourcec:	hud		
Comments:	Not Reported		
Leasename:	Associated	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	22-OCT-37
Welldeptha:	7266		
Redrillfoo:	0		
Abandonedd:	23-SEP-38	Completion:	30-DEC-99
Directiona:	Unknown	Gissymbol:	PDH
Site id:	CAOG11000268639		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
93210	13	0

Federal EPA Radon Zone for FRESNO County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 93210

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.100 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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Jacalitos Creek Bridge
Jacalitos Creek Bridge
Coalinga, CA 93210

Inquiry Number: 4327338.5
June 18, 2015

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2013	☑	☑	Cole Information Services
2008	☑	☑	Cole Information Services
2003	☑	☑	Cole Information Services
1999	☑	☑	Cole Information Services
1995	☐	☑	Cole Information Services
1992	☐	☑	Cole Information Services
1990	☑	☑	Haines Criss-Cross Directory
1985	☑	☑	Haines Criss-Cross Directory
1980	☐	☐	Haines Criss-Cross Directory
1975	☐	☐	Haines Criss-Cross Directory

RECORD SOURCES

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FINDINGS

TARGET PROPERTY STREET

Jacalitos Creek Bridge
Coalinga, CA 93210

Year	*CD Image*	*Source*	
JACALITOS CREEK RD			
2013	pg A1	Cole Information Services	
2008	pg A3	Cole Information Services	
2003	pg A5	Cole Information Services	
1999	pg A7	Cole Information Services	
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source
1990	pg A11	Haines Criss-Cross Directory	
1985	pg A13	Haines Criss-Cross Directory	
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
LOST HILLS RD			
2013	pg. A2	Cole Information Services	
2008	pg. A4	Cole Information Services	
2003	pg. A6	Cole Information Services	
1999	pg. A8	Cole Information Services	
1995	pg. A9	Cole Information Services	
1992	pg. A10	Cole Information Services	
1990	pg. A12	Haines Criss-Cross Directory	
1985	pg. A14	Haines Criss-Cross Directory	
1980	-	Haines Criss-Cross Directory	Target and Adjoining not listed in Source
1975	-	Haines Criss-Cross Directory	Target and Adjoining not listed in Source

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

JACALITOS CREEK RD 2013

43033 CHERI CARLSON
43036 OCCUPANT UNKNOWN
43038 MANUEL RODRIGUEZ
43050 OCCUPANT UNKNOWN

Target Street	Cross Street	Source
-	✓	Cole Information Services

LOST HILLS RD 2013

26250	MICHAEL ADAMS
43345	NOEMI RAMIREZ
44966	RONALD DARTENAY
45315	AVENAL AGGREGATE & ASPHALT
45555	R HEWITSON
45557	RICHAR HEWITSON
46012	ARMANDO LOPEZ
47922	YOLANDA CAMAREA
47930	JUAN VARGAS
47932	OCCUPANT UNKNOWN
47940	OCCUPANT UNKNOWN
47944	OSCAR YANEZ
47948	JORGE CRUZ
47950	OCCUPANT UNKNOWN
47952	OCCUPANT UNKNOWN
47954	OCCUPANT UNKNOWN
47960	SUZANNA MARTINEZ
47972	ALEJANDRO CORTEZ
47984	OCCUPANT UNKNOWN
47986	ERNEST VALENZUELA
47988	OCCUPANT UNKNOWN
47990	JOSE SOTO
47998	MANUEL PEREZ

Target Street	Cross Street	Source
✓	-	Cole Information Services

JACALITOS CREEK RD 2008

43050 BARBARA BENSON

Target Street	Cross Street	Source
-	✓	Cole Information Services

LOST HILLS RD 2008

43345	OCCUPANT UNKNOWN
44966	CRAIG DARTENAY
45315	ACME PAVING CO INC
	AVENAL AGGREGATE & ASPHALT
45555	R HEWITSON
45557	RICHARD HEWITON
46012	ARMANDO LOPEZ
47922	CAMARENA BROTHERS
	RAUL CAMARENA
47930	JUAN VARGAS
47932	RAYMOND ARAGON
47940	OCCUPANT UNKNOWN
47944	JUAN POLIO
47948	JORGE CRUZ
47950	OCCUPANT UNKNOWN
47952	TIM SMITH
47954	JUSTIN HAMPTON
47960	SUZANNA MARTINEZ
47972	CHRIS LONGACRE
47984	ERNEST VALENZUELA
47986	OCCUPANT UNKNOWN
47988	PATRICIA JORDAN
47990	JOSE SOTO
47998	MARIA GARCIA

Target Street	Cross Street	Source
✓	-	Cole Information Services

JACALITOS CREEK RD 2003

43038 JOHNNIE DIAS

Target Street	Cross Street	Source
-	✓	Cole Information Services

LOST HILLS RD 2003

44966	C & K HARVESTING & REPAIR CRAIG DARTENAY
45315	ACME ROCK
45555	OCCUPANT UNKNOWN
45557	DEN HARTOG JOHN
46012	GRACIA TELLO
47922	RAUL CAMERENA
47932	SHAWNA MATHIS
47940	RAUL CAMARENA
47942	JOSE CONTRERAS
47944	OCCUPANT UNKNOWN
47948	NELSON LACROSSE
47952	STEVE MCCRACKEN
47954	OCCUPANT UNKNOWN
47960	PEGGY PENNEY
47986	CHARLES HAZARD
47988	PATRICIA JORDAN
47990	JOSE SOTO
47998	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
✓	-	Cole Information Services

JACALITOS CREEK RD 1999

43036 RANCHO SILVERADO B & B
43050 BARBARA BENSON

Target Street	Cross Street	Source
-	✓	Cole Information Services

LOST HILLS RD 1999

44966	CRAIG DARTENAY
45315	ACME ROCK
45555	R HEWITSON
45557	RICHAR HEWITSON
46005	ARTESIA READY MIX CONCRETE INCORPORATED
46012	ARMANDO LOPEZ
47930	JUAN VARGAS
47944	JUAN POLIO
47948	JORGE CRUZ
47952	SUSAN KEENAN
47972	ALEJANDRO CORTEZ
47984	ERNEST VALENZUELA
47990	JOSE SOTO
47998	MANUEL PEREZ

Target Street	Cross Street	Source
-	✓	Cole Information Services

LOST HILLS RD 1995

46005 ARTESIA READY MIX CONCRETE INC
47986 HAZARD, C

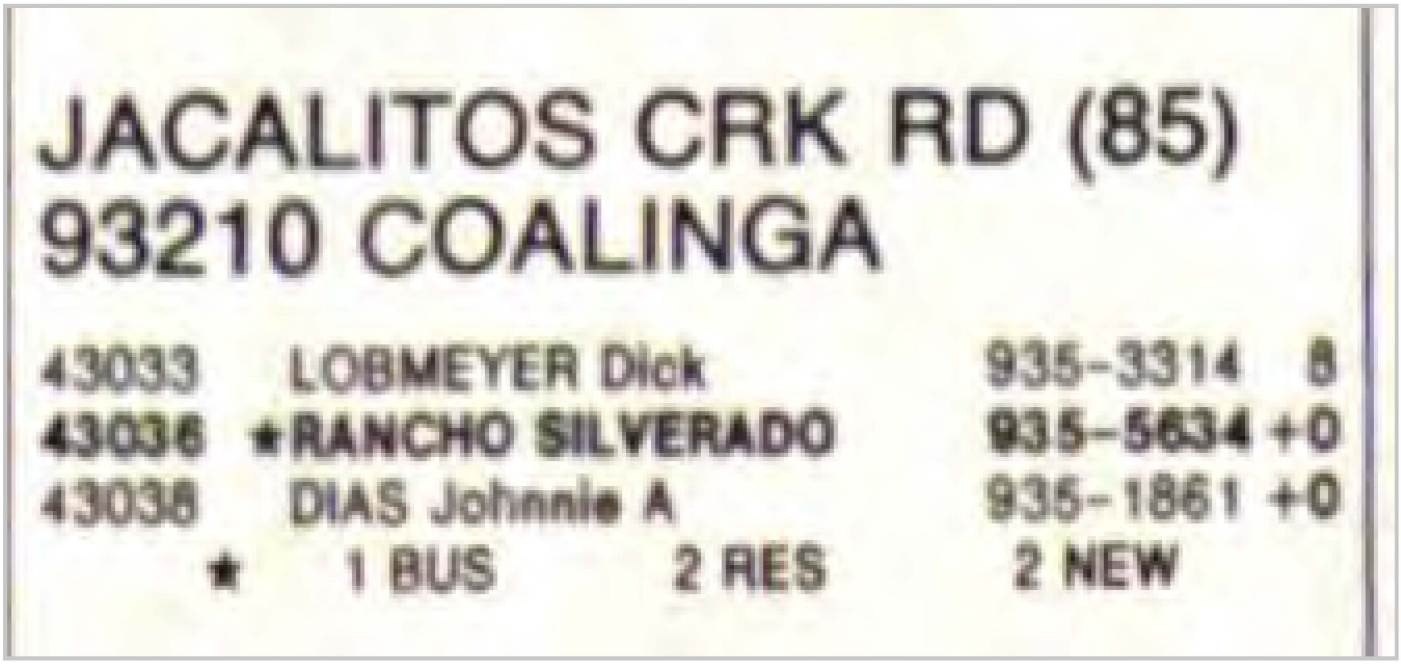
Target Street	Cross Street	Source
-	✓	Cole Information Services

LOST HILLS RD 1992

45315 ACME ROCK
46005 ARTESIA READY MIX

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

JACALITOS CREEK RD 1990

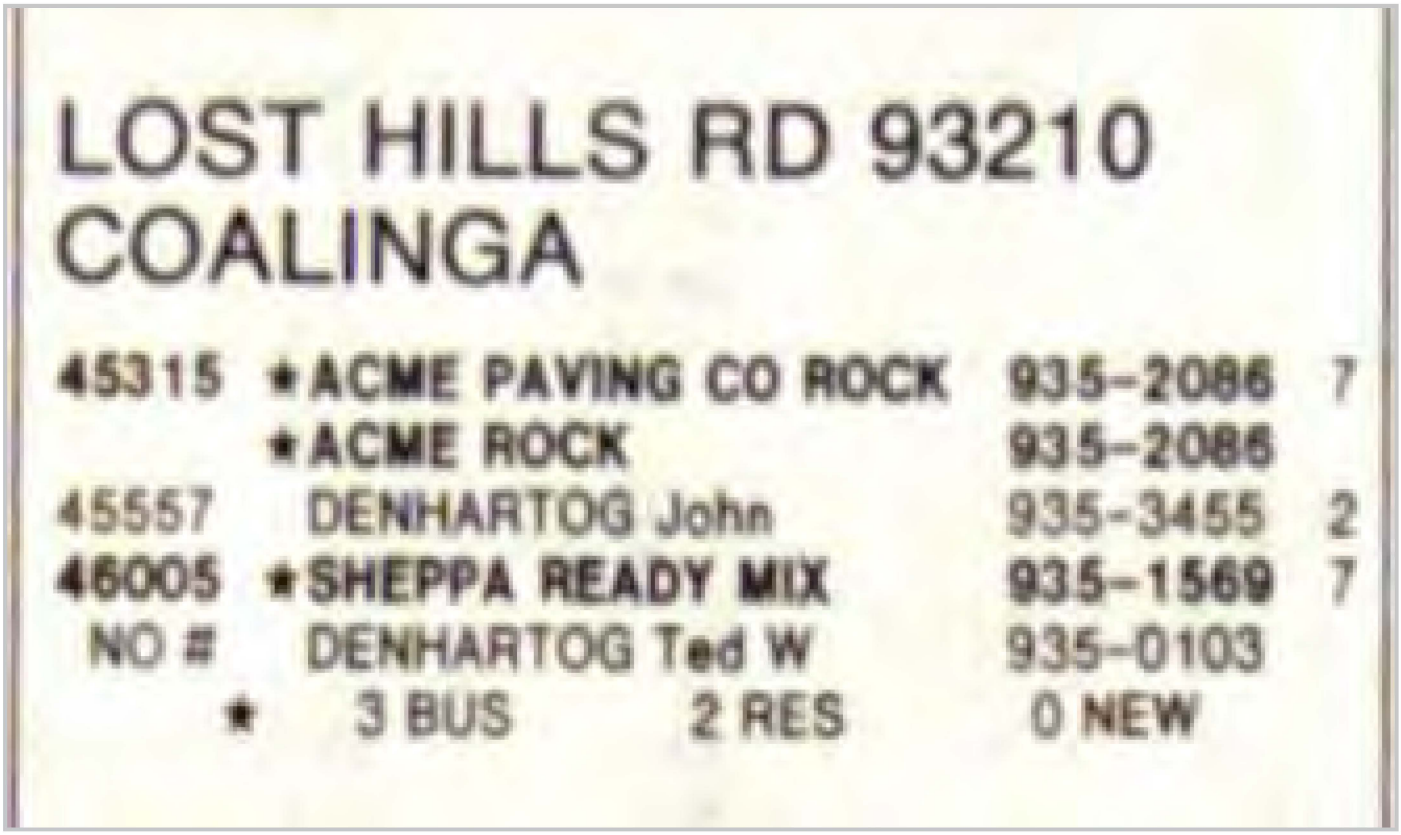


JACALITOS CRK RD (85)
93210 COALINGA

43033	LOBMEYER Dick	935-3314	8
43036	*RANCHO SILVERADO	935-5634	+0
43038	DIAS Johnnie A	935-1861	+0
*	1 BUS 2 RES	2 NEW	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

LOST HILLS RD 1990



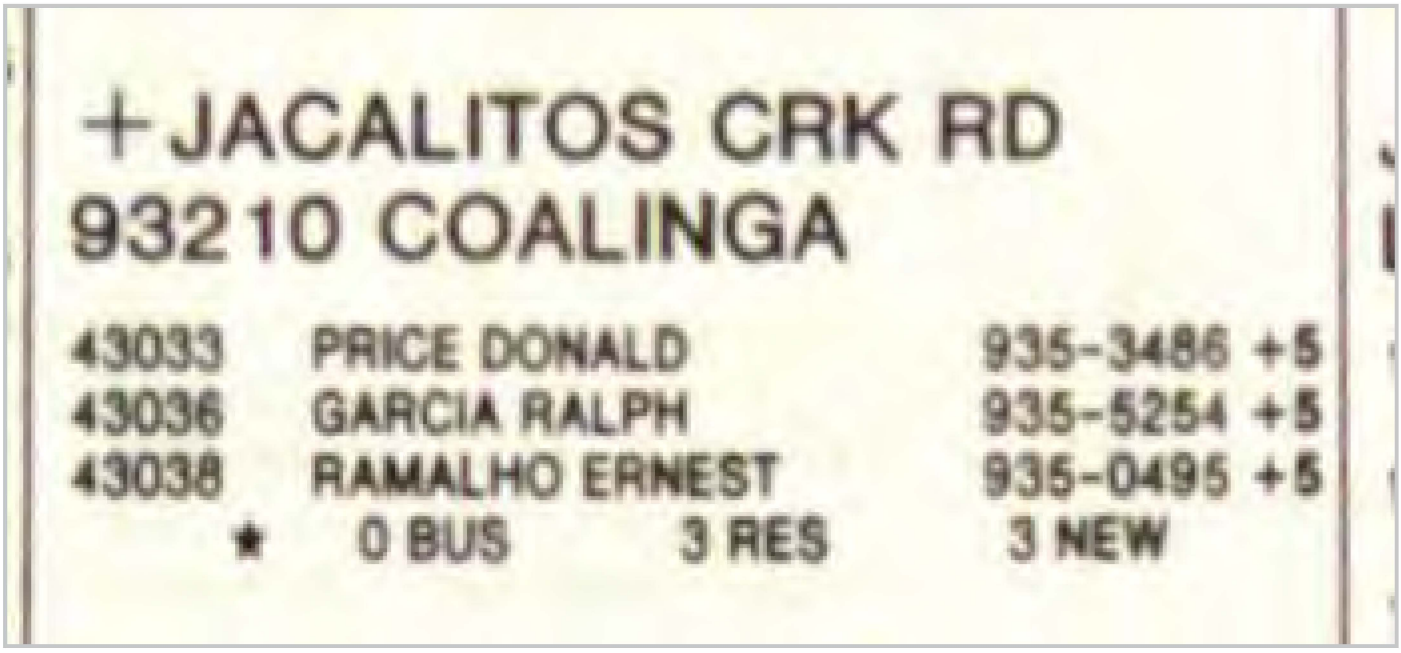
LOST HILLS RD 93210
COALINGA

45315	*ACME PAVING CO ROCK	935-2086	7
	*ACME ROCK	935-2086	
45557	DENHARTOG John	935-3455	2
46005	*SHEPPA READY MIX	935-1569	7
NO #	DENHARTOG Ted W	935-0103	

* 3 BUS 2 RES 0 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

JACALITOS CREEK RD 1985



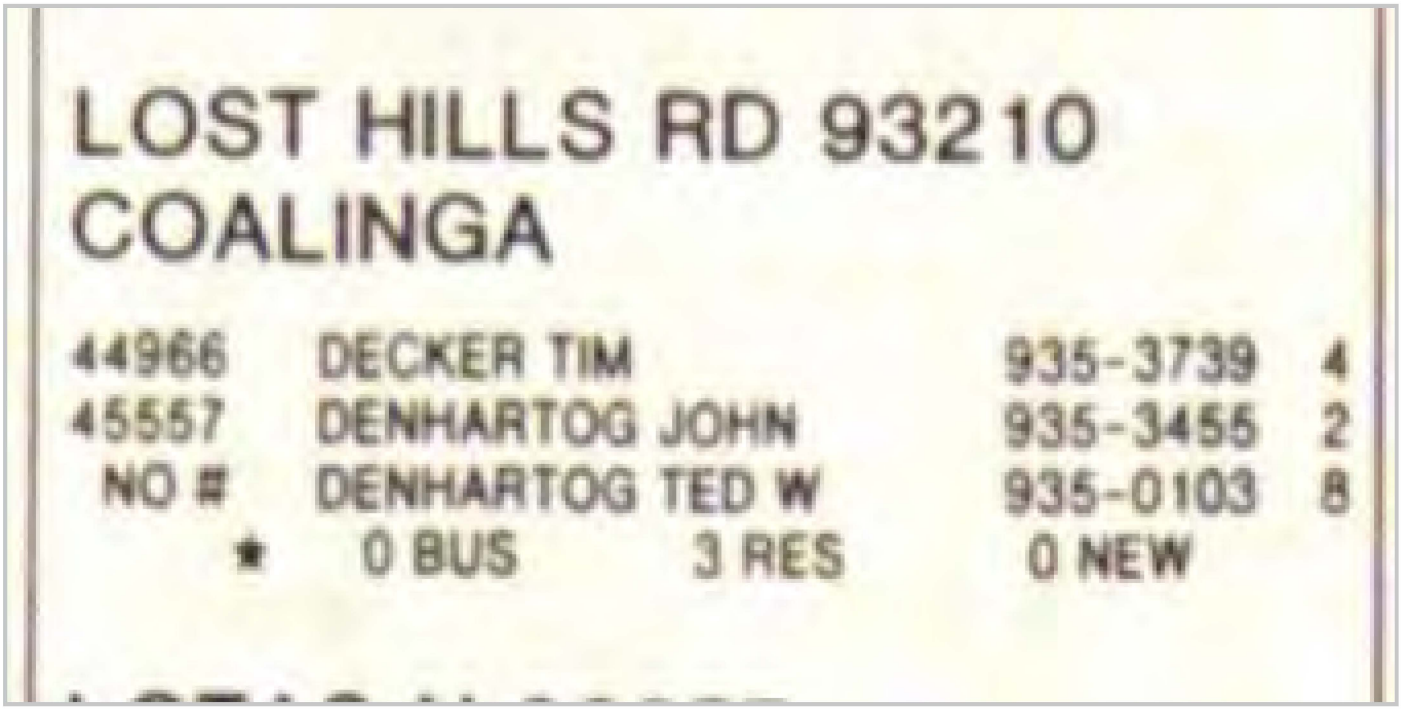
+JACALITOS CRK RD
93210 COALINGA

43033	PRICE DONALD	935-3486 +5
43036	GARCIA RALPH	935-5254 +5
43038	RAMALHO ERNEST	935-0495 +5

★ 0 BUS 3 RES 3 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

LOST HILLS RD 1985



LOST HILLS RD 93210
COALINGA

44966	DECKER TIM	935-3739	4
45557	DENHARTOG JOHN	935-3455	2
NO #	DENHARTOG TED W	935-0103	8

* 0 BUS 3 RES 0 NEW

APPENDIX B

INTERVIEW DOCUMENTATION

EXHIBIT 6-A PRELIMINARY ENVIRONMENTAL STUDY (PES)

Federal Project No.: BRLO-5942(234) *(Federal Program Prefix-Project No., Agreement No.)* **Final Design:** 2017 *(Expected Start Date)*

To: Mr. James Perrault *(District Local Assistance Engineer)*
District 6 *(District)*
855 M Street, Suite 200, Fresno, CA 93721 *(Address)*
James.Perrault@dot.ca.gov

From: County of Fresno *(Local Agency)*
Ms. Alexis Rutherford (559) 600-4530 *(Project Manager's Name and Telephone No.)*
2220 Tulare Street, Suite 600 *(Address)*
arutherford@co.fresno.ca.us *(Email Address)*

Is this Project "ON" the State Highway System? ☐ Yes ☒ No **IF YES, STOP HERE** and contact the District Local Assistance Engineer regarding the completion of other environmental documentation.

Federal State Transportation Improvement Program (FSTIP) http://www.dot.ca.gov/hq/transprog/fedpgm.htm: 2013 *(Currently Adopted Plan Date)* **(Attachment A)** *(Page No.___ attach to this form)*
http://www.dot.ca.gov/hq/transprog/oftmp.htm

Programming for FSTIP:	Preliminary Engineering		Right of Way		Construction	
	Prior *(Fiscal Year)*	$ 579,000 *(Dollars)*	17/18 *(Fiscal Year)*	$ 30,000 *(Dollars)*	18/19 / Beyond *(Fiscal Year)*	$ 2,908,000 *(Dollars)*

Project Description as Shown in RTP and FSTIP: Bridge No. 42C0078, Lost Hills Ave, over Jacalitos Creek, Jacalitos Creek Road. Replace two lane structurally deficient bridge with standard two lane bridge. Toll credits programmed for PE, R/W, and CON

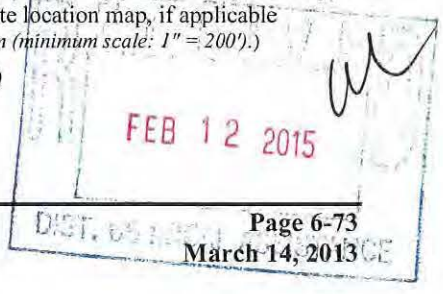
Detailed Project Description: See Notes.

Preliminary Design Information:
Does the project involve any of the following? Please check the appropriate boxes and delineate on an attached map, plan, or layout including any additional pertinent information.

Yes	No		Yes	No		Yes	No	
☒	☐	Widen existing roadway	☒	☐	Ground disturbance	☒	☐	Easements
☐	☒	Increase number of through lanes	☒	☐	Road cut/fill	☒	☐	Equipment staging
☐	☒	New alignment	☒	☐	Excavation: anticipated maximum depth 15'	☒	☐	Temporary access road/detour
☐	☒	Capacity increasing—other (e.g., channelization)				☐	☒	Utility relocation
			☐	☒	Drainage/culverts	☒	☐	Right of way acquisition (if yes, attach map with APN)
☐	☒	Realignment	☐	☒	Flooding protection			
☐	☒	Ramp or street closure	☒	☐	Stream channel work	☐	☒	Disposal/borrow sites
☒	☐	Bridge work	☒	☐	Pile driving	☐	☒	Part of larger adjacent project
☒	☐	Vegetation removal						
☐	☒	Tree removal	☒	☐	Demolition	☐	☒	Railroad

Required Attachments:

☒ Regional map ☒ Project location map ☒ Project footprint map (existing/proposed right of way)
☒ Engineering drawings (existing and proposed cross sections), if available ☐ Borrow/disposal site location map, if applicable
(Note: all maps (except project location map and regional maps) should be consistent with the project description (minimum scale: 1" = 200').)
☒ Notes to support the conclusions of this checklist/project description continuation page (attached)



Examine the project for potential effects on the environment, direct or indirect and answer the following questions. The "construction area," as specified below, includes all areas of ground disturbance associated with the project, including staging and stockpiling areas and temporary access roads.

Each answer must be briefly documented on the "Notes" pages at the end of the PES Form.

A. Potential Environmental Effects	Yes	To Be Determined	No
General			
1. Will the project require future construction to fully utilize the design capabilities included in the proposed project?	☐	☐	☒
2. Will the project generate public controversy?	☐	☐	☒
Noise			
3. Is the project a Type I project as defined in 23 CFR 772.5(h); "construction on new location or the physical alteration of an existing highway, which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes"?	☐	☐	☒
4. Does the project have the potential for adverse construction-related noise impact (such as related to pile driving)?	☐	☒	☐
Air Quality			
5. Is the project in a NAAQS non-attainment or maintenance area?	☒	☐	☐
6. Is the project exempt from the requirement that a conformity determination be made? (If "Yes," state which conformity exemption in 40 CFR 93.126, Table 2 applies): Widening narrow pavements or reconstructing bridges (no additional travel lanes).	☒	☐	☐
7. Is the project exempt from regional conformity? (If "Yes," state which conformity exemption in 40 CFR 93.127, Table 3 applies): _____	☒	☐	☐
8. If project is not exempt from regional conformity, (If "No" on Question #7)			
Is project in a metropolitan non-attainment/maintenance area?	☐	☐	☐
Is project in an isolated rural non-attainment area?	☐	☐	☐
Is project in a CO, PM10 and/or PM2.5 non-attainment/maintenance area?	☐	☐	☐
Hazardous Materials/Hazardous Waste			
9. Is there potential for hazardous materials (including underground or aboveground tanks, etc.) or hazardous waste (including oil/water separators, waste oil, asbestos-containing material, lead-based paint, ADL, etc.) within or immediately adjacent to the construction area?	☐	☒	☐
Water Quality/Resources			
10. Does the project have the potential to impact water resources (rivers, streams, bays, inlets, lakes, drainage sloughs) within or immediately adjacent to the project area?	☒	☐	☐
11. Is the project within a designated sole-source aquifer?	☐	☐	☒
Coastal Zone			
12. Is the project within the State Coastal Zone, San Francisco Bay, or Suisun Marsh?	☐	☐	☒
Floodplain			
13. Is the construction area located within a regulatory floodway or within the base floodplain (100-year) elevation of a watercourse or lake?	☒	☐	☒
Wild and Scenic Rivers			
14. Is the project within or immediately adjacent to a Wild and Scenic River System?	☐	☐	☒
Biological Resources			
15. Is there a potential for federally listed threatened or endangered species, or their critical habitat or essential fish habitat to occur within or adjacent to the construction area?	☐	☒	☐
16. Does the project have the potential to directly or indirectly affect migratory birds, or their nests or eggs (such as vegetation removal, box culvert replacement/repair, bridge work, etc.)?	☐	☒	☐
17. Is there a potential for wetlands to occur within or adjacent to the construction area?	☐	☒	☐

18. Is there a potential for agricultural wetlands to occur within or adjacent to the construction area?	☐	☐	☒
19. Is there a potential for the introduction or spread of invasive plant species?	☐	☒	☐
Sections 4(f) and 6(f)			
20. Are there any historic sites or publicly owned public parks, recreation areas, wildlife or waterfowl refuges (Section 4[f]) within or immediately adjacent to the construction area?	☐	☐	☒
21. Does the project have the potential to affect properties acquired or improved with Land and Water Conservation Fund Act (Section 6[f]) funds?	☐	☐	☒
Visual Resources			
22. Does the project have the potential to affect any visual or scenic resources?	☐	☐	☒
Relocation Impacts			
23. Will the project require the relocation of residential or business properties?	☐	☐	☒
Land Use, Community, and Farmland Impacts			
24. Will the project require any right of way, including partial or full takes? Consider construction easements and utility relocations.	☐	☒	☐
25. Is the project inconsistent with plans and goals adopted by the community?	☐	☐	☒
26. Does the project have the potential to divide or disrupt neighborhoods/communities?	☐	☐	☒
27. Does the project have the potential to disproportionately affect low-income and minority populations?	☐	☐	☒
28. Will the project require the relocation of public utilities?	☐	☒	☐
29. Will the project affect access to properties or roadways?	☐	☐	☒
30. Will the project involve changes in access control to the State Highway System (SHS)?	☐	☐	☒
31. Will the project involve the use of a temporary road, detour, or ramp closure?	☐	☐	☒
32. Will the project reduce available parking?	☐	☐	☒
33. Will the project construction encroach on state or federal lands?	☐	☐	☒
34. Will the project convert any farmland to a different use or impact any farmlands?	☐	☐	☒
Cultural Resources			
35. Is there National Register listed, or potentially eligible historic properties, or archaeological resources within or immediately adjacent to the construction area? *(Note: Caltrans PQS answers question #35)*	☐	☒ JLW	☐
36. Is the project adjacent to, or would it encroach on Tribal land?	☐	☐	☒

For Sections B, C, and D, check appropriate box to indicate required technical studies, coordination, permits, or approvals.

B. Required Technical Studies and Analyses	C. Coordination	D. Anticipated Actions/Permits/Approvals
☐ **Traffic**		
Check one:		
☐ Traffic Study	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
☒ **Noise**		
Check as applicable:		
☐ Traffic Related		
☒ Construction Related		
Check one:		
☐ Noise Study Report	☐ Caltrans	☐ Approval
☐ NADR	☐ Caltrans	☐ Approval

	☐ Technical Memorandum	☐ Caltrans	☐ Approval
	☒ Discussion in ED Only	☒ Caltrans	☒ Approval
☒	**Air Quality** ***Check as applicable:*** ☒ Traffic Related ☐ Construction Related ***Check one:***		
	☐ Air Quality Report	☐ Caltrans	☐ Approval
	☐ Technical Memorandum	☐ Caltrans	☐ Approval
	☒ Discussion in ED Only	☐ Caltrans	☐ Approval
		☐ FHWA	☐ Conformity Finding (23 USC 327 CEs, EAs, EISs)
		☒ Caltrans	☒ Conformity Finding (23 USC 326 CEs)
		☐ Regional Agency	☐ PM10/PM2.5 Interagency Consultation
☒	**Hazardous Materials/ Hazardous Waste** ***Check as applicable:***		
	☒ Initial Site Assessment (Phase 1)	☒ Caltrans	☒ Approval
	☐ Preliminary Site Assessment (Phase 2)	☐ Caltrans	☐ Approval
	☐ Discussion in ED Only	☐ Caltrans	☐ Approval
		☐ Cal EPA DTSC	☐ Review Database
		☐ Local Agency	☐ Review Database
☒	**Water Quality/Resources** ***Check as applicable:***		
	☐ Water Quality Assess. Report	☐ Caltrans	☐ Approval
	☒ Technical Memorandum	☒ Caltrans	☒ Approval
	☐ Discussion in ED Only	☐ Caltrans	☐ Approval
☐	**Sole-Source Aquifer (Districts 5, 6 and 11)**	☐ EPA (S.F. Regional Office)	☐ Approval of Analysis in ED
☐	**Coastal Zone**	☐ CCC	☐ Coastal Zone Consistency Determination

B. Required Technical Studies and Analyses	C. Coordination	D. Anticipated Actions/Permits/Approvals
☒ **Floodplain**		
Check as applicable:		
☒ Location Hydraulic Study	☒ Caltrans	☒ Approval
☐ Floodplain Evaluation Report	☐ Caltrans	☐ Approval
☒ Summary Floodplain Encroachment Report	☒ Caltrans	☒ Approval
	☐ Caltrans	☐ Only Practicable Alternative Finding
	☐ FHWA	☐ Approves significant encroachments and concurs in Only Practicable Alternative Findings
☐ **Wild and Scenic Rivers**	☐ River Managing Agency	☐ Wild and Scenic Rivers Determination
☒ **Biological Resources**		
Check as applicable:		
☒ NES, Minimal Impact	☒ Caltrans	☒ Approval
☒ NES	consultant	
☒ BA	☐ Caltrans	☐ Approves for Consultation
	☐ USFWS ☐ NOAA Fisheries	☐ Section 7 Informal/Formal Consultation
☐ EFH Evaluation	☐ NOAA Fisheries	☐ MSA Consultation
☐ Bio-Acoustic Evaluation	☐ NOAA Fisheries	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ **Wetlands**		
Check as applicable:		
☐ WD and Assessment	☐ Caltrans	☐ Approval
	☒ ACOE	☒ Wetland Verification
	☐ NRCS	☐ Agricultural Wetland Verification
	☐ Caltrans	☐ Wetlands Only Practicable Alternative Finding
☐ **Invasive Plants**		
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
☐ **Section 4(f)**		
Check as applicable:	☐ Caltrans	☐ Determine Temporary Occupancy
☐ De minimis	☐ Caltrans	☐ De minimis finding
☐ Programmatic 4(f) Evaluation Type: _____	☐ Caltrans	☐ Approval
☐ Individual 4(f) Evaluation	☐ Caltrans	☐ Approval
	☐ Agency with Jurisdiction ☐ SHPO ☐ DOI ☐ HUD ☐ USDA	

B. Required Technical Studies and Analyses	C. Coordination	D. Anticipated Actions/Permits/Approvals
☐ **Section 6(f)**	☐ Agency with Jurisdiction ☐ NPS	☐ Determines Consistency with Long-Term Management Plan
	☐ NPS	☐ Approves Conversion
☐ **Visual Resources**		
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Minor VIA	☐ Caltrans	☐ Approval
☐ Moderate VIA	☐ Caltrans	☐ Approval
☐ Advance/Complex VIA	☐ Caltrans	☐ Approval
☐ **Relocation Impacts**		
Check one:		
☐ Relocation Impact Memo	☐ Caltrans	☐ Approval
☐ Relocation Impact Study	☐ Caltrans	☐ Approval
☐ Relocation Impact Report	☐ Caltrans	☐ Approval
☐ **Land Use and Community Impacts**		
Check one:		
☐ CIA	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
☐ **Construction/Encroachment on State Lands**		
Check as applicable:		
☐ SLC Jurisdiction	☐ SLC	☐ SLC Lease
☐ Caltrans Jurisdiction	☐ Caltrans	☐ Encroachment Permit
☐ SP Jurisdiction	☐ SP	☐ Encroachment Permit
☐ **Construction/Encroachment on Federal Lands**	☐ Federal Agency with Jurisdiction	☐ Encroachment Permit
☐ **Construction/Encroachment On Indian Trust Lands**	☐ Bureau of Indian Affairs	☐ Right of Way Permit
☐ **Farmlands**		
Check one:		
☐ CIA	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
Check as applicable:		
☐ Form AD 1006	☐ NRCS	☐ Approves Conversion
	☐ CDOC	☐ Approves Conversion
☐ Conversion to Non-Agri Use	☐ ACOE	

B. Required Technical Studies and Analyses	C. Coordination	D. Anticipated Actions/Permits/ Approvals
☒ **Cultural Resources** (PQS completes this section) *Check as applicable:*	☐ Caltrans PQS	☐ Screened Undertaking
☒ APE Map	☒ Caltrans PQS and DLAE	☒ Approves APE Map
	☒ Local Preservation Groups and/or Native American Tribes	☒ Provides Comments Regarding Concerns with Project
☐ HPSR ☒ ASR ☐ HRER	☒ Caltrans	☒ Approves for Consultation
☐ Finding of Effect Report	☐ Caltrans	☐ Concurs on No Effect, No Adverse Effect with Standard Conditions
	☐ SHPO	☐ Letter of Concurrence on Eligibility, No Adverse Effect without Standard
☐ MOA	☐ Caltrans	☐ Approves MOA
	☐ SHPO	☐ Approves MOA
	☐ ACHP (if requested)	☐ Approves MOA
☒ **Permits** Copies of permits and a list of mitigation commitments are mandatory submittals following NEPA approval.	☒ ACOE	☒ Section 404 Nationwide Permit
	☐ ACOE	☐ Section 404 Individual Permit
	☐ Caltrans/ACOE/EPA ☐ USFWS ☐ NOAA Fisheries	☐ NEPA/404 Integration MOU
	☐ ACOE	☐ Rivers and Harbors Act Section 10 Permit
	☐ USCG	☐ USCG Bridge Permit
	☒ RWQCB	☒ Section 401 Water Quality Certification
	☒ CDFG	☒ Section 1602 Streambed Alteration Agreement
	☒ RWQCB	☒ NPDES Permit
	☐ CCC ☐ Local Agency	☐ Coastal Zone Permit
	☐ BCDC	☐ BCDC Permit

Notes: Additional studies may be required for other federal agencies.

ACHP = Advisory Council on Historic Preservation
ACOE = U.S. Army Corps of Engineers
ADL = Aerially Deposited Lead
APE = Area of Potential Effect
APN = Assessor Parcel Number
ASR = Archaeological Survey Report
BA = Biological Assessment
BCDC = Bay Conservation and Development Commission
BE = Biological Evaluation
BO = Biological Opinion
Cal EPA = California Environmental Protection Agency
CCC = California Coastal Commission
CDFG = California Department of Fish and Game
CDOC = California Department of Conservation
CE = Categorical Exclusion
CIA = Community Impact Assessment
CWA = Clean Water Act
DLAE = District Local Assistance Engineer
DOI = U.S. Department of Interior
DTSC = Department of Toxic Substances Control
EA = Environmental Assessment
ED = Environmental Document
EFH = Essential Fish Habitat
EIS = Environmental Impact Statement
EPA = U.S. Environmental Protection Agency
FEMA = Federal Emergency Management Agency
FHWA = Federal Highway Administration
FONSI = Finding of No Significant Impacted
FTIP = Federal Transportation Improvement Program
HPSR = Historic Property Survey Report
HRER = Historical Resources Evaluation Report
HUD = U.S. Housing and Urban Development
MOA = Memorandum of Agreement
MSA = Magnuson-Stevens Fishery Conservation and Management Act
NEPA = National Environmental Policy Act
NADR = Noise Abatement Decision Report
NES = Natural Environment Study
NHPA = National Historic Preservation Act
NOAA = National Oceanic and Atmospheric Administration
NMFS National Marine Fisheries Service
NPDES = National Pollutant Discharge Elimination System
NPS = National Park Service
NRCS = Natural Resources Conservation Service
PM10 = Particulate Matter 10 Microns in Diameter or Less
PM2.5 = Particulate Matter 2.5 Microns in Diameter or Less
PMP = Project Management Plan
PQS = Professionally Qualified Staff
ROD = Record of Decision
RTIP = Regional Transportation Improvement Program
RTP = Regional Transportation Plan
RWQCB = Regional Water Quality Control Board
SER = Standard Environmental Reference
SEP = Senior Environmental Planner
SHPO = State Historic Preservation Officer
SLC = State Lands Commission
SP = State Parks
TIP = Transportation Improvement Program
USCG = U.S. Coast Guard
USDA = U.S. Department of Agriculture
USFWS = U.S. Fish and Wildlife Service
WD = Wetland Delineation

E. Preliminary Environmental Document Classification (NEPA)

Based on the evaluation of the project, the environmental document to be developed should be:

Check one:

- ☐ Environmental Impact Statement (*Note: Engagement with participating agencies in accordance with 23 USC 139 required)*
  - ☐ Compliance with 23 USC 139 regarding Participating Agencies required
- ☐ Complex Environmental Assessment
- ☐ Routine Environmental Assessment
- ☐ Categorical Exclusion without required technical studies.
- ☒ Categorical Exclusion with required technical studies

(if Categorical Exclusion is selected, check one of the following):

- ☐ Section 23 USC 326
  - ☒ 23 CFR 771 activity (c)(28)
  - ☐ 23 CFR 771 activity (d) ()
  - ☐ Activity _____ listed in the Section 23 USC 326
- ☐ Section 23 USC 327

F. Public Availability and Public Hearing

Check as applicable:

- ☐ Not Required
- ☐ Notice of Availability of Environmental Document
- ☐ Public Meeting
- ☐ Notice of Opportunity for a Public Hearing
- ☐ Public Hearing Required

G. Signatures

Local Agency Staff and/or Consultant Signature

(Signature of Preparer)	2/20/15 (Date)	559-600-4530 (Telephone No.)

Alexis Rutherford
(Name)

Local Agency Project Engineer Signature

This document was prepared under my supervision, according to the *Local Assistance Procedures Manual,* Exhibit 6-B, "Instructions for Completing the Preliminary Environmental Study Form."

(Signature of Local Agency)	2-11-2015 (Date)	559-600-4505 (Telephone No.)

Caltrans District Professionally Qualified Staff (PQS) Signature

☐ Project does not meet definition of an "undertaking"; no further review is necessary under Section 106 ("No" Section A, #35).

☐ Project is limited to the type of activity listed in Attachment 2 of the Section 106 PA and based on the information provided in the PES Form, the project does not have the potential to affect historic properties ("No" Section A, #35).

☒ Project is limited to the type of activity listed in Attachment 2 of the Section 106 PA, but the following additional procedures or information is needed to determine the potential for effect ("To Be Determined" Section A, #35):
☐ Records Search ☒ ASR ☒ APE Map ☐ _____

☐ Project meets the definition of an "undertaking"; all properties in the project area are exempt from evaluation per Attachment 4 of the Section 106 PA ("No" Section A, #35).

☐ The proposed undertaking is considered to have the potential to affect historic properties; further studies for 106 compliance are indicated in Sections B, C, and D of this PES Form ("Yes" Section A, #35).

John W Schlueter — *(Signature of Professionally Qualified Staff)*
3.2.2015 — *(Date)*
(559) 445-6375 — *(Telephone No.)*

The following signatures are required for all CEs, routine and complex EAs, and EISs:

Caltrans District Senior Environmental Planner (or Designee) and DLAE Signatures

I have reviewed this Preliminary Environmental Study (PES) Form and determined that the submittal is complete and sufficient. I concur with the studies to be performed and the recommended NEPA Class of Action.

_____ — *(Signature of Senior Environmental Planner or Designee)*
3/16/2015 — *(Date)*
559 445 6447 — *(Telephone No.)*
G. William Norris II — *(Name)*

_____ — *(Signature of District Local Assistance Engineer or Designee)*
3/16/15 — *(Date)*
559 445-5417 — *(Telephone No.)*
Tim Rewis — *(Name)*

☐ HQ DEA Environmental Coordinator concurrence _____ (*date*). Email concurrence attached.

Preliminary Environmental Investigation
Notes to Support the Conclusions of the PES Form
(May Also Include Continuation of Detailed Project Description)

The proposed project consists of replacing the Jacalitos Creek Bridge on Lost Hills Avenue at Jacalitos Creek Road, near the City of Coalinga (See Attachment B). The existing functionally obsolete, 2 lane bridge would be replaced with a new 2 lane bridge that meets current standards. Jacalitos Creek Road may need to shift slightly at the intersection with Lost Hills Avenue to accommodate approach railing. It is anticipated that an onsite low water crossing would be used to move traffic through the construction site. Right of way acquisition may be required. Utility relocation is not anticipated. Further investigation is required to determine the bridge design; however, a conceptual design is included as Attachment C.

The five-span timber structure was originally built in 1940 and two spans we reconstructed of reinforced concrete slab in 1962. It is approximately 28' in width and 98' in length with two 11'wide travel lanes and 2' wide shoulders. The proposed structure could be approximately 105' in length and approximately 32' in width. Further investigation is required.

1. The proposed project would not require future construction to fully utilize the design capabilities.
2. Public controversy is not anticipated.
3. The proposed bridge replacement project is not a Type 1 project as defined in 23 CFR 772.5(h).
4. Adverse noise impacts are not anticipated.
5. Fresno County is listed in the Table of Conformity Areas.
6. The proposed project type is listed in 40 CFR, Part 93, Section 93.126 Table 2.0 Exempt Projects as "Widening narrow pavements or reconstructing bridges (no additional travel lanes)."
7. According to the Transportation Air Quality Conformity Findings Checklist, the project is exempt from all project-level conformity requirements (40 CFR 93.126) and all air quality conformity requirements have been met.
8. See #7.
9. According to the Geotracker database, there are no cleanup sites within 1000 feet or the greater vicinity of the proposed project (See Attachment D). The traffic striping and print railing paint will be tested for lead and the concrete will be tested for asbestos. In addition, the County will prepare an Initial Site Assessment. If required, the County would include worker safety specification(s) in the construction contract for the safe handling and disposal of lead and asbestos.
10. Yes. A technical memorandum will be prepared.
11. The proposed project is not within the Fresno Sole Source Aquifer (See Attachment E).
12. The proposed project is not within the State Coastal Zone.
13. The proposed project is in Flood Zone A (See Attachment F). A Location Hydraulic Study form and a Summary Floodplain Encroachment form will be prepared for the project.
14. The project is not within a .25 mile of a Wild and Scenic River System according the National Wild and Scenic Rivers website.

15. To be determined. An NESMI will be prepared for the project.

16. Swallow and Migratory Bird Contract Provisions would be included in the construction specifications if construction would commence or carry over into the nesting season.

17. Impacts to wetlands are not anticipated (See Attachment G). The NESMI will confirm the presence or absence of wetland features.

18. No. Agricultural is not found adjacent to the project.

19. Any required hydroseeding will be conducted per Caltrans requirements.

20. There are no publically owned parks, recreation areas or wildlife or waterfowl refuges within the or immediately adjacent to the project area.

21. No.

22. Impacts to visual resources are not anticipated. The project scored a 9 on the Visual Impact Assessment Guide (See Attachment H).

23. The proposed project would not require relocation of a residence or business.

24. Further investigation required. The Assessor's Parcel Map is included as Attachment J.

25. The project is consistent with community plans and goals.

26. The project does not have the potential to divide or disrupt neighborhoods or communities.

27. The project would not disproportionately affect low-income or minority populations.

28. Further investigation is required; however, utility relocation is not anticipated.

29. An onsite detour is anticipated during construction activities.

30. Access control to the State Highway System would not change.

31. See #29.

32. The project would not affect available parking.

33. The project would not encroach on state or federal lands.

34. No. According to the Department of Conservation's California Fresno County Important Farmland 2012 Map, the project are is surrounded by land classified as Nonagricultural and Natural Vegetation (See Attachment I).

35. To be screened by Caltrans PQS.

36. The project is not adjacent to and will not encroach on Tribal Land.

Distribution 1) Original - DLAE, 2) Local Agency Project Manager, 3) DLA Environmental Coordinator
4) Senior Environmental Planner (or designee), 5) District PQS

Updated: 05/15/08

Fresno Council of Governments
2015 Federal Transportation Improvement Program
Fresno County Region

Lead Agency: Fresno County

LSTMP413	AMENDMENT: 14-02

Project Title:FRE040501 - BRIDGE NO. 42C0078, Lost Hills Ave, over Jacalitos Creek, Jacalitos Creek Rd
Project Description: BRIDGE NO. 42C0078, Lost Hills Ave, over Jacalitos Creek, Jacalitos Creek Rd. Replace two lane structurally deficient bridge with standard two lane bridge. Toll credits programmed for PE, R/W, and CON.

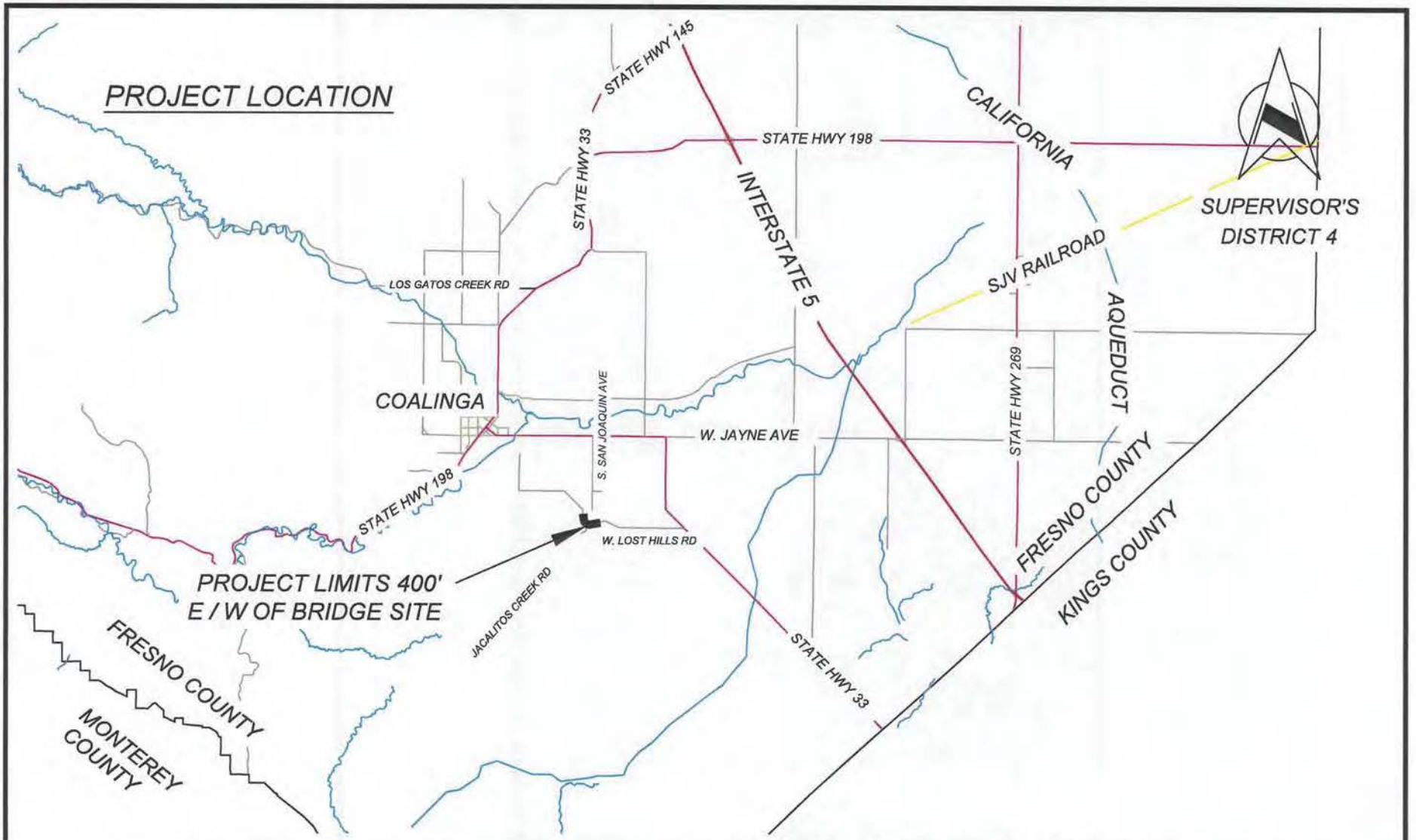
CALTRANS_FED_ID:5942 (234)

Sys: Local Rt: TCM: No Model #: CI:N Exempt Category: Safety - Non capacity widening or bridge reconstruction.

Cost Difference: $0 Est Total Cost: $3,517,000 Open to Traffic:

	Phase	PRIOR	14/15	15/16	16/17	17/18	18/19	BEYOND	TOTAL
Highway Bridge Program - State - Bridge - State (HBRR)	PE	$579,000							$579,000
	RW					$30,000			$30,000
	CON						$2,908,000		$2,908,000
	TOTAL	$579,000				$30,000	$2,908,000		$3,517,000
	TOTAL PE	$579,000	$0	$0	$0	$0	$0	$0	$579,000
	TOTAL RW	$0	$0	$0	$0	$30,000	$0	$0	$30,000
	TOTAL CON	$0	$0	$0	$0	$0	$2,908,000	$0	$2,908,000
	TOTAL TOTAL	$579,000				$30,000	$2,908,000		$3,517,000

Attachment B



		DATE
DESIGNED	M.Y.S.	01/14
DRAWN	J.M.	01/14

SCALE NONE

BRIDGE NO. 42C0078 / 03-038

DEPARTMENT OF PUBLIC WORKS AND PLANNING

JACALITOS CREEK BRIDGE REPLACEMENT ON LOST HILLS

FEDERAL PROJECT NO. BRLS-5942(234)

Jacalitos Creek Rd
W Lost Hills Rd
Google Earth
Image © 2015 Google

Attachment B

WEIGHT
LIMIT
© 2015 Google
© 2015 Google
Looking West

©2015 Google
©2015 Google
N/o Bridge

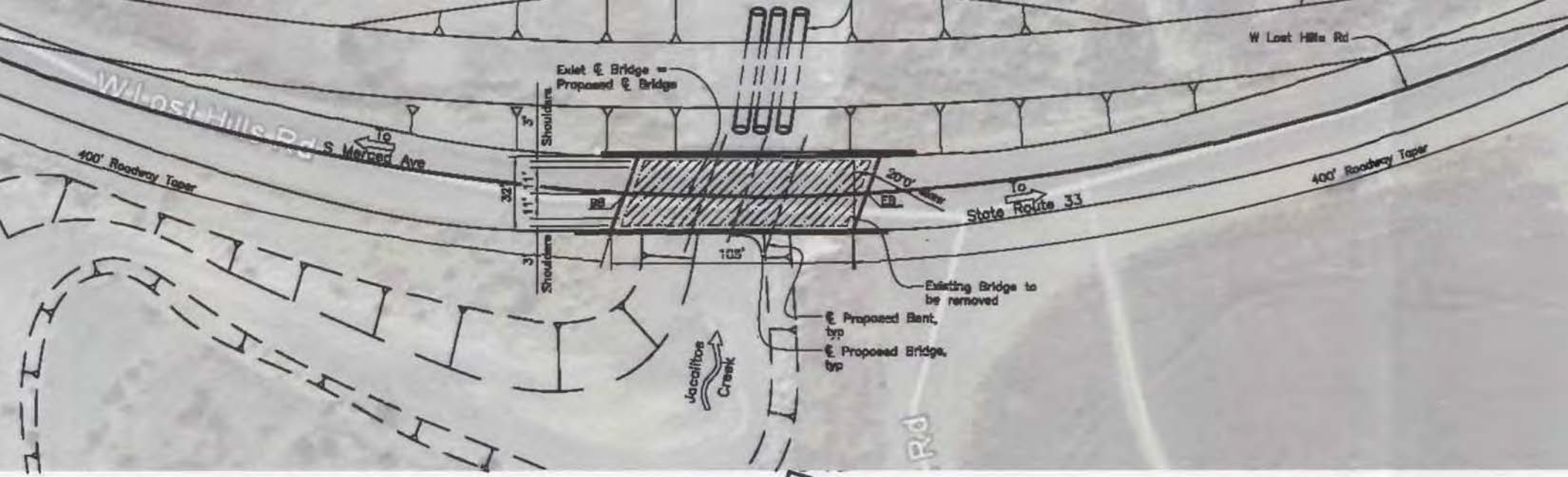
N
© 2015 Google
© 2015 Google
S/O Bridge

Attachment B

Google earth

feet 9
meters 2

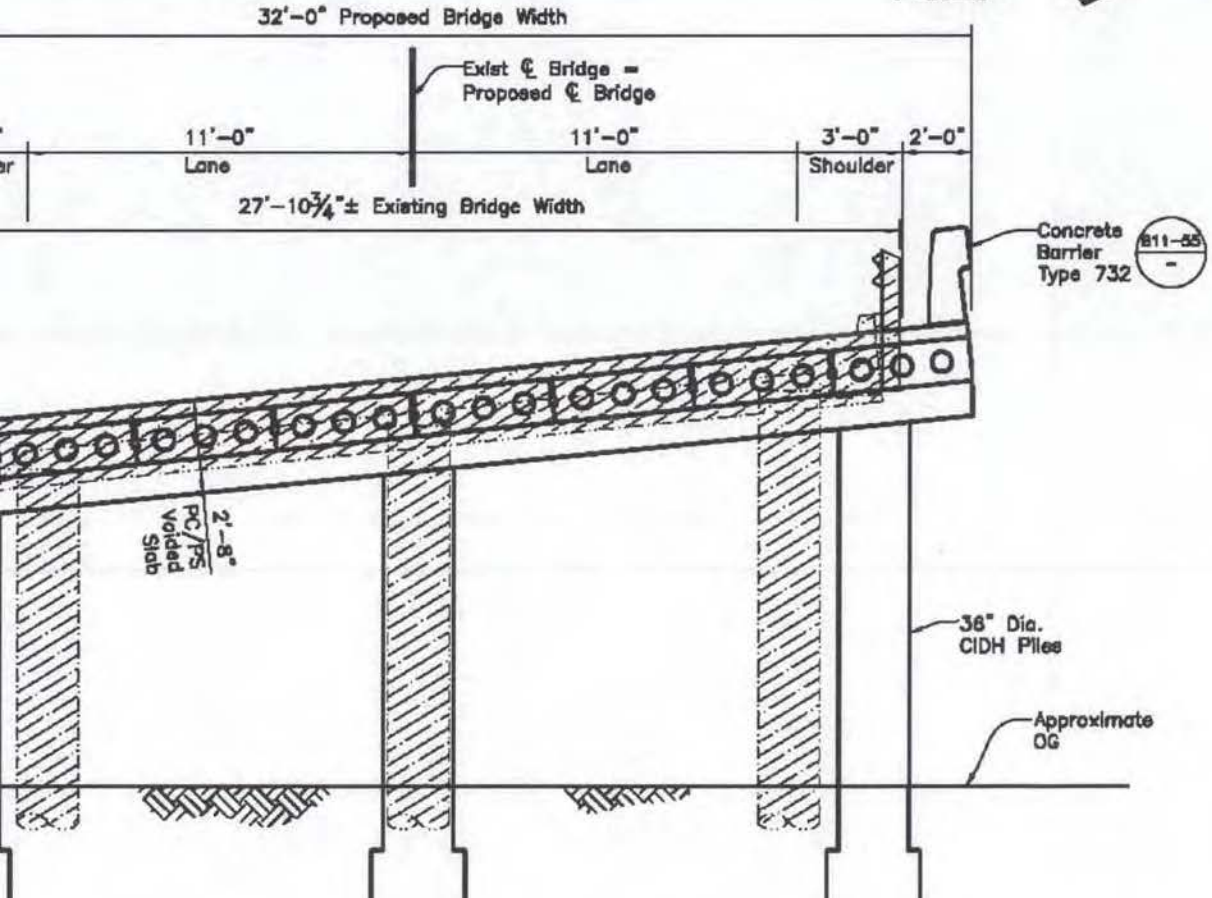
Looking @ intersection of Lost Hills Road & Jacalitos Creek Rd.



PLAN
1"=80'-0"

Legend

Exist bridge to be removed



Vehicular Traffic

1. _____ New alignment. No traffic at the site.
2. __X__ Traffic will be detoured away from site.
3. _____ Traffic will be carried on the structure. Stage construction will be required.
4. _____ Traffic will pass under the structure on

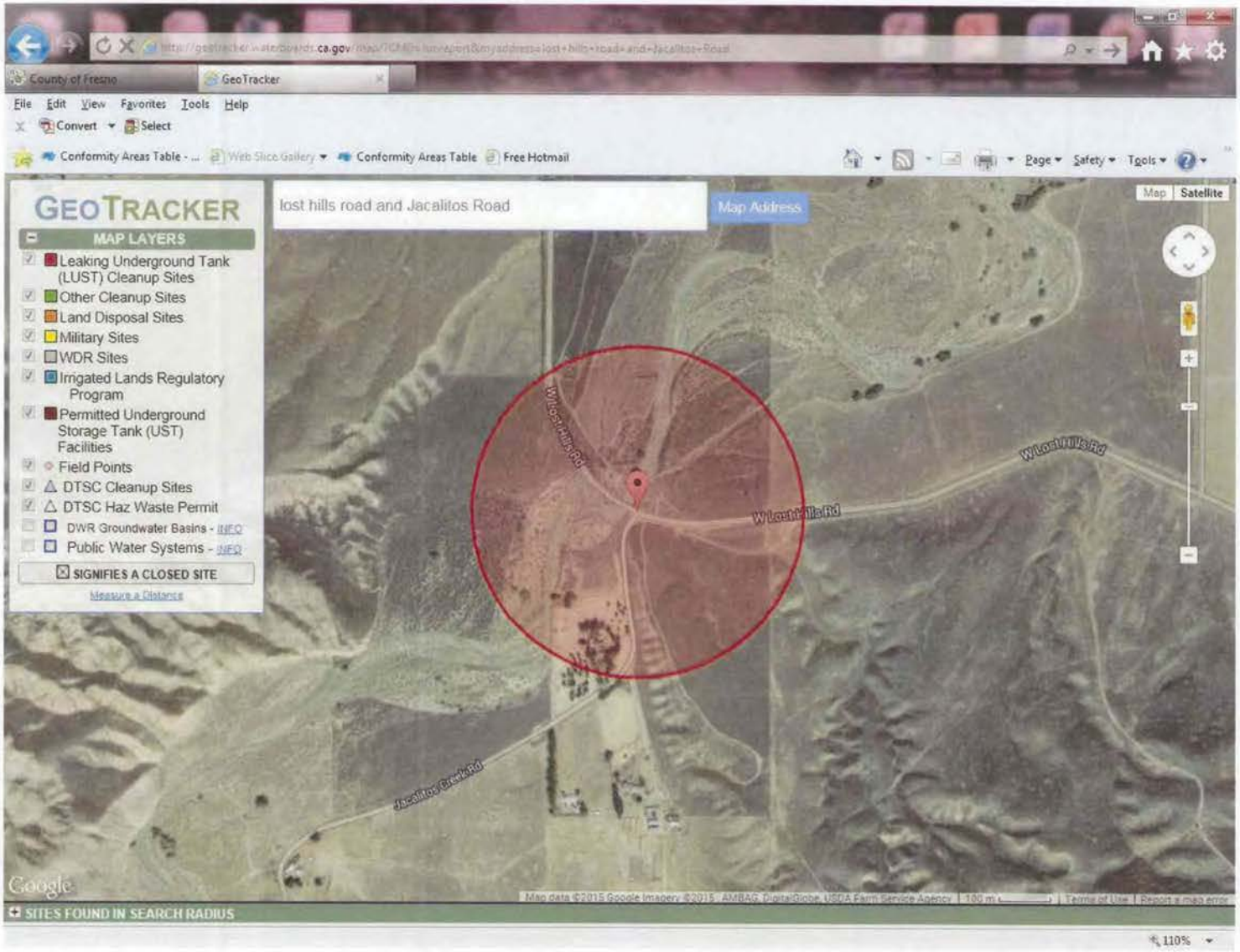
_____

A. __X__ No falsework allowed over t
B. _____ Falsework opening(s) require

	Temporary Vertical Clearance	Width of T Openir
_____ Bnd.	_____	_____
_____ Bnd.	_____	_____
_____ Two-way	_____	_____

C. _____ Temporary traffic lane reduc needed for footing excavatio

Date of Estimate	=	9/04/13
Structure Depth	=	2'-8"
Length	=	105'-0"
Width	=	32'-0"
Area	=	3,360
Cost /sq ft	=	$275
Cost New Bridge	=	$924,000
Bridge Removal	=	$33,000
Total Cost Including 10% mobilization 25% contingencies	=	$2,493,000

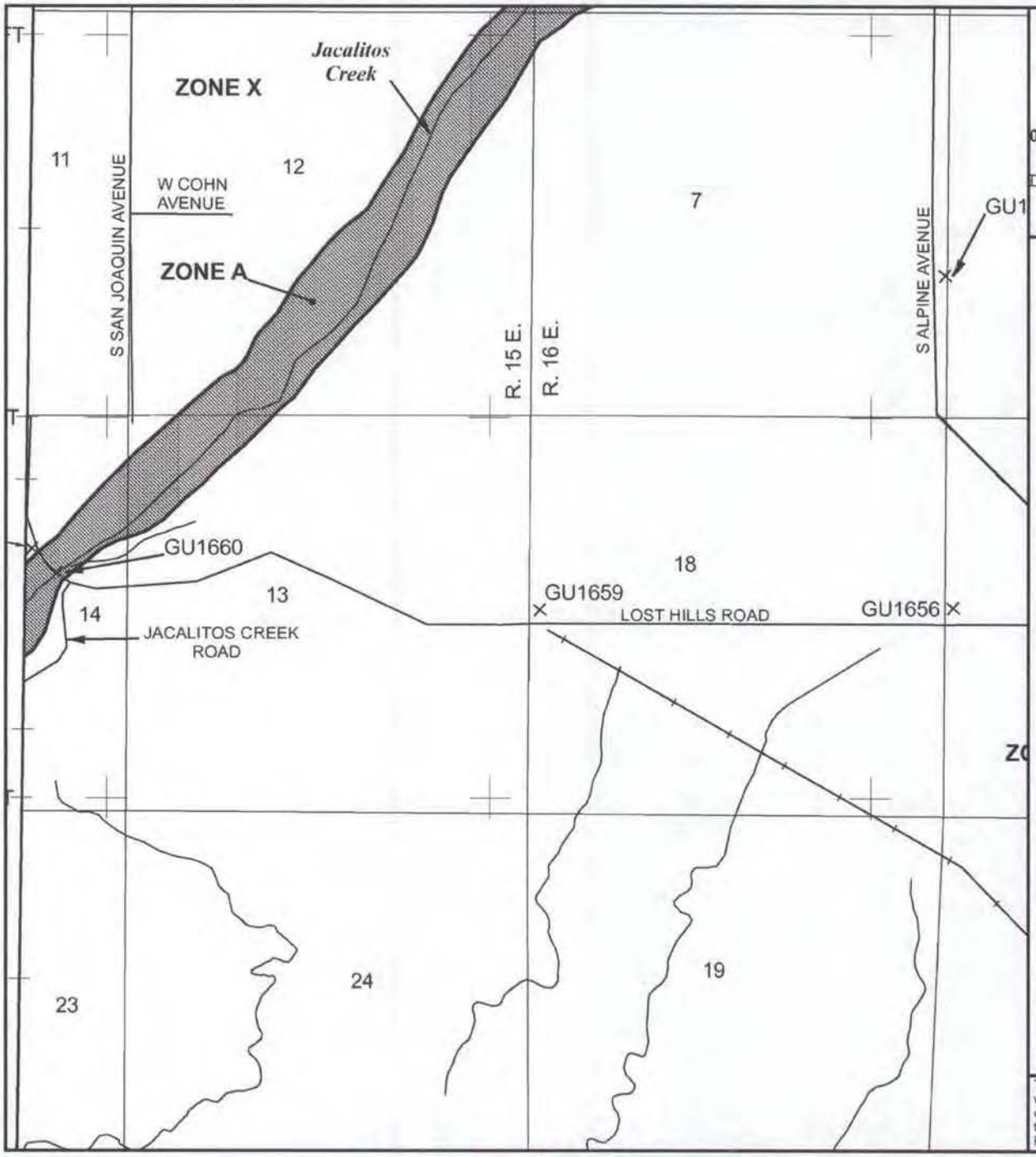

County of Fresno
GeoTracker
File Edit View Favorites Tools Help
Convert Select
Conformity Areas Table - ...
Web Slice Gallery
Conformity Areas Table
Free Hotmail
Page Safety Tools
GEOTRACKER
MAP LAYERS
Leaking Underground Tank (LUST) Cleanup Sites
Other Cleanup Sites
Land Disposal Sites
Military Sites
WDR Sites
Irrigated Lands Regulatory Program
Permitted Underground Storage Tank (UST) Facilities
Field Points
DTSC Cleanup Sites
DTSC Haz Waste Permit
DWR Groundwater Basins - INFO
Public Water Systems - INFO
SIGNIFIES A CLOSED SITE
Measure a Distance
lost hills road and Jacalitos Road
Map Address
Map
Satellite
W Lost Hills Rd
Jacalitos Creek Rd
Google
Map data ©2015 Google Imagery ©2015, AMBAG, DigitalGlobe, USDA Farm Service Agency
Terms of Use
Report a map error
SITES FOUND IN SEARCH RADIUS
110%

Attachment E.

Google earth

miles 100
km 200

Sole Source Aquifer



MAP SCALE 1" = 2000'

000 0 2000 4000

FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3400H

FIRM

FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 3400 OF 3525

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
COALINGA, CITY OF	060045	3400	H
FRESNO COUNTY	065029	3400	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C3400H

MAP REVISED
FEBRUARY 18, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

U.S. Fish and Wildlife Service
National Wetlands Inventory

BRLO-5942(234)

Feb 10, 2015

Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Riparian

- Herbaceous
- Forested/Shrub

Riparian Status

- Digital Data

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Jacalitos Creek Bridge Replacement on Lost Hills Avenue

Questionnaire to Determine Visual Impact Assessment (VIA) Level

Use the following questions and subsequent score as a guide to help determine the appropriate level of VIA documentation. This questionnaire assists the VIA preparer (i.e. Landscape Architect) in estimating the probable visual impacts of a proposed project on the environment and in understanding the degree and breadth of the possible visual issues. The goal is to develop a suitable document strategy that is thorough, concise and defensible.

Enter the project name and consider each of the ten questions below. Select the response that most closely applies to the proposed project and corresponding number on the right side of the table. Points are automatically computed at the bottom of the table and the total score should be matched to one of the five groups of scores at the end of the questionnaire that include recommended levels of VIA study and associated annotated outlines (i.e., minor, moderate, advanced/complex).

This scoring system should be used as a preliminary guide and should not be used as a substitute for objective analysis on the part of the preparer. Although the total score may recommend a certain level of VIA document, circumstances associated with any one of the ten question-areas may indicate the need to elevate the VIA to a greater level of detail. For projects done by others on the State Highway System, the District Landscape Architect should be consulted when scoping the VIA level and provide concurrence on the level of analysis used.

Calculate VIA Level Score

PROJECT NAME: Jacalitos Creek on Lost Hills Avenue	
CHANGE TO VISUAL ENVIRONMENT	
1. Will the project result in a noticeable change in the physical characteristics of the existing environment? *Consider all project components and construction impacts - both permanent and temporary, including landform changes, structures, noise barriers, vegetation removal, railing, signage, and contractor activities.*	No Noticeable Change (0 points)
2. Will the project complement or contrast with the visual character desired by the community? Evaluate the scale and extent of the project features compared to the surrounding scale of the community. Is the project likely to give an urban appearance to an existing rural or suburban community? Do you anticipate that the change will be viewed by the public as positive or negative? Research planning documents, or talk with local planners and community representatives to understand the type of visual environment local residents envision for their community.	High Compatibility (1 point)
3. What level of local concern is there for the types of project features (e.g., bridge structures, large excavations, sound barriers, or median	Low Concern (1 point)

planting removal) and construction impacts that are proposed? Certain project improvements can be of special interest to local citizens, causing a heightened level of public concern, and requiring a more focused visual analysis.	
4. Will the project require redesign or realignment to minimize adverse change or will mitigation, such as landscape or architectural treatment, likely be necessary? Consider the type of changes caused by the project, i.e., can undesirable views be screened or will desirable views be permanently obscured so a redesign should be considered?	No Mitigation Likely (0 points)
5. Will this project, when seen collectively with other projects, result in an aggregate adverse change (cumulative impacts) in overall visual quality or character? Identify any projects (both Caltrans and local) in the area that have been constructed in recent years and those currently planned for future construction. The window of time and the extent of area applicable to possible cumulative impacts should be based on a reasonable anticipation of the viewing public's perception.	Cumulative Impacts Unlikely to Occur (1 point)
VIEWER SENSITIVITY	
1. What is the potential that the project proposal will be controversial within the community, or opposed by any organized group? This can be researched initially by talking with Caltrans and local agency management and staff familiar with the affected community's sentiments as evidenced by past projects and/or current information.	Low Potential (1 point)
2. How sensitive are potential viewer-groups likely to be regarding visible changes proposed by the project? Consider among other factors the number of viewers within the group, probable viewer expectations, activities, viewing duration, and orientation. The expected viewer sensitivity level may be scoped by applying professional judgment, and by soliciting information from other Caltrans staff, local agencies and community representatives familiar with the affected community's sentiments and demonstrated concerns.	Select a Response (Score)

3. To what degree does the project's aesthetic approach appear to be consistent with applicable laws, ordinances, regulations, policies or standards? Although the State is not always required to comply with local planning ordinances, these documents are critical in understanding the importance that communities place on aesthetic issues. The Caltrans Environmental Planning branch may have copies of the planning documents that pertain to the project. If not, this information can be obtained by contacting the local planning department. Also, many local and state planning documents can be found online at the California Land Use Planning Network.	High Compatibility (1 point)
4. Are permits going to be required by outside regulatory agencies (i.e., Federal, State, or local)? Permit requirements can have an unintended consequence on the visual environment. Anticipated permits, as well as specific permit requirements - which are defined by the permitter, may be determined by talking with the project Environmental Planner and Project Engineer. Note: coordinate with the Caltrans representative responsible for obtaining the permit prior to communicating directly with any permitting agency.	Yes (3 points)
5. Will the project sponsor or public benefit from a more detailed visual analysis in order to help reach consensus on a course of action to address potential visual impacts? Consider the proposed project features, possible visual impacts, and probable mitigation recommendations.	No (1 point)
Calculate Total It is recommended that you print a copy of these calculations for the project file.	
PROJECT SCORE: 9	

Select An Outline Based Upon Project Score

The total score will indicate the recommended VIA level for the project. In addition to considering circumstances relating to any one of the ten questions-areas that would justify elevating the VIA level, also consider any other project factors that would have an affect on level selection.

SCORE 6-9

No noticeable physical changes to the environment are proposed and no further analysis is required. Print out a copy of this completed questionnaire for your project file or Preliminary Environmental Study (PES).

SCORE 10-14

A brief Memorandum (see sample) addressing visual issues and providing a rationale for why no formal analysis is required.

SCORE 15-19

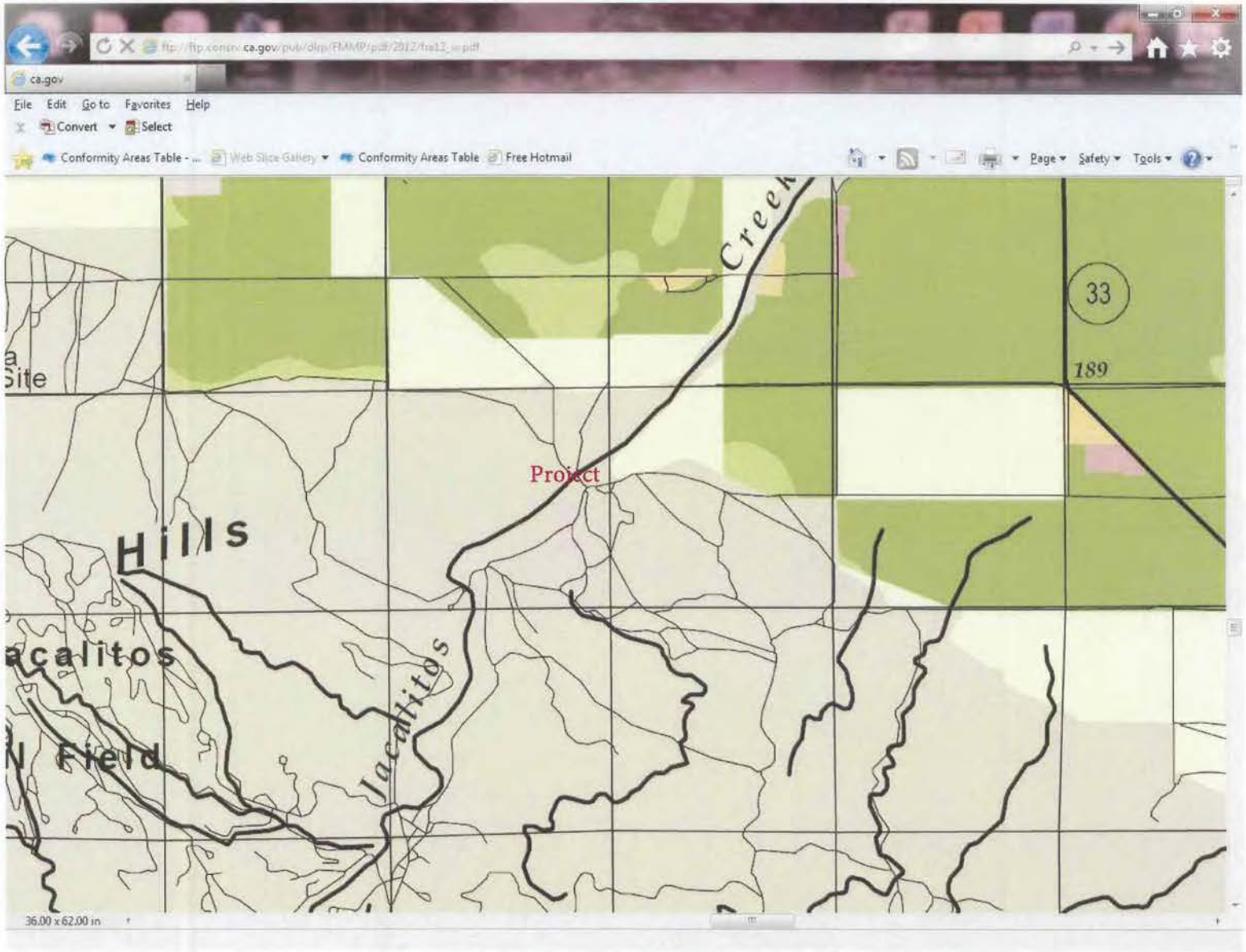
An abbreviated VIA is appropriate in this case. The assessment would briefly describe project features, impacts and any avoidance and minimization measures. Visual simulations would be optional. Go to the Directions for using and accessing the VIA Annotated Outlines.

SCORE 20-24

A fully developed VIA is appropriate. This technical study will likely receive public review. Go to the Directions for using and accessing the VIA Annotated Outlines.

SCORE 25-30

A fully developed VIA is appropriate that includes photo simulations. It is appropriate to alert the Project Development Team to the potential for highly adverse impacts and to consider project alternatives to avoid those impacts. Go to the Directions for using and accessing the VIA Annotated Outlines.


ca.gov
File Edit Go to Favorites Help
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Conformity Areas Table - ...
Web Slice Gallery
Conformity Areas Table
Free Hotmail
Page Safety Tools
Creek
33
189
Project
Hills
acalitos
N Field
Jacalitos
36.00 x 62.00 in

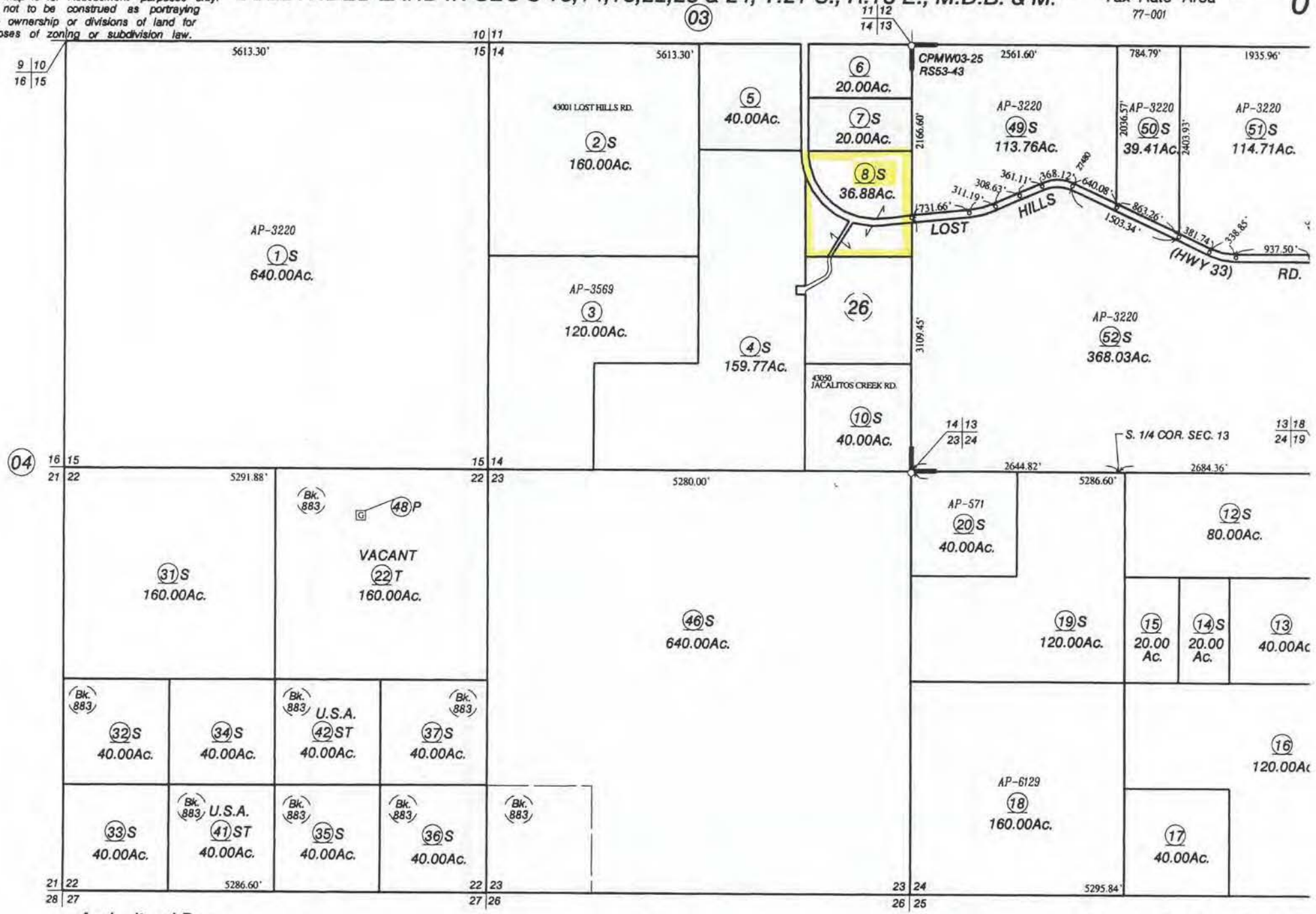
--- NOTE ---

This map is for Assessment purposes only. It is not to be construed as portraying legal ownership or divisions of land for purposes of zoning or subdivision law.

SUBDIVIDED LAND IN SEC'S 13,14,15,22,23 & 24, T.21 S., R.15 E., M.D.B. & M.

Tax Rate Area 77-001

0



Agricultural Preserve

Certificate of Parcel Map Waiver No. 03-25, Doc. 23547, 2-15-08

Record of Survey - Bk. 53, Pg. 43

NOTE - Assessor's Block Numbers Shown in Ellipses.
Assessor's Parcel Numbers Shown in Circles.

Assessor's Map Bk. 083
County of Fresno, Cali

1-26-2012 RKV

APPENDIX C

PHOTO LOG

Initial Site Assessment – Haro Environmental, Inc.
Jacalitos Creek Bridge, Fresno County, CA
Date Photos Taken: July 2, 2015

Photo #1 View of Jacalitos Creek Bridge and Lost Hills Road, facing north.

Photo #2 View of the Jacalitos Creek Bridge and Lost Hills Road, facing west.

Photo #3 View of north side of the Jacalitos Creek Bridge, facing southeast.

Photo #4 View of south side of Jacalitos Creek Bridge, facing northeast.

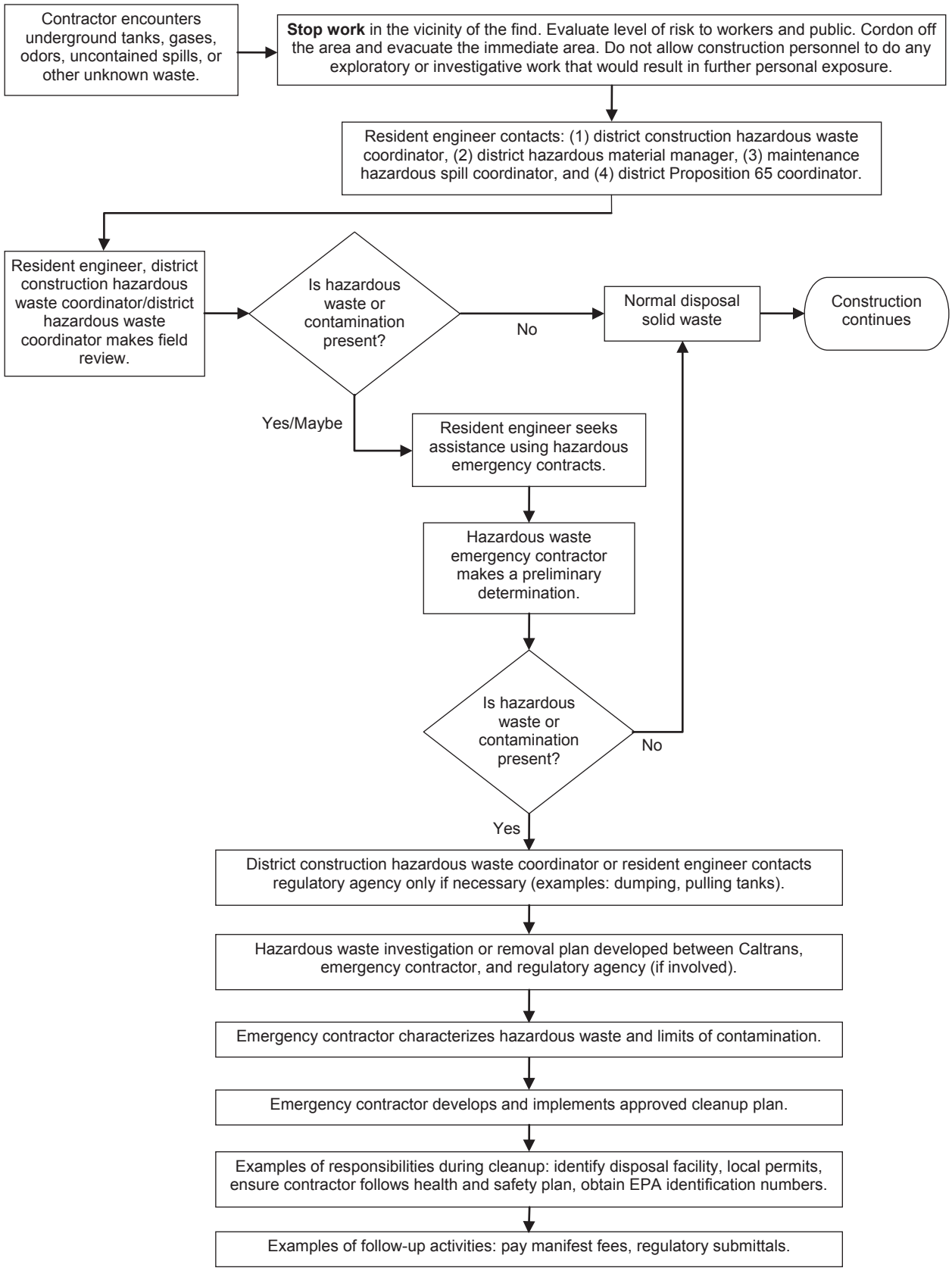
Photo #5 View below Jacalitos Creek Bridge, facing east.

Photo #6 View of the bottom of Jacalitos Creek Bridge, facing northwest.

APPENDIX D

CALTRANS UNKNOWN HAZARDS PROCEDURES

Figure 7-1.1. Unknown Hazards Procedure



APPENDIX E

QUALIFICATIONS

ELLIOT R. HARO
Principal Scientist

Mr. Haro is the founding principal of Haro Environmental, Inc. With over 14 years of experience in the environmental field, Mr. Haro has directed, managed and performed environmental site assessments and remediation activities. Mr. Haro's project management experience includes proposal and cost estimate preparation for site assessments and remediation projects, design of soil and groundwater remediation systems, in-house staff and subcontractor coordination, technical report preparation, and permit acquisition. Mr. Haro has managed and performed numerous Phase I and Phase II Environmental Site Assessments (ESAs) as well as site investigation and remediation field activities including air, soil, groundwater, and surface water sampling, groundwater monitoring well installations, and remediation system operations and maintenance. He has prepared various environmental reports including site assessment reports, feasibility studies, remedial/corrective action plans, remedial work plans and health-based risk evaluations. Mr. Haro is familiar with the regulatory process and has consulted with both local and regional agencies on Client's behalf for work plan approvals and modifications. Mr. Haro's technical expertise includes evaluation, design and implementation of innovative in-situ groundwater treatment technologies including enhanced bioremediation and in-situ chemical oxidation.

EXPERTISE

- Phase I and II Environmental Site Assessments
- Soil and Groundwater Investigations
- Soil and Groundwater Remediation
- Project Management
- Remediation Technology Evaluation
- Site Characterization
- Remediation System Operations and Maintenance
- Health Risk Evaluations
- Feasibility Studies
- Data Analysis and Management
- Construction Oversight
- Permitting – Environmental and Construction

WORK HISTORY

• Haro Environmental, Inc.	2013 to Present
• Equipoise Corporation	2007 to 2013
• Rincon Consultants, Inc.,	2004 to 2007
• TN & Associates	2003 to 2004
• Environmental Biotechnology Inst.	2002 to 2004
• Creek Environmental Laboratory	1999 to 2002

EDUCATION AND CERTIFICATIONS

- Registered Environmental Assessor I (REA I), California, No. 30228 (Former; DTSC discontinued the REA program effective July1, 2012)
- M.S., Agriculture – Soil Science Specialization, California Polytechnic State University, San Luis Obispo, CA
- B.S., Soil Science, California Polytechnic State University, San Luis Obispo, CA
- OSHA and EPA 40-hour safety training and 8-hour hazardous materials refresher courses

PROJECT DESCRIPTIONS

Retail Service Station Portfolio, Various Locations, CA

- Groundwater Monitoring and Sampling Management
- In-Situ Bioremediation
- Permitting
- Regulatory Agency Negotiations
- Quarterly Reporting
- Target compounds: Hydrocarbons and MTBE
- Interim Remedial Action Plans
- Remedial and Corrective Action Plans
- Health and Safety
- Remediation System Design
- Multiphase and Dual Phase Extraction Systems

Managed project activities for monitoring and cleanup of multiple gas station facilities throughout Northern, Central and Southern California. Evaluated in-situ and ex-situ treatment options for source zone reduction and off-site containment of contaminants. Performed and managed operations and maintenance activities on remediation systems and prepared quarterly remediation reports. Prepared quarterly groundwater monitoring reports for agency submittal and approval. Prepared corrective actions plans and remedial action plans for implementation of mobile high vacuum dual phase extraction, multi-phase extraction, and dual-phase extraction systems. Designed and permitted innovative groundwater remediation approaches including enhanced aerobic bioremediation using ORC®. Negotiated with overseeing agencies for acceptance of proposed remedial actions.

Phase I Environmental Site Assessment, Remediation Engineering Evaluation, & Indoor Air Quality Assessment, Former Aircraft Manufacturing Facility, Playa Vista, CA

- Phase I ESA
- Remediation System Performance Evaluation
- Historic Chlorinated VOC and Hydrocarbon Use
- 550,000 Square Feet of Building Space

Performed a Phase I ESA for an approximately 38-acre site developed with 8 historic structures totaling approximately 550,000 square feet. Historic aircraft manufacturing resulted in chlorinated VOCs and petroleum hydrocarbon impacts to soil and groundwater. Identified recognized environmental conditions (RECs) at 11 source areas. Consulted client on extent of environmental liabilities and potential

environmental costs. Evaluated the performance of the on-site dual-phase extraction system targeting identified source areas. Developed potential life-cycle costs for the existing remediation system, and costs for remediation of metals contaminated soil. Performed an indoor air survey to assess potential impacts from the historic aircraft manufacturing operations on indoor air quality. Indoor air study results were compared to published regulatory thresholds and calculated site-specific health risks.

Soil and Groundwater Remediation of Chlorinated Solvents using Chemical Oxidation, Former Aerospace Manufacturing Facility, Newbury Park, CA

- Groundwater Monitoring and Sampling Management
- In-Situ Chemical Oxidation using Potassium Permanganate
- Injection and Monitoring Well Installations
- Quarterly WDR Reporting
- Target compounds: Chlorinated VOCs
- Health and Safety Plan Preparation
- Lead Agency Negotiations

Managed in-situ chemical oxidation injections for remediation of soil and groundwater impacted with the chlorinated solvents TCE and PCE. Negotiated with the lead agency (LARWQCB) for revised Waste Discharge Requirements (WDR) and amendments to the original work plan. Developed and implemented a site-specific health and safety plan to protect the health and safety of workers and the environment from accidental exposure to the chemical oxidant. Oversaw the installation of 35 injection wells and 14 dual-nested monitoring wells, and the injection of approximately 12,000 pounds of potassium permanganate. Conducted performance evaluation sampling per WDR requirements, and prepared and submitted quarterly WDR monitoring reports to the regulatory agency.

Soil and Groundwater Remediation of Chlorinated Solvents, Soil Source Zone Removal and In-Situ Bioremediation, Former Industrial Facility, Los Angeles, CA.

- Groundwater Monitoring and Sampling Management
- Large Diameter Auger Excavation
- Enhanced Anaerobic Bioremediation
- Soil Vapor Survey
- Injection and Monitoring Well Installations
- Quarterly WDR Reporting
- Target compounds: Chlorinated VOCs
- Health and Safety Plan Preparation
- Lead Agency Negotiations

Managed soil and groundwater investigation and remediation activities for a site with soil and perched groundwater water zone with chlorinated hydrocarbons present. A Remedial Action Plan (RAP) was developed and approved by the LARWQCB to remediate soil and groundwater at the site. Because site constraints precluded the use of conventional excavation approaches without extensive shoring requirements, soil remediation activities included the design and implementation of source area soil removal using large diameter augers. Groundwater remediation activities included acquisition of a Waste Discharge Requirement (WDR) permit from the LARWQCB for injection of HRC® into the perched zone, injection design, and implementation of an Enhanced Anaerobic Biodegradation approach to stimulate by injecting HRC®.

RCRA Facility Closure, Former Hazardous Waste Handling Facility, Wilmington, CA

- Lead Agency: DTSC
- RCRA Hazardous Waste Permit Closure
- Port of Los Angeles Permitting
- Health and Safety Plan Preparation
- DTSC Approval of Work Plan Updates and Modifications

Managed work plan modification/updating and permitting for a closure of a RCRA hazardous waste permit under DTSC oversight. This former hazardous waste handling facility was the subject of an enforcement action by the lead regulatory agency and resulted in the conviction of the former operator. The chemicals associated with the facility included VOCs and petroleum hydrocarbons. Negotiated with DTSC for work plan modification resulting in a reduction of $70,000 in the sampling costs.

Feasibility Study, Former Aerospace Testing Facility, CA

- Chlorinated VOCs
- Emergent Compounds 1,4-dioxane and NDMA
- In-Situ and Ex-Situ Treatment Options
- Conforming to Lead Agency Requirements

Provided technical assistance for preparation of a feasibility study for remediation of a 2,800-acre former test site facility being closed after 50 years of storied operations. The feasibility study in part addressed the emergent chemicals 1,4-dioxane and N-nitrosodimethylamine (NDMA). These chemicals are somewhat recalcitrant in the environment and are the subject of research at many DOD-sponsored projects. Evaluated innovative remedial alternatives including enhanced aerobic bioremediation and in-situ chemical oxidation. Prepared a bench-scale work plan and reported the findings evaluating sodium persulfate and propane to reduce NDMA concentrations in groundwater.

Former Oil Field Sumps Assessment and Remediation, Santa Maria Valley, CA

- Sump Assessment and Remediation
- Remediation construction
- Target compounds: Metals, volatile and semi-volatile organics, hydrocarbons,
- Soil Excavation
- Health and Safety Plan Preparation

Project manager for sump assessment and remediation activities for multiple land leases within the Santa Maria Valley. Former oil field features were identified by reviewing historic maps and aerial photographs. The lateral and vertical limits of identified features were assessed in the field using direct push technology. Non-hazardous sump material was excavated and transported to a local landfill for reuse. Confirmation samples were collected and based on the results, closure reports were prepared and submitted to the lead oversight agency (County Santa Barbara Fire Prevention Division).

Operations and Maintenance, Ex-situ Bioremediation, San Luis Obispo, CA

- Groundwater monitoring well installation
- Groundwater sampling
- Remediation construction
- Vapor extraction system O&M
- Soil Excavation
- Field safety coordinator

Feasibility Study and Remedial Action Plan, Thousand Oaks, CA

- Project Coordinator
- Oversee field activities
- Permitting
- Conducted dual phase extraction events
- Managed and performed O & M

Site Investigations, Multiple Clients

- Oversee well installation
- Oversee boring installation
- Remediation construction
- Perform Monitoring and Optimization.
- Soil and Soil Vapor Sampling
- Risk Analysis
- Managed Subcontractors
- Construction

Publications

Roth, A. E., Lingle, E. L., Haro, E. R., Stark, J. M., Unkefer, P. J. and Kitts, C. L. 2005. *Sample Preservation Method and Storage Time Can Affect 16S rRNA Terminal Restriction Fragment Patterns Made From Soil DNA.* Soil Biology and Biochemistry.

TIMOTHY E. NELLIGAN
Principal Engineer

Mr. Nelligan has professional experience in the areas of environmental compliance, permitting, and remedial design engineering. He has conducted remedial investigations (RIs), feasibility studies (FSs), remedial design/remedial action (RD/RA), corrective action plans (CAPs) at several California State and Federal Superfund site, oil refineries, and other industrial facilities. He has also prepared Storm Water Pollution Prevention Plans (SWPPPs), Spill Prevention Containment and Countermeasures (SPCCs), Hazardous Materials Business Plans (HMBPs), and Wastewater Surcharge Statements. Mr. Nelligan has conducted various field activities including air, soil, groundwater, and surface water sampling; well design, installation, and development; and vapor extraction tests. He has designed, installed, operated, and conducted performance monitoring of in-situ and above ground soil-vapor extraction systems, and groundwater extraction and treatment systems. Mr. Nelligan has assisted in the design and implementation of innovative in situ technologies such as dual phase (air and groundwater) extraction, enhanced bioremediation using HRC and chemical oxidation systems using sodium permanganate to remediate sites. He has also designed vapor control systems for use in production facilities and assisted in managing a major coke disposal and lead fixation project.

EXPERTISE

- Project Management
- Soil and Groundwater Investigations
- Data Analysis and Management
- Remediation Technology Evaluation
- Engineering Design
- Construction Oversight
- Operation and Maintenance
- Cost Analysis
- Soil and Groundwater Remediation - Petroleum Hydrocarbons
- Soil and Groundwater Remediation - Metals
- Soil and Groundwater Remediation -Chlorinated Hydrocarbons
- Major Project Oversight
- Permitting - Environmental and Construction
- Feasibility Study/RAP Preparation

WORK HISTORY

• Haro Environmental, Inc.	2013 to Present
• Katahdin Environmental	2007 to Present
• Equipoise Corporation	1999 to 2007
• Harding Lawson Associates	1998 to 1999
• Chemical Data Management Systems	1997 to 1998

EDUCATION AND CERTIFICATIONS

- Registered Professional Engineer, California 2005, No. C68666
- B.S., Civil and Environmental Engineering, California Polytechnic State University, San Luis Obispo, 1998
- OSHA and EPA 40-hour safety training and 8-hour hazardous materials refresher courses

PROJECT DESCRIPTIONS

Superfund Site, Pesticide Reformulator, Bakersfield, CA

- Design Engineer
- Design Treatment System
- 250,000 Gal Wastewater and 4,000 Gal Sludge
- Oversee Treatment of Tank Contents
- Pesticides, Metals, and Semi-volatiles
- Lead Agency: US EPA

Soil remediation and FHP recovery system operation, Marine Terminal, Los Angeles Harbor, CA.

- Project Engineer
- Free Hydrocarbon Product (FHP)
- Petroleum Hydrocarbons/ BTEX in soil and groundwater
- MTBE in groundwater
- Lead in soil
- SVE with Offgas Treatment
- Thermal Oxidation of Offgas
- FHP Recovery with Pneumatic Pumps in 40 wells
- On-Site Soil Fixation of Lead
- Lead Agency: RWQCB – Los Angeles
- SCAQMD Compliance
- Recovered over 355,200 gallons of FHP to date.

Soil and Groundwater Remediation of Solvents. Excavation and InSitu BioRemediation, Former Dean Alco Site, Los Angeles, CA

- TCE and 1,1,1-TCA Source Area
- Soil Remediation through Excavation using Large Diameter Augers
- Source Area Tank Removal
- Perched Groundwater Remediation using HRC
- Implementation of InSitu BioRemediation Monitoring Program
- Permitting – Waste Discharge Requirement, Grading Permit, UST Removal Permit
- Lead Agency: RWQCB – Santa Ana
- SCAQMD Compliance
- UST Closure – LA Fire Department
- Assistant Project Manager

Coke Removal and Groundwater Extraction System O&M, Oil Refinery, Torrance, CA –

- Assistant Program Manager
- Free Hydrocarbon Product (FHP)
- Petroleum Hydrocarbons/ BTEX in groundwater
- MTBE in groundwater
- Coke Material in Soil
- Offsite Disposal of 60,000 tons of Coke Material
- Groundwater Extraction of 1200 gallons per minute
- FHP Recovery with Pneumatic Pumps
- Lead Agency: RWQCB – Los Angeles
- SCAQMD Compliance
- Groundwater treatment using Envirex - Fluidized Bed Reactor

Groundwater Remediation Using In-Situ Chemical Oxidation, Dry Cleaning Facility, Washington

- PCE in formation water
- Formation – Fractured Bedrock
- MTBE in groundwater
- Sodium Permanganate Injections
- Feasibility Study
- Remedial Action Plan
- Lead Agency – Department of Ecology, WA

Jacalitos Creek Bridge Replacement on Lost Hills Road
Fresno County, California
Federal-Aid Project No. BRLO-5942(234)
Existing Bridge No. 42C0078

Location Hydraulic Study

Prepared for:

THE COUNTY OF FRESNO 1856 and T·Y·LIN INTERNATIONAL

Prepared by:

WRECO

March 2018

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Jacalitos Creek Bridge Replacement on Lost Hills Road
Fresno County, California
Federal-Aid Project No. BRLO-5942(234)
Existing Bridge No. 42C0078

Location Hydraulic Study

Submitted to:
Fresno County Department of Public Works and Planning

This report has been prepared by or under the supervision of the following Registered Engineer. The Registered Civil Engineer attests to the technical information contained herein and has judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

Chris Sewell, P.E.
Registered Civil Engineer

03/12/2018
Date

March 2018

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Executive Summary

The purpose of the Jacalitos Creek Bridge Replacement Project on Lost Hills Road (Project) is to replace the structurally deficient existing Jacalitos Creek Bridge in Fresno County, California (County). This Project is funded by the federal Highway Bridge Program (HBP). Jacalitos Creek Bridge on Lost Hills Road serves as an overcrossing for Jacalitos Creek, a dry wash, which flows from west to east underneath the existing bridge. The Project includes replacement of the existing structurally deficient bridge and reconstruction of the bridge approaches, scour protection within the wash, and improvements to Lost Hills Road. The proposed bridge replacement is required to improve public safety.

The existing five-span bridge is proposed to be replaced with a 140-ft-long bridge with three spans. The proposed bridge geometrics provided by T.Y. Lin International were used for the hydraulic modeling for this study. The purpose of this Location Hydraulic Study is to examine and analyze the existing 100-year floodplains within the Project limits, to determine any potential impacts to or encroachments upon these floodplains resulting from the proposed action, and to recommend any mitigation that may be required to address the impacts.

WRECO developed a rainfall/runoff model to estimate the 100-year recurrence interval design discharge using the U.S. Army Corps of Engineers' (USACE) Hydrologic Engineering Center's Hydrologic Modeling System (HEC-HMS) software, and following the Soil Conservation Service (SCS) unit hydrograph method. The 100-year peak discharge using this method is 7,730 cubic ft per second (cfs). Floodplain boundaries are delineated on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) along Jacalitos Creek in the Project vicinity. The FIRM indicates that the Project is within the high-risk flood area, Zone A. Zone A represents areas that are subject to inundation by the 1% annual chance flood event (100-year flood), with no base flood elevations determined.

The hydraulic analysis was performed using the HEC-RAS steady state flow analysis. The results of the hydraulic analysis indicate a decrease in the backwater upstream of the bridge for the proposed condition because of the increased conveyance provided by the larger bridge opening. The design water surface elevations are presented in the following table.

100-Year Design Water Surface Elevations

Alternative	Water Surface Elevation (ft)	
	Upstream	Downstream
Existing	670.8	665.4
Proposed	666.9	665.4

The risk associated with the Project was assessed by evaluating whether the Project would result in changes to land use, changes in impervious surface, and added fill within the 100-year floodplain. The qualitative impacts resulting from the Project were assessed

by analyzing the hydraulics using HEC-RAS to compare the existing and proposed conditions.

Due to the nature of the work, the Project would not result in an overall change in land use within the watershed. The new bridge would result in added impervious areas. When compared to the total watershed of Jacalitos Creek at the Project site, the added impervious areas would be insignificant. There will be fill inside the floodplain with the placement of the new piers, abutments, and the associated fill and rock slope protection at the abutments. The hydraulic models of the existing and proposed conditions indicate that proposed conditions would result in decreases in backwater effects. While the base floodplain would overtop the existing bridge, the proposed bridge would be above the base floodplain. The risk associated with the Project is considered to be low.

Potential short-term adverse effects to the natural and beneficial floodplain values include temporary loss of vegetation from construction, potential effects to habitats within the Project area during construction and/or maintenance activities, and potential impacts to water quality. Temporary environmental impacts resulting from construction activities for the proposed Project can be minimized with standard measures such as revegetation, best management practices, seasonal work restrictions, implementation of erosion control measures, and other activities that meet the requirements of the Project permit conditions. With these proposed minimization measures, long-term adverse effects to the natural and beneficial floodplain values are not anticipated from the Project.

The County will coordinate with local, State, and Federal water resources and floodplain management agencies as necessary during all aspects of the proposed Project. The following regulatory permits and approvals would be required when the Project enters into the final design and construction phases: Section 404 Nationwide Permit from the USACE, a 401 Water Quality Certification from the Regional Water Quality Control Board, and a 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife.

Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ADT	average daily traffic
BFE	base flood elevation
BIR	Bridge Inspection Report
Caltrans	California Department of Transportation
CFR	Code of Federal Regulations
cfs	cubic feet per second
CIP/PS	cast-in-place prestressed
County	Fresno County
DOT	Department of Transportation
DWR	Department of Water Resources
ESRI	Environmental Systems Research Institute
FEMA	Federal Emergency Management Agency
FFRMS	Federal Flood Risk Management Standard
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
ft	foot, feet
HBP	Highway Bridge Program
HEC-HMS	Hydrologic Engineering Center's Hydrologic Modeling System
HEC-RAS	Hydrologic Engineering Center's River Analysis System
I-5	Interstate 5
LRFD	Load and Resistance Factor Design
mi	mile
NAD 83	North American Datum
NAVD 88	North American Vertical Datum of 1988
NFIP	National Flood Insurance Program
Project	Jacalitos Creek Bridge Replacement Project on Lost Hills Road
RS	river station
RSP	rock slope protection
SCS	Soil Conservation Service
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey

LOCATION HYDRAULIC STUDY FORM

Dist. 6 Co. Fresno Rte. Lost Hills Road Project ID
Federal-Aid Project Number: BRLO-5942(234)

Floodplain Description:
The FIRM indicates that the Project is within the high risk flood area Zone A. Zone A represents areas subject to inundation by the 1% annual chance flood event (100-year flood), with no base flood elevations determined.

1. Description of Proposal *(include any physical barriers i.e. concrete barriers, sound walls, etc. and design elements to minimize floodplain impacts)*
The existing five-span bridge will be replaced with a 140-ft-long, 31.5-ft-wide bridge with three spans.

2. ADT: Current (2009) 290 Projected (2030) 425

3. Hydraulic Data: Base Flood Q100= 7,730 CFS
WSE100= 670.8 (existing), 666.9 (proposed) ft NAVD 88
The flood of record, if greater than Q100:
Q= N/A CFS WSE= N/A
Overtopping flood Q= N/A for proposed bridge CFS WSE= N/A for proposed bridge

Are NFIP maps and studies available? NO YES ✓

4. Is the highway location alternative within a regulatory floodway?
NO ✓ YES

5. Attach map with flood limits outlined showing all buildings or other improvements within the base floodplain.

Potential Q100 backwater damages:

A.	Residences?	NO ✓	YES
B.	Other Bldgs?	NO ✓	YES
C.	Crops?	NO ✓	YES
D.	Natural and beneficial Floodplain values?	NO ✓	YES

"Natural and beneficial flood-plain values" shall include but are not limited to fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, and groundwater recharge.

6. Type of Traffic:

A.	Emergency supply or evacuation route?	NO YES ✓
B.	Emergency vehicle access?	NO YES ✓
C.	Practicable detour available?	NO YES ✓
D.	School bus or mail route?	NO YES ✓

7. Estimated duration of traffic interruption for 100-year event hours: N/A

8. Estimated value of Q100 flood damages (if any) – moderate risk level.

A.	Roadway	$ N/A
B	Property	$ N/A
	Total	$ N/A

9. Assessment of Level of Risk
Low ✓
Moderate
High

For High Risk projects, during design phase, additional Design Study Risk Analysis may be necessary to determine design alternative.

LOCATION HYDRAULIC STUDY FORM cont.

Dist. 6 Co. Fresno Rte. Lost Hills Road P.M. _____
Federal-Aid Project Number: BRLO-5942(234)
Project ID _____ Bridge No. 42C0078 (existing and proposed)

PREPARED BY:

Signature:
I certify that I have conducted a Location Hydraulic Study consistent with 23 CFR 650 and that the information summarized in items numbers 3, 4, 5, 7, and 9 of this form is accurate.

_____ *Date* _____
District Hydraulic Engineer *(capital and 'on' system projects)*

_____ *Date* 03/12/2018
Local Agency/Consulting Hydraulic Engineer *(local assistance projects)*

Is there any longitudinal encroachment, significant encroachment, or any support of incompatible Floodplain development? NO ✓ YES _____

If yes, provide evaluation and discussion of practicability of alternatives in accordance with 23 CFR 650.113

Information developed to comply with the Federal requirement for the Location Hydraulic Study shall be retained in the project files.

I certify that item numbers 1, 2, 6 and 8 of this Location Hydraulic Study Form are accurate and will ensure that Final PS&E reflects the information and recommendations of said report:

_____ *Date* _____
District Project Engineer *(capital and 'on' system projects)*

_____ *Date* 3/14/2018
Local Agency Project Engineer *(local assistance projects)*

CONCURRED BY:
I have reviewed the quality and adequacy of the floodplain submittal consistent with the attached checklist, and concur that the submittal is adequate to meet the mandates of 23 CFR 650.

_____ *Date* _____
District Project Manager *(capital and 'on' system projects)*

_____ *Date* 3/14/18
Local Agency Project Manager *(Local Assistance projects)*

_____ *Date* 3/15/18
District Local Assistance Engineer *(or District Hydraulic Branch for very complex projects or when required expertise is unavailable. Note: District Hydraulic Branch review of local assistance projects shall be based on reasonableness and concurrence with the information provided).*

I concur that the natural and beneficial floodplain values are consistent with the results of other studies prepared pursuant to 23 CFR 771, and that the NEPA document or determination includes environmental mitigation consistent with the Floodplain analysis.

_____ *Date* 3/15/2018
District Senior Environmental Planner *(or Designee)*

Note: If a significant floodplain encroachment is identified as a result of floodplains studies, FHWA will need to approve the encroachment and concur in the Only Practicable Alternative Finding.

SUMMARY FLOODPLAIN ENCROACHMENT REPORT

Dist. 6 Co. Fresno Rte. Lost Hills Road K.P.
Federal-Aid Project Number *(Local Assistance)* BRLO-5942(234)
Project No.: C11109 Bridge No. 42C0078 (existing and proposed)

Limits: The new bridge will be at roughly the same alignment as the existing bridge, but it will be longer and wider than the existing bridge. Scour countermeasures will be included along the embankment slopes of the new bridge at the abutments.

Floodplain Description: The FIRM indicates that the Project is within the high risk flood area Zone A. Zone A represents areas subject to inundation by the 1% annual chance flood event (100-year flood) with no base flood elevations determined.

		No	Yes
1.	Is the proposed action a longitudinal encroachment of the base floodplain?	✓	
2.	Are the risks associated with the implementation of the proposed action significant?	✓	
3.	Will the proposed action support probable incompatible floodplain development?	✓	
4.	Are there any significant impacts on natural and beneficial floodplain values?	✓	
5.	Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.	✓	
6.	Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q).	✓	
7.	Are Location Hydraulic Studies that document the above answers on file? If not explain.		✓

PREPARED BY:

_____ *Date* _____
District Project Engineer *(capital and 'on' system projects)*

_____ *Date* 03/16/2018
Local Agency/Consulting Hydraulic Engineer *(local assistance projects)*

CONCURRED BY:

_____ *Date* _____
District Project Manager *(capital and 'on' system projects)*

_____ *Date* 3/15/18
District Local Assistance Engineer *(Local Assistance projects)*

I concur that impacts to natural and beneficial floodplain values are consistent with the results of other studies prepared pursuant to 23 CFR 771, and that the NEPA document or determination includes environmental mitigation consistent with the Floodplain analysis.

_____ *Date* 3/15/2018
District Senior Environmental Planner *(or Designee)*

Note: If a significant floodplain encroachment is identified as a result of floodplains studies, FHWA will need to approve the encroachment and concur in the Only Practicable Alternative Finding.

1 GENERAL DESCRIPTION

The purpose of the Jacalitos Creek Bridge Replacement Project on Lost Hills Road (Project) is to replace the structurally deficient existing Jacalitos Creek Bridge in Fresno County, California (County). This project is funded by the federal Highway Bridge Program (HBP).

1.1 Project Description

Jacalitos Creek Bridge on Lost Hills Road serves as an overcrossing for Jacalitos Creek, a dry wash, which flows from west to east underneath the existing bridge. The Project includes the replacement of the existing structurally deficient bridge and reconstruction of the bridge approaches, scour protection within the wash, and improvements to Lost Hills Road. The proposed bridge replacement is required to improve public safety.

1.2 Project Location

The Project site is located in Fresno County, California, on Lost Hills Road immediately west and north of the intersection with Jacalitos Creek Road, approximately 1.7 miles (mi) west of California State Route 33. The Project is located where Jacalitos Creek flows out of the Jacalitos Hills and Kreyenhagen Hills into the gently sloping floor of Pleasant Valley. The land adjacent to the Project is generally open rural area, which can be seen in Figure 1.

1.3 Existing Bridge

The existing Jacalitos Creek Bridge is a five-span, approximately 115-foot (ft)-long, 28.6-ft-wide (with two 13-ft-wide lanes) bridge which was lengthened in 1970. The existing structure consists of two structure types with the original three spans of simply supported untreated Douglas Fir Stringers with a cast-in-place (CIP) concrete deck on reinforced concrete, five-column bent type piers, and reinforced concrete strutted abutment. The remaining two spans consist of a continuous cast-in-place flat slab deck supported on reinforced concrete, three-column pile extension bents with a reinforced concrete diaphragm abutment. Bridge supports include driven steel H-piles at Abutment 1, driven concrete piles at Bents 2 and 3, and spread footings at Bents 4, 5, and 6. The existing bridge was photographed during the Project Team's field visit on April 30, 2015 Photo 1.

Following heavy rains in March and the first few days of April 1958, the Project site experienced high flows and flooding that caused pile bents 3 and 4 to settle, leading to up to 1.5 ft of settlement as measured from the bridge deck. The bents were repositioned and jacked up to grade. The bridge was partially replaced in 1962. The two southerly spans of original construction were replaced with a concrete slab bridge with concrete pile extensions. A photograph from May 1978 shows gabions with stone protecting the channel banks. Fresno County staff believes it was installed following the flood of 1969 (Randy Mapel, personal communication, May 4, 2015); however, the location(s) and extent of channel protection installed at that time are not known.

In 1983, it was noted that the embankment on the upstream side of Abutment 6 (easterly abutment) washed away, and two steel piles were exposed, resulting in the complete closure of the structure; the exact cause of the erosion was not mentioned. The erosion was subsequently backfilled and repaired.

In 1986, the slope paving and gabion on the upstream of Abutment 6 were undermined. In 1988, it was noted that the embankment at Abutment 6 was protected. However, in 1990, the channel was described as "undermining" the slope paving at Abutment 6, and protecting the slope paving was recommended again. Fresno County staff believes additional stone riprap was installed after the heavy storms of 1995, presumably to protect the roadway embankment from washout (Randy Mapel, personal communication, May 4, 2015).

1.4 Proposed Bridge

On October 20, 2015, WRECO prepared a "Geomorphology and Preliminary Hydraulics Study" memorandum to evaluate the existing condition of the Project site to determine an appropriate bridge span width and location and assess the potential risks associated with using the current bridge opening location for the proposed bridge with the existing system of armoring. Potential preliminary design alternatives were also discussed in the memorandum.

The dimensions and placement of the current proposed bridge was based in part on the recommendations in the "Geomorphology and Preliminary Hydraulics Study." Field observations made by the California Department of Transportation (Caltrans) Maintenance and Fresno County staff suggest that the current hydraulic opening is undersized and susceptible to overtopping, and the bridge may require relocation, lengthening, or raising to pass high flows and achieve a straighter flow alignment with upstream flow.

1.4.1 Bridge Location

The current bridge location has several benefits, when compared to relocation to the northwest for a straighter flow alignment with upstream flow. The location of the existing bridge appears to have been the dominant channel at Lost Hills Road since the original three crossings were constructed. Because the proposed bridge will not free-span the entire limits of lateral oscillation (i.e., meander belt), which is approximately 590 ft wide at Lost Hills Road, spanning the preexisting dominant channel(s) is preferred. In addition, the channel is incised upstream and downstream from the existing bridge, such that the alluvial fan now functions as a disconnected stream terrace rather than an overbank depositional environment; this effect has essentially locked the thalweg in place in the vicinity of the existing bridge. Because braided channels can change rapidly during flash flow events, an incised channel that directs a majority of flow beneath Lost Hills Road at a single location reduces the risk of new morphology from potentially threatening the roadway embankment or bridge structure. Lastly, moving the structure would require extensive grading and earthwork to realign the channel. Although possible and risky,

relocating the bridge structure and channel introduces the possibility of a washout if a large storm reworks the channel bed or bank morphology.

1.4.2 Bridge Length

To assess whether the proposed bridge is correctly sized for its current location from a geomorphic perspective, WRECO utilized morphological data to derive appropriate approximate bridge lengths to provide an order of magnitude estimation of potential bridge lengths.

Based on the geologic map of the Project site, the entire width of the dominant Jacalitos Creek channels is approximately 600 ft at Lost Hills Road. According to the soil map, the soil unit mapped as flooded occurs on bars and channels on floodplains, valleys, and alluvial fans, and is approximately 275 ft wide at Lost Hills Road. Using WRECO interpretation of fluvial geomorphology, the width of the low flow channel in the vicinity of the existing bridge varies, but stays between approximately 70 and 100 ft. A bridge of this length would be suitable for low-flow conditions, but would likely be undersized for heavier precipitation events.

Using the historical channel traces mapped using georeferenced aerial imagery, the meander belt of Jacalitos Creek at Lost Hills Road is approximately 590 ft wide. From a geomorphic perspective and utilizing pre-existing data and Project-specific interpretations, an appropriate bridge length for all flow conditions and channel migrations would appear to be on the order of hundreds of feet. More specifically, a bridge configuration approximately 275 to 600 ft long would be appropriate to cross Jacalitos Creek at this location in the watershed. However, this would be very impractical. By contrast, a bridge configuration with a 70- to 100-ft-wide opening would be appropriate for low-flow conditions; an opening of this size corresponds to the existing condition and proposed bridge design. On this basis, WRECO recommends increasing the length of the bridge to increase hydraulic capacity and to meet freeboard criteria.

1.4.3 Current Proposed Bridge Design

The proposed bridge is a cast-in-place prestressed (CIP/PS) three-span bridge that is 140 ft long and 31.5 ft wide (see Figure 2). The opening from the face of abutment to face of abutment is approximately 130 ft transverse to the direction of flow. Stream barbs will be included as part of the proposed design (see Figure 3) to address the erosion at the existing southeasterly abutment.

Figure 1. Project Location Map

Source: Environmental Systems Research Institute (ESRI)

Photo 1. Existing Jacalitos Creek Bridge

1.5 Channel Properties

Jacalitos Creek flows from southwest to northeast as it crosses Lost Hills Road. The Caltrans *Bridge Inspection Report* (BIR) dated May 9, 2013, for the Jacalitos Creek Bridge at Lost Hills Road, states that the channel is very wide and flat, and the bottom has been washed with sand and gravel. The channel upstream of Lost Hills Road is shown in Photo 2, and the channel downstream of Lost Hills Road is shown in Photo 3; these photos were taken during a site visit with the Project Team on April 30, 2015.

1.6 Purpose

The purpose of this Location Hydraulic Study is to examine and analyze the existing 100-year floodplains within the Project limits, to determine any potential impacts to or encroachments upon these floodplains resulting from the proposed action, and to recommend any mitigation that may be required to address the impacts.

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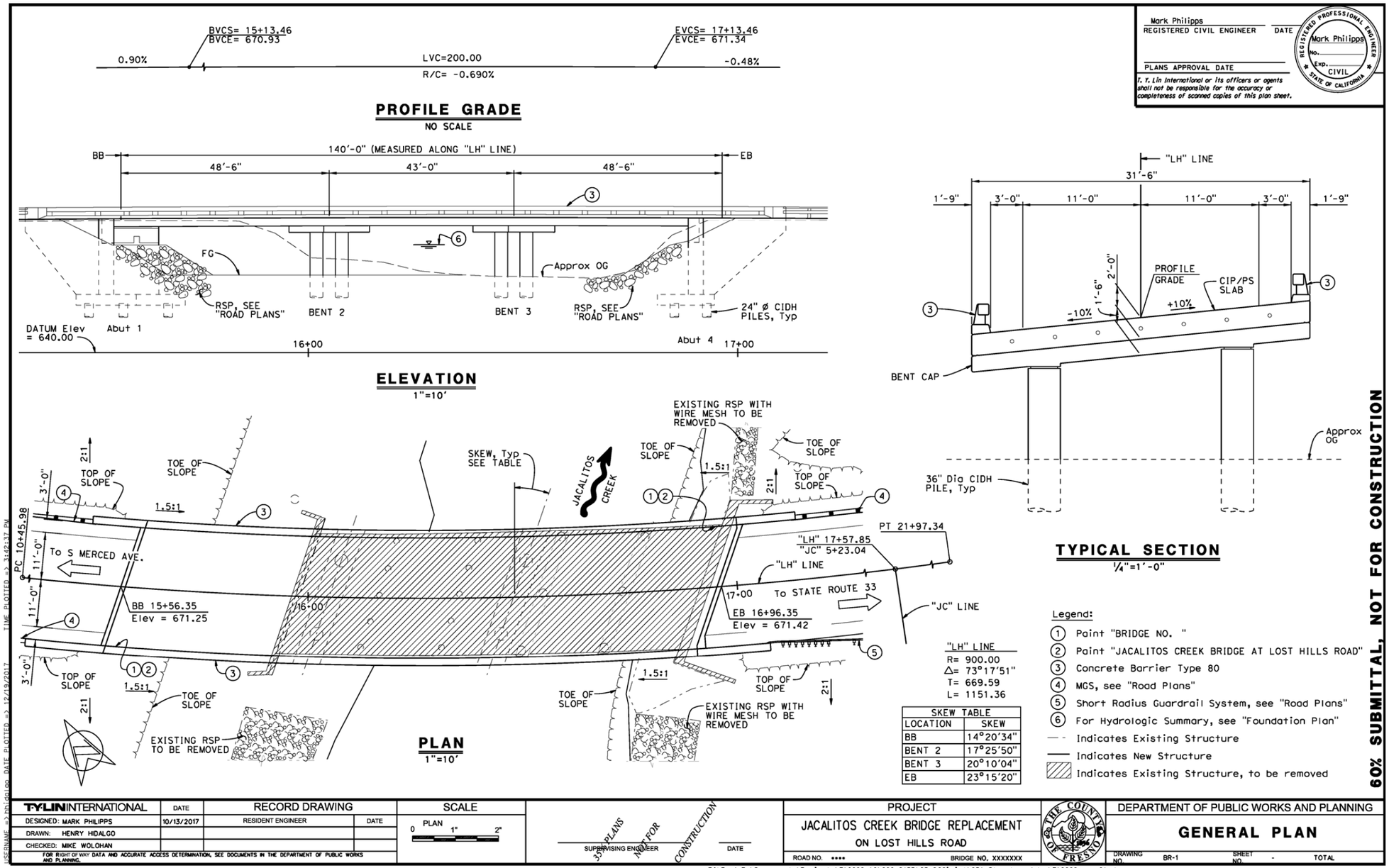
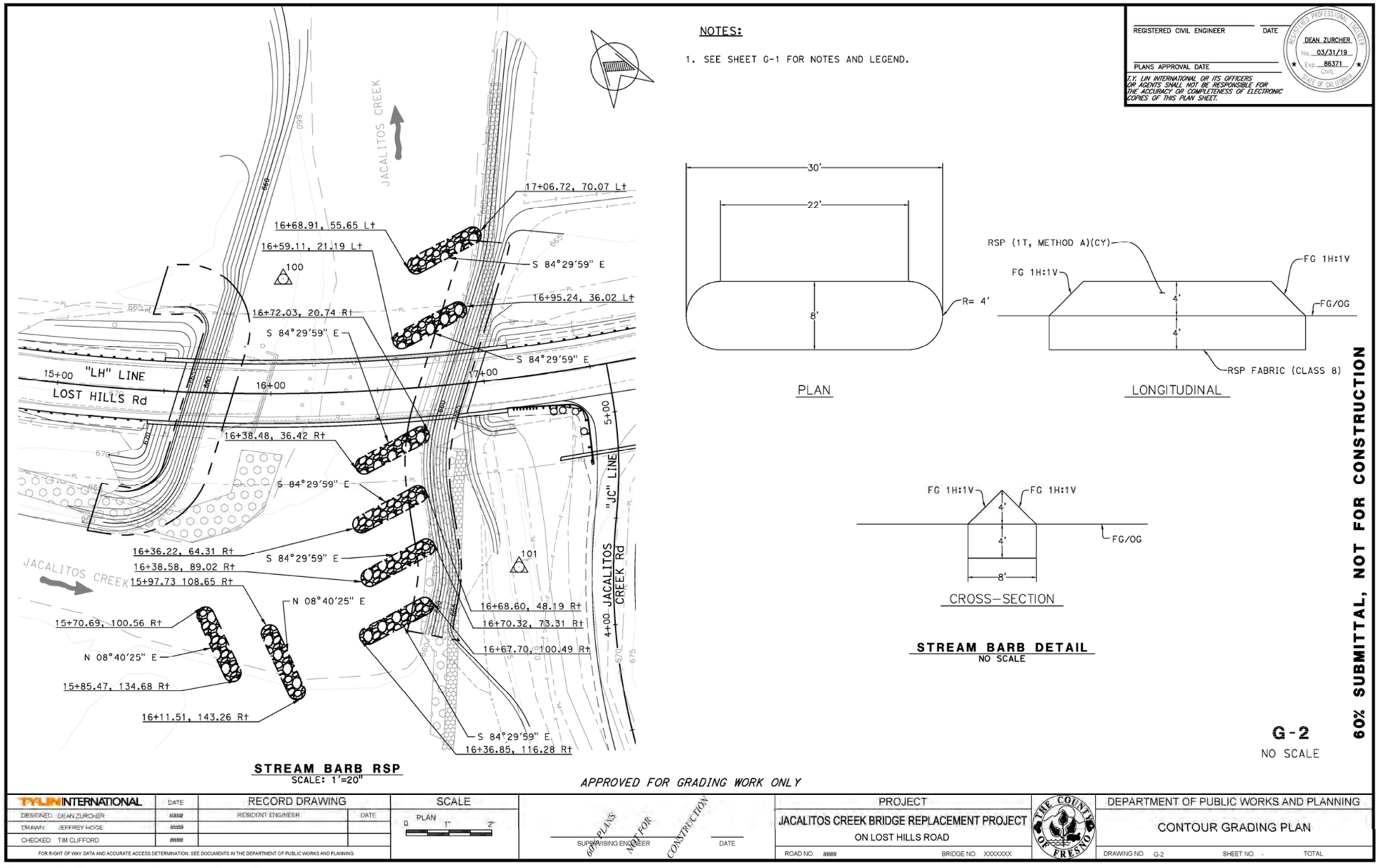


Figure 2. Proposed Bridge General Plan

Source: T.Y. Lin International



STREAM BARB RSP
SCALE: 1"=20'

NOTES:

1. SEE SHEET G-1 FOR NOTES AND LEGEND.

PLAN

LONGITUDINAL

CROSS-SECTION

STREAM BARB DETAIL
NO SCALE

REGISTERED CIVIL ENGINEER DATE
DEAN ZURCHER No. 86371 Exp. 03/31/19 CIVIL STATE OF CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER
PLANS APPROVAL DATE
T.Y. LIN INTERNATIONAL OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

60% SUBMITTAL, NOT FOR CONSTRUCTION

G-2
NO SCALE

APPROVED FOR GRADING WORK ONLY

T.Y.LIN INTERNATIONAL	DATE	RECORD DRAWING		SCALE		PROJECT		DEPARTMENT OF PUBLIC WORKS AND PLANNING
DESIGNED: DEAN ZURCHER	#####	RESIDENT ENGINEER	DATE	PLAN 0 1" 2"	60% PLANS NOT FOR CONSTRUCTION	JACALITOS CREEK BRIDGE REPLACEMENT PROJECT ON LOST HILLS ROAD	THE COUNTY OF FRESNO	CONTOUR GRADING PLAN
DRAWN: JEFFREY HOGE	#####				SUPERVISING ENGINEER DATE			
CHECKED: TIM CLIFFORD	#####					ROAD NO. ##### BRIDGE NO. XXXXXXX		DRAWING NO. G-2 SHEET NO. - TOTAL

FOR RIGHT OF WAY DATA AND ACCURATE ACCESS DETERMINATION, SEE DOCUMENTS IN THE DEPARTMENT OF PUBLIC WORKS AND PLANNING.

Figure 3. Proposed Stream Barb Locations

Source: T.Y. Lin International

Photo 2. Upstream Channel Area of Jacalitos Creek (Facing W Lost Hills Road)

Photo 3. Jacalitos Creek Channel (Downstream of W Lost Hills Road)

1.7 Regulatory Setting

1.7.1 Executive Order 11988 (Floodplain Management, 1977)

Executive Order 11988 (Floodplain Management) directs all federal agencies to avoid, to the extent possible, long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Requirements for compliance are outlined in Title 23, Code of Federal Regulations, Part 650, Subpart A (23 CFR 650A) titled "Location and Hydraulic Design of Encroachment on Floodplains" (2015).

If the preferred alternative involves significant encroachment onto the floodplain, the final environmental document (final Environmental Impact Statement or finding of no significant impact) must include:

- The reasons why the proposed action must be located in the floodplain;
- The alternatives considered and why they were not practicable; and
- A statement indicating whether the action conforms to applicable state or local floodplain protection standards.

1.7.2 Executive Order 13690 (Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input)

The Federal Flood Risk Management Standard (FFRMS) is the national flood risk management standard established by Executive Order 13690 to be incorporated into existing processes used to implement Executive Order 11988. Executive Order 13690 amends "Executive Order 11988, Floodplain Management," and directs all federal agencies to avoid conducting, allowing, or supporting construction in the base floodplain. The executive order also directs federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by the floodplain. The floodplain elevation and flood hazard area should be the result of using a climate-informed science approach.

The FFRMS requires all future federal investments in and affecting floodplains to meet the level of resilience as established by the Executive Order 13690. The vertical flood elevation and corresponding horizontal floodplain determined using the approaches in the FFRMS establish the level to which a structure or facility must be resilient. This may include using structural or nonstructural methods to reduce or prevent damage; elevating a structure; or, where appropriate, designing it to adapt to, withstand, and rapidly recover from a flood event. The implementation of the Executive Order 13690 for floodplains gives agencies the flexibility to select one of the following approaches for establishing the flood elevation and hazard area used in siting, design, and construction:

- Use data and methods informed by best-available actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate-informed science;
- Build 2 ft above the 100-year (1%-annual-chance) flood elevation for standard non-critical projects, and 3 ft above the 100-year flood elevation for critical projects such as hospitals and evacuation centers;
- Build to the 500-year (0.2%-annual-chance) flood elevation; or
- Build to an elevation and flood hazard area that results from using any other method identified in an update to the FFRMS.

Executive Order 13690 is not a self-implementing requirement. Both the U.S. Department of Transportation (DOT) and the Federal Highway Administration (FHWA) have to take actions to update their procedures before they apply to FHWA projects. The U.S. DOT has been working on an implementation plan to comply with Executive Order 13690. However, no FHWA programs should deviate from the existing requirements (23 CFR 650A) until promulgation of any new/revised regulation, policies, and guidance for compliance with the Executive Order 13690.

On August 15, 2017, an Executive Order was signed revoking Executive Order 13690 in its entirety.

Therefore, the Project will continue to be compliant with FHWA regulations contained in 23 CFR 650A, "Location and Hydraulic Design of Encroachments on Flood Plains." These regulations are the FHWA's current method for implementing the Executive Order 11988, which relates to Floodplain Management.

1.7.3 California's National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) is the nationwide administrator of the National Flood Insurance Program (NFIP), which is a program that was established by the National Flood Insurance Act of 1968 to protect lives and property, and to reduce the financial burden of providing disaster assistance. Under the NFIP, FEMA has the lead responsibility for flood hazard assessment and mitigation, and it offers federally backed flood insurance to homeowners, renters, and business owners in communities that choose to participate in the program. FEMA has adopted the 100-year floodplain as the base flood standard for the NFIP. FEMA is also concerned with construction that would be within a 500-year floodplain for proposed projects that are considered "critical actions," which are defined as any activities where even a slight chance of flooding is too great. FEMA issues the Flood Insurance Rate Maps (FIRMs) for communities that participate in the NFIP. These FIRMs present delineations of flood hazard zones.

In California, nearly all of the State's flood-prone communities participate in the NFIP, which is locally administered by the California Department of Water Resources' (DWR) Division of Flood Management. Under California's NFIP, communities have a mutual agreement with the State and Federal government to regulate floodplain development according to certain criteria and standards, which is further detailed in the NFIP.

1.7.4 Fresno County Floodplain Data

As part of the NFIP, typically, each county (or community) has a Flood Insurance Study (FIS), which is used to locally develop FIRMs and base flood elevations (BFEs). The FIS for Fresno County, California and Incorporated Areas was researched for floodplain information for the Project. Fresno County's effective FIS, numbers 06019CV001C and 06019CV002C, were published January 20, 2016. The effective FIS does not contain any detailed hydrologic or hydraulic information for Jacalitos Creek.

1.8 Design Standards

1.8.1 FEMA Standards

FEMA standards are employed for design, construction, and regulation to reduce flood loss and to protect resources. Two types of standards are often employed: design criteria and performance standards.

A design criteria or specified standard dictates that a provision, practice, requirement, or limit be met; e.g., using the 1% flood and establishing floodway boundaries so as not to cause more than a 1-ft increase in flood stages.

A performance standard dictates that a goal is to be achieved, leaving it to the individual application as to how to achieve the goal; e.g., providing protection to the regulatory flood, keeping post-development stormwater runoff the same as pre-development, or maintaining the present quantity and quality of water in a wetland.

The 1% annual chance flood and floodplain have been adopted as a common design and regulatory standard in the United States. The NFIP adopted it in the early 1970s, and it was adopted as a standard for use by all federal agencies with the issuance of Executive Order 11988. States or local agencies are free to impose a more stringent standard within their jurisdiction.

1.8.2 Hydraulic Design Criteria

1.8.2.1 FHWA Standards

The FHWA criterion refers to the California Amendments to American Association of State Highway and Transportation Officials' (AASHTO) Load and Resistance Factor Design (LRFD) Bridge Design Specifications (2014), which indicates that the proposed bridge profile should provide adequate freeboard to pass anticipated drift for the 50-year design flood, to pass the 100-year base flood without freeboard, or the flood of record without freeboard, whichever is greater.

1.8.2.2 Caltrans Standards

The Caltrans criteria for the hydraulic design of bridges is that they be designed to pass the 2% probability of annual exceedance flow (50-year design discharge) or the flood of record, whichever is greater, with adequate freeboard to pass anticipated drift. Two feet of freeboard is commonly used in bridge designs. The bridge should also be designed to

pass the 1% probability of annual exceedance flow (100-year design discharge, or base flood). No freeboard is added to the base flood.

1.9 Traffic

The existing bridge is a local rural road with an average daily traffic (ADT) of 290 vehicles in 2009 and a projected ADT of 425 in 2030 (Caltrans 2013). Approximately 10% of the ADT is composed of truck traffic.

A summary of the current uses for the Lost Hills Road Bridge is provided below. Lost Hills Road is assumed to be an emergency supply and evacuation route. If Lost Hills Road is closed, the detoured traffic would experience an increase in travel time with 13.3 miles as the shortest detour route. During construction, the County anticipates utilizing an onsite detour northeast of the existing bridge to minimize impacts to the public. Lost Hills Road is considered to be an emergency vehicle access route as well as a school bus and mail route.

- Emergency supply or evacuation route Yes
- Emergency vehicle access Yes
- Practicable detour route Yes
- School bus or mail route Yes

1.10 Vertical Datum

The Project references the North American Vertical Datum of 1988 (NAVD 88).

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2 AFFECTED ENVIRONMENT

2.1 Geographic Location

The Project site is located approximately 4.5 mi east of West Elm Avenue and 11.7 mi west of Interstate 5 (I-5), southeast of the City of Coalinga in an unincorporated area of south Fresno County. The bridge is located at a latitude of 36°06'07.1" North and a longitude of 120°18'38.8" West North American Datum of 1983 (NAD 83). The Project site is within the Kreyenhagen Hills, California, United States Geological Survey (USGS) topographic quadrangle.

2.2 Watershed Description

Jacalitos Creek originates north of Andrews Peak in the Diablo Range of southern Fresno County. The southern edge of the watershed follows the Fresno/Monterey county line. Tributaries that contribute to the watershed include Salt Creek, Taylor Creek, and Jasper Creek. The contributing watershed for Jacalitos Creek at the Lost Hills Road bridge is approximately 62.3 square mi (see Figure 4). At the Project site, Jacalitos Creek flows from southwest to northeast. From the Project site, it continues flowing generally in the northeast direction for approximately 4.5 mi before joining with Los Gatos Creek.

2.3 FEMA Floodplains

The Project site is located within FIRM panel 06019C3400H for Fresno County, effective February 18, 2009 (FEMA). The area immediately south of the Project is located within FIRM panel 06019C3380H. The Fresno County FIRM indicates that the existing Jacalitos Creek bridge at Lost Hills Road is within an area classified by FEMA as Zone A, which is an area subject to inundation by the 1%-annual-chance flood (100-year flood, or base flood). The effective FIS for Fresno County does not contain detailed hydrologic or hydraulic information for Jacalitos Creek, and no BFEs or flood depths are shown on the FIRM. The approach roadway areas adjacent to the existing bridge are within an unshaded Zone X area, which represents areas that have a minimal flood hazard. Unshaded Zone X represents areas that are higher than the elevation of the 0.2%-annual-chance flood (500-year flood). See Figure 5 for the limits of the base floodplain in the Project vicinity. The FIRM panel covering the Project vicinity is included in Appendix A.

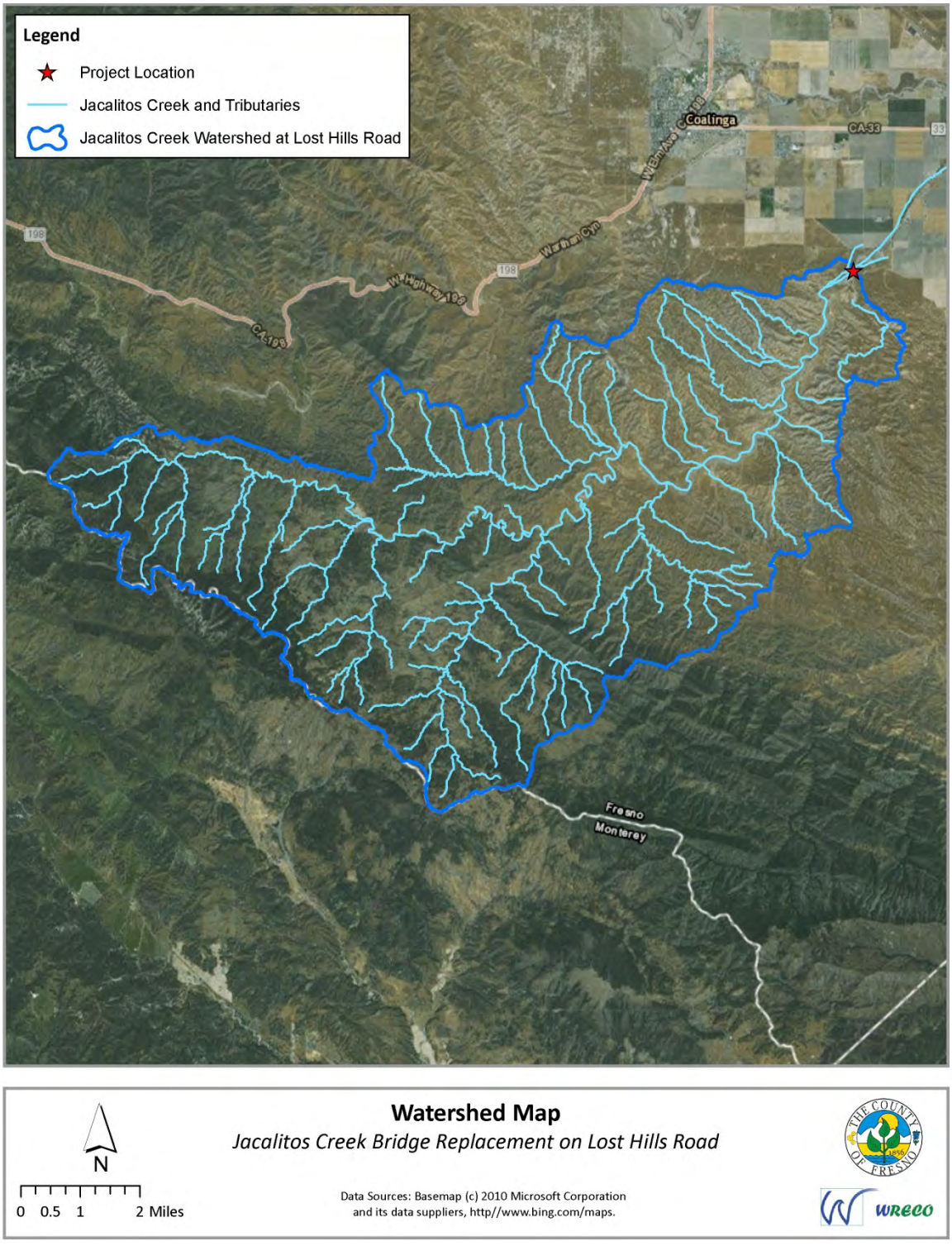

Figure 4. Watershed Map

Sources: USGS and ESRI

Figure 5. 100-Year Floodplain at the Project Vicinity

Sources: FEMA and ESRI

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3 HYDROLOGY AND HYDRAULICS

3.1 Hydrologic Assessment

On September 17, 2015, WRECO prepared a "Peak Design Flow Evaluation" memorandum to compare the methodologies used to evaluate the peak design flows for the Project. Various methods for estimating peak design flows for design of the bridge were utilized and compared because there are no known operational gaging stations along Jacalitos Creek. The methods used for the Project included the following:

1. USGS regional regression analysis;
2. A review of the *Final Hydraulic Report* for Jacalitos Creek Bridge No. 42 0441 (Caltrans 2013) for the State Route 33 bridge that is located downstream of the Project site;
3. A review of the effective FEMA FIS for Fresno County, California, and Incorporated Areas;
4. A review of USGS gaging stations in areas with similar conditions;
5. Development of a rainfall/runoff model using HEC-HMS; and
6. A comparison of the hydrologic analyses using a ratio between the 100-year flow and the drainage area of the respective watersheds.

The "Peak Design Flow Evaluation" memorandum is included in Appendix B, which describes the hydrologic calculation methodologies in greater detail.

3.2 Recommended Peak Design Discharge

WRECO developed a rainfall/runoff model to estimate the 100-year recurrence interval design discharges using HEC-HMS software, and following the Soil Conservation Service (SCS) unit hydrograph method. The peak discharge calculated using the rainfall/runoff model is recommended for use in the hydraulic analysis because the SCS unit hydrograph method provides a detailed analysis of the watershed. The 100-year peak discharge using this method is 7,730 cubic ft per second (cfs).

3.3 Hydraulic Assessment

A hydraulic model was developed using the HEC-RAS modeling software, Version 4.1.0, to assess the hydraulic characteristics of the existing bridge and assess the changes to the hydraulic characteristics based on the proposed bridge improvements.

Survey data from Fresno County were used to generate the channel and existing roadway and bridge geometries for the hydraulic model. Because the initial calculated design water surface elevations in the Project vicinity extended beyond the limits of the survey, additional elevation data were obtained from the USGS National Map Viewer to extend the cross sections to encompass the design water surface elevations. Figure 6 shows the locations of the cross sections used in the hydraulic model. The hydraulic model extends approximately 1,300 ft upstream of the bridge and 1,200 ft downstream of the bridge.

The cross section naming convention is by river station (RS), with the cross section number increasing in river station (measured in feet) going upstream. The cross sections are cut facing downstream (in a northerly direction).

The bridge is proposed to be longer than the existing bridge to meet design standards. Because the current bridge is located on the eastern edge of the historical channel meander belt, the lengthening is proposed at the western side of the bridge. The widening can be achieved only by expanding to the west of the existing bridge. The lengthening of the bridge would also involve removal of embankment slope at the western side of the bridge to allow flow to pass under the bridge. In the proposed condition, the channel at the western side of the bridge (between the proposed Abutment 1 and Bent 2) were graded as shown in the General Plan drawing (in Figure 2) to accommodate the lengthening associated with the proposed bridge. Stream barbs will be included as part of the proposed design to address the erosion at the existing southeasterly abutment. The stream barbs were modeled in HEC-RAS by modifying the cross sections based on the geometry of the stream barbs. Although there will not be stream barbs directly within, or underneath, the bridge, the internal bridge cross sections were also modified because of the proximity of the stream barbs to the bridge.

The geometry of the existing bridge in the hydraulic model is based on information from the Caltrans BIR and survey data provided by Fresno County. The proposed structural design and roadway profile for the replacement bridge are based on documents provided by T.Y. Lin International. The dimensions of the bridges are presented in Table 1. The hydraulic opening listed is the dimension from the face of abutment to face of abutment approximately transverse to the flow direction.

The potential for debris to impact the piers is accounted for in the hydraulic model by assigning a width and height of debris. Based on industry standards, the width is commonly taken as triple the width of the pier and is applied for the entire height of the pier. Because of the minimal vegetation in the upstream watershed, the debris blockage was reduced to 1.5 times the width of the piers. The piers for the existing bridge vary in width from 1to 2 ft, and the corresponding debris widths were modeled to be 1.5 ft and 3 ft, respectively. The piers for the proposed bridge are 3 ft wide, and the corresponding debris widths were modeled to be 4.5 ft. The pier widths assigned in the hydraulic model suggest that the piers are approximately aligned with the flow direction.

Table 1. Bridge Hydraulic Modeling Geometry

Alternative	Hydraulic Opening (ft)	No. of Spans	Pier Width (ft)	Debris Width (ft)
Existing	93	5	1 ft and 2 ft	1.5 ft and 3 ft
Proposed	130	3	3 ft	4.5 ft

Figure 6. Cross Section Locations

Source: ESRI

The effective FEMA FIS for Fresno County does not contain detailed hydrologic or hydraulic information for Jacalitos Creek. Because flood profiles and water surface elevations were not available for Jacalitos Creek within the Project vicinity, a normal depth slope was used as the downstream reach boundary condition. A slope of 0.004 ft/ft was estimated on the basis of the thalweg elevations from the Project's topographic survey of Jacalitos Creek in the vicinity of the existing bridge.

Manning's roughness coefficients were used in the hydraulic model to estimate energy losses in the flow due to friction. A roughness coefficient of 0.035 was used to describe the channel, and a roughness coefficient of 0.035 was used to describe the overbank areas. These values were selected on the basis of observations during a site visit on May 9, 2015. The channel and overbank areas are relatively clean with minimal vegetative growth (see Photo 1 and Photo 2). As seen in Photo 1, the channel is a very wide and flat wash with sand and gravel bottom. Photo 2 shows that there are scattered brush and stones along the banks. There is also rock slope protection (RSP) along the approach embankment fill slopes in the vicinity of the bridge.

Expansion and contraction coefficients were used in the hydraulic model to estimate hydraulic losses at transitions between cross sections. The expansion and contraction coefficients used in the channel were 0.3 and 0.1, respectively. These values represent a channel with gradual transitions between cross sections. The expansion and contraction coefficients used in the vicinity of the bridge were 0.8 and 0.6, respectively. These values represent the flow interference caused by the bridge and the abrupt transition just upstream of the bridge where the channel turns at a severe angle.

The water surface elevations at the locations just upstream and downstream of the bridges for the existing and proposed conditions are summarized in Table 2 for the 100-year peak flow. The water surface profiles along the studied stream reach are presented in Figure 7 for the 100-year storm. The cross sections at the upstream sides of the bridges are shown in Figure 8 for the existing bridge and Figure 9 for the proposed bridge.

Table 2. 100-Year Water Surface Elevations

Alternative	Water Surface Elevation (ft)	
	Upstream RS 1298.3	Downstream RS 1207.6
Existing	670.8	665.4
Proposed	666.5	665.4

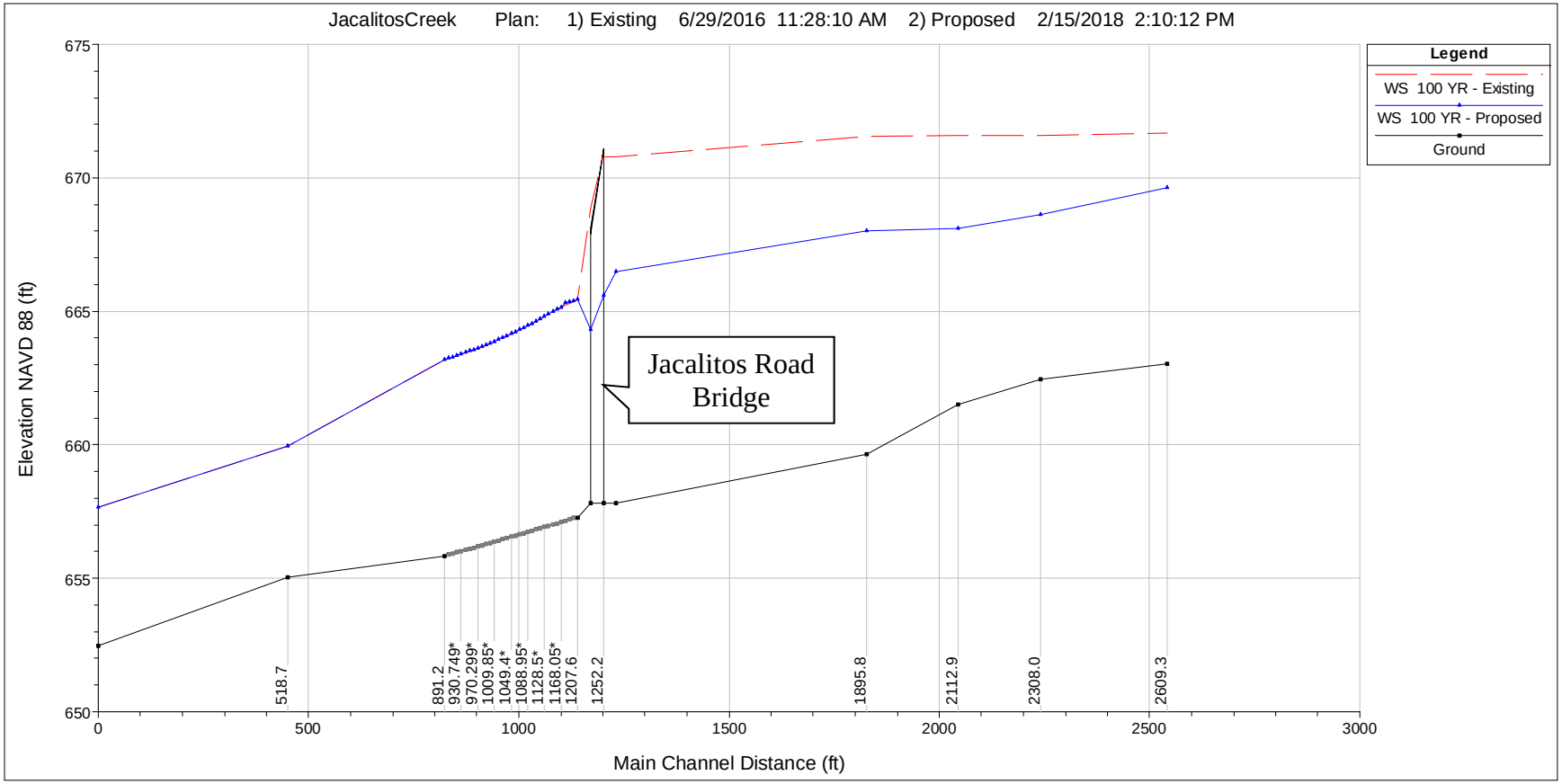

Figure 7. 100-Year Water Surface Profile

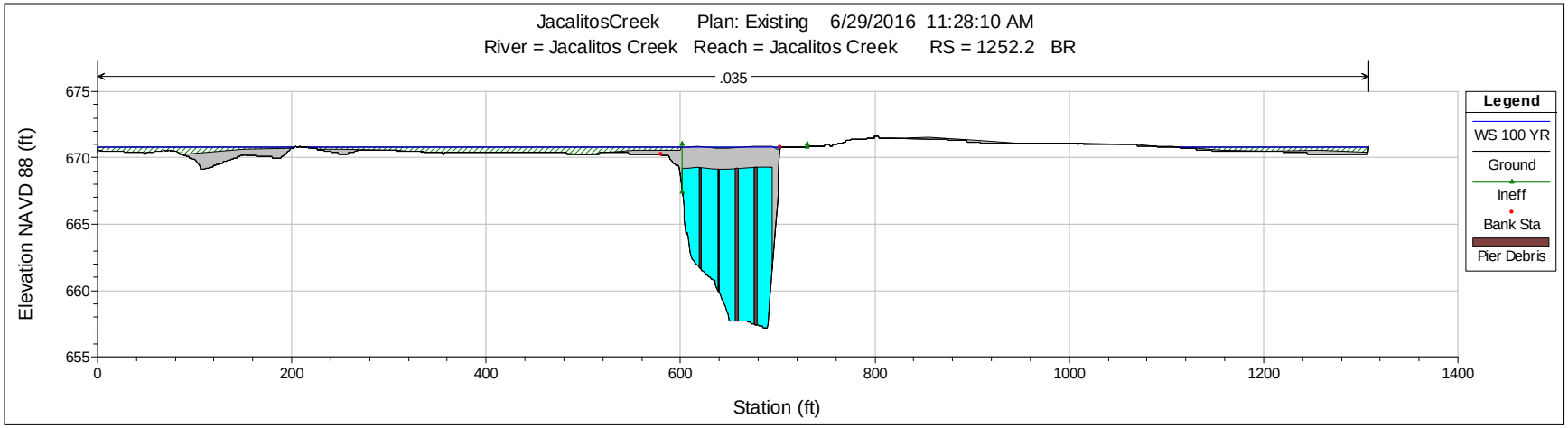

Figure 8. Upstream Face of Existing Bridge, Looking Downstream (North)

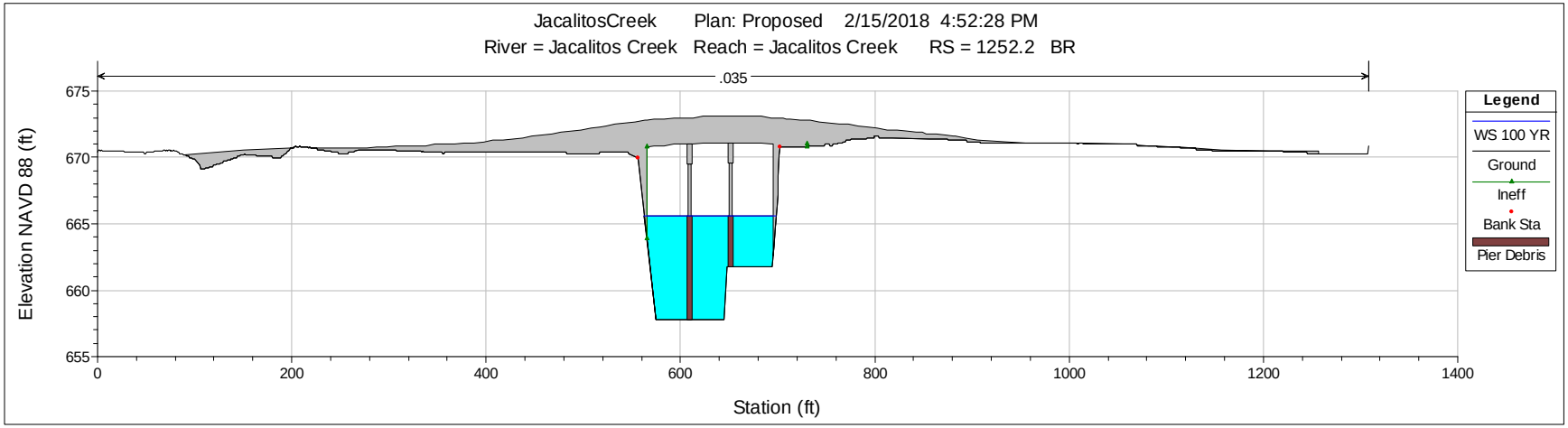

Figure 9. Upstream Face of Proposed Bridge, Looking Downstream (North)

The water surface elevations shown in the cross sections reflect the water surface elevations internally at the respective bridges. It should be noted that because of complexities associated with the cross sections and the minor reverse slope in the flowline profile at the bridge, the 100-year water surface elevations within the bridge were based on the momentum equation. This calculated water surface goes into supercritical, which does not match the downstream calculated water surface. Because of this, the 100-year calculated water surface elevations under the bridge should be disregarded. The water surface elevations presented in Table 2 reflect the values just upstream and downstream of the bridges, which were applied to determine the available freeboard for the structures. The results of the hydraulic modeling show a decrease in the backwater upstream of the bridge for the proposed condition because of the increased conveyance provided by the larger bridge opening.

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4 PROJECT EVALUATION

Executive Order 11988 requires federal agencies to avoid to the maximum extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. This section analyzes the impacts associated with this project.

4.1 Risk Associated with the Proposed Action

As defined by the FHWA, risk shall mean the consequences associated with the probability of flooding attributable to an encroachment. It shall include the potential for property loss and hazard to life during the service life of the bridge and roadway.

The potential risk associated with the implementation of the proposed action includes but is not limited to: 1) change in land use, 2) change in impervious surface area, 3) fill inside the floodplain, or 4) change in the 100-year water surface elevation. The measures to minimize the potential floodplain impacts associated with the action are summarized in Section 5.

4.1.1 Change in Land Use

The Project proposes to replace the existing bridge at an alignment similar to the location of the existing structure. Due to the nature of the work, the Project would not result in an overall change in land use within the watershed.

4.1.2 Change in Impervious Surface Area

The existing bridge is 115 ft long and 28.6 ft wide and the proposed bridge would be 140 ft long and 31.5 ft wide. The new bridge will be wider than the existing bridge with the new approach roadway conforming back to the existing roadway at the Project limits.

The Project would result in added impervious area of approximately 0.027 acres. The added impervious area resulting from the Project is unlikely to significantly impact the channel velocities or water surface elevation of Jacalitos Creek. The total watershed of Jacalitos Creek at the Project site is approximately 62.3 square mi. In comparison to the total watershed, the added impervious area associated with the Project would be insignificant.

4.1.3 Fill Inside the Floodplain

There will be fill inside the floodplain with the placement of the new bridge piers, abutments, and stream barbs. The embankment fill at the abutments will also include RSP. The new structure will consist of three spans supported on two piers. Each pier will consist of three 3-ft-diameter circular columns. The existing piers and existing superstructure will be removed. The current bridge structure is supported on four piers.

4.1.4 Change in the 100-Year Water Surface Elevation

The proposed bridge improvements were modeled to assess any potential impacts to hydraulics at the Project location. The results of the hydraulic analysis are described in Section 3.3. The hydraulic models of the existing and proposed conditions indicate that proposed condition would result in decreases in backwater effects. The risk associated with the Project is considered to be low.

4.2 Summary of Potential Encroachments

FHWA defines a significant encroachment as a highway encroachment, and any direct support of likely base floodplain development, that would involve one or more of the following construction or flood-related impacts: 1) significant potential for interruption or termination of a transportation facility that is needed for emergency vehicles or provides a community's only evacuation route, 2) a significant risk, or 3) a significant adverse impact on the natural and beneficial floodplain values (FHWA 1994). The following sections discuss the potential impacts to the floodplain that may result from the proposed action. The risk associated with implementation of the action is discussed in Section 4.1.

4.2.1 Potential Traffic Interruptions for the Base Flood

According to the existing conditions hydraulic model generated in support of this study, the 100-year water surface elevation is above the top of deck of the existing bridge with shallow flooding at the bridge and approach roadways. Therefore, the bridge as well as the approach roadways would be inundated during the base flood, causing traffic interruptions.

The minimum soffit elevation of the proposed bridge would be above the 100-year water surface elevation, and would have low potential for traffic interruptions due to the proposed action.

4.2.2 Potential Impacts on Natural and Beneficial Floodplain Values

Natural and beneficial floodplain values include, but are not limited to: fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, and groundwater recharge.

The Project will result in approximately 0.51 acres of temporary impacts and 0.15 acres of permanent impacts to waters of the U.S./State (Live Oak Associates 2017). Potential short-term adverse effects during the removal and replacement of the bridge to natural and beneficial floodplain values include: 1) loss of vegetation during construction activity including native and non-native grasses, herbs, and shrubs; 2) temporary disturbance to aquatic and/or wildlife habitat; and 3) impacts to water quality. The biological study area (BSA) provides potential habitat for special status plant species, special status animal species, and potential nesting habitat for migratory birds as identified in the *Natural Environment Study* (Live Oak Associates, Inc. 2017). Jacalitos

Creek falls under the jurisdiction of the USACE, Regional Water Quality Control Board, and the California Department of Fish and Wildlife.

The impacts to the natural and beneficial floodplain values are expected to be insignificant with measures to avoid, minimize, and restore and preserve the natural and beneficial floodplain values, as discussed in Section 5.2.

4.2.3 Support of Probable Incompatible Floodplain Development

As defined by the FHWA, the support of incompatible base floodplain development will encourage, allow, serve, or otherwise facilitate incompatible base floodplain development, such as commercial development or urban growth.

The existing bridge is currently located in a Zone A floodplain. The purpose of the Project is to replace the structurally deficient existing bridge with one that meets current standards. The Project would maintain local and regional access and would not create new access to developed or undeveloped land. The nature of the Project would not facilitate incompatible floodplain development.

4.2.4 Longitudinal Encroachments

As defined by the FHWA, a longitudinal encroachment is an action within the limits of the base floodplain that is longitudinal to the normal direction of the floodplain.

A longitudinal encroachment is “[a]n encroachment that is parallel to the direction of flow (e.g. A highway that runs along the edge of a river is usually considered a longitudinal encroachment).” The requirement for consideration of avoidance alternatives must be included in a Location Hydraulic Study by including an evaluation and a discussion of the practicability of alternatives to any significant encroachment or any support of incompatible floodplain development.

The alignment of the proposed bridge design would not result in a new longitudinal encroachment of the existing floodplain.

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5 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

5.1 Minimize Floodplain Impacts

Although new piers will be constructed as part of the new bridge structure, the removal of the existing bridge and the larger hydraulic opening of the new bridge will lower the base flood water surface elevation and lessen the backwater effects upstream of the bridge. The flooding condition would not worsen as a result of the Project. Additional minimization measures are not proposed for the Project.

5.2 Restore and Preserve Natural and Beneficial Floodplain Values

Temporary environmental impacts resulting from construction activities for the proposed Project can be minimized with standard measures such as revegetation, best management practices, seasonal work restrictions, implementation of erosion control measures, and other activities that meet the requirements of the Project permit conditions.

With these proposed minimization measures, long-term adverse effects to the natural and beneficial floodplain values are not anticipated from the Project.

5.3 Alternatives to Significant Encroachments

Because the proposed bridge does not constitute a significant encroachment to the floodplain, other alternatives were not considered.

5.4 Alternatives to Longitudinal Encroachments

The alignment of the proposed bridge would not result in a new longitudinal encroachment to the existing floodplain, and therefore, alternatives to longitudinal encroachments were not considered.

5.5 Coordination with Local, State, and Federal Water Resources and Floodplain Management Agencies

Fresno County will coordinate with local, State, and Federal water resources and floodplain management agencies as necessary during all aspects of the proposed Project. The following regulatory permits and approvals would be required when the Project enters into the final design and construction phases: Section 404 Nationwide Permit from the USACE, a 401 Water Quality Certification from the Regional Water Quality Control Board, and a 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife.

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Appendix A Federal Emergency Management Agency Flood Insurance Rate Maps

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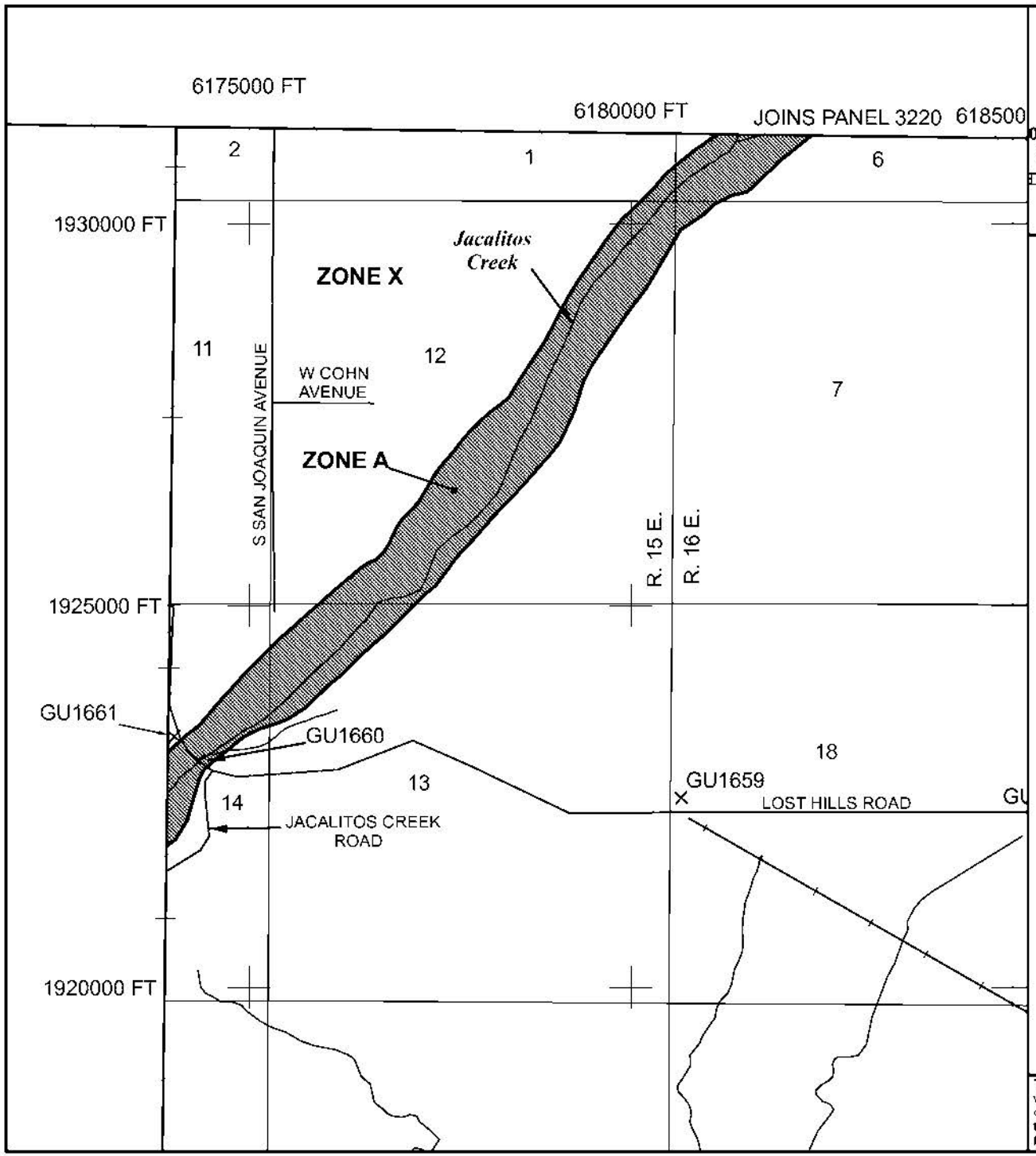

MAP SCALE 1" = 2000'

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METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3400H

FIRM

FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 3400 OF 3525

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
COALINGA CITY OF	060045	3400	H
FRESNO COUNTY	065029	3400	H

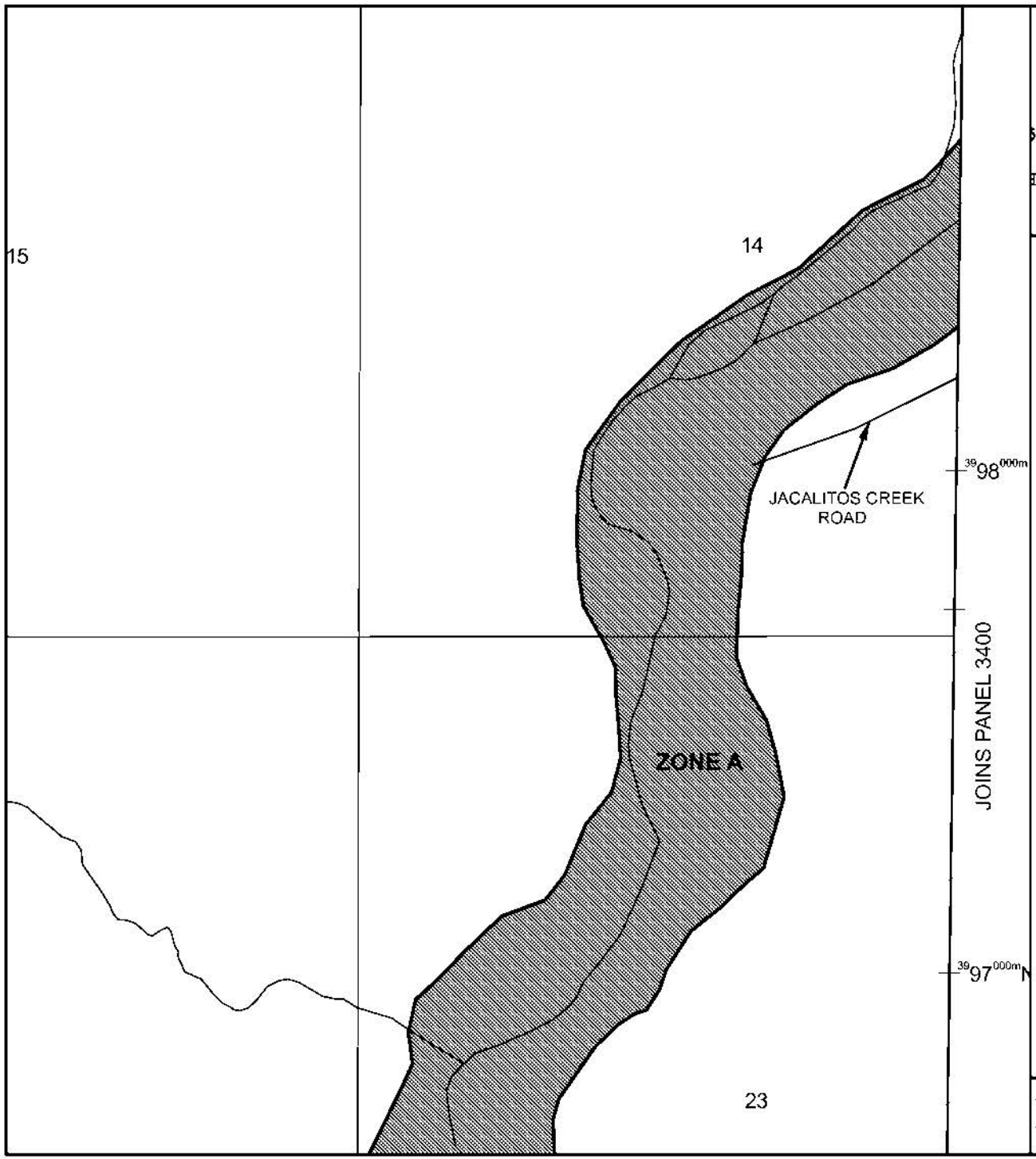
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C3400H

MAP REVISED
FEBRUARY 18, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3380H

FIRM

FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 3380 OF 3525

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
COALINGA, CITY OF	060045	3380	H
FRESNO COUNTY	065029	3380	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C3380H

MAP REVISED
FEBRUARY 18, 2009

Federal Emergency Management Agency

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Appendix B "Peak Design Flow Evaluation" Memorandum

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Memorandum

Date: September 17, 2015

To: Craig Chatelain and Michael Wolohan – TY Lin International

From: Chris Sewell and Wana Chiu – WRECO

Project: Jacalitos Creek Bridge Replacement on Lost Hills Road

Subject: Peak Design Flow Evaluation

INTRODUCTION

The purpose of this memorandum is to present the sources and methodologies used for the hydrologic study of the Jacalitos Creek Bridge Replacement on Lost Hills Road Project (Project). Various methods for estimating peak design flows for design of the bridge were utilized and compared because there are no known operational gaging stations along Jacalitos Creek. The methods used for the Project included the following:

1. USGS regional regression analysis
2. A review of the *Final Hydraulic Report* for Jacalitos Creek Bridge No. 42 0441 (California Department of Transportation [Caltrans] 2013) for the State Route 33 bridge that is located downstream of the Project site.
3. A review of the effective Federal Emergency Management Agency (FEMA) *Flood Insurance Study* (FIS) for Fresno County, California and Incorporated Areas
4. A review of United States Geological Survey (USGS) gaging stations in areas with similar conditions
5. Development of a rainfall/runoff model using the U.S. Army Corps of Engineers (USACE) Hydrologic Engineering Center's Hydrologic Modeling System (HEC-HMS)
6. A comparison of the hydrologic analyses using a ratio between the 100-year flow and the drainage area of the respective watersheds

UNITED STATES GEOLOGICAL SURVEY REGIONAL REGRESSION ANALYSIS

Flood-frequency equations have been developed by the USGS based on analysis of data from gage stations. California is divided into six regions; the Project site is within the Central Coast region. These flood-frequency equations are generally used to estimate stream flow for ungaged sites that are not affected by substantial urban development and that are natural (unregulated) streams.

On July 18, 2012, the USGS issued *Methods for Determining Magnitude and Frequency of Floods in California, Based on Data through Water Year 2006* (Gotvald et. al. 2012), which contains updated regional flood-frequency equations, and revised the boundaries of the six unique regions within California. These equations are based on annual peak-flow data through water year 2006 for 771

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streamflow-gaging stations in California having 10 or more years of data. The updated equations were used in support of the Project's hydrologic analysis.

The flood-frequency equations are as follows (Gotvald et. al., 2012):

$$Q_{100} = 11(DRNAREA)^{0.84}(PRECIP)^{0.994}$$
$$Q_{50} = 5.32(DRNAREA)^{0.84}(PRECIP)^{1.15}$$

Where:

Q_x =	peak discharge for a storm event with a return period of x years, cubic feet per second (cfs)
DRNAREA =	drainage area, square mi
PRECIP =	mean annual precipitation, in.

With a drainage area of 62.3 square mi and a mean annual precipitation of 13.2 in. (obtained from StreamStats), the design discharges were calculated as summarized in Table 1.

Table 1. Regional Regression Design Discharges at Project Site

Recurrence Interval (year)	Flow (cfs)
100	4,590
50	3,320

FINAL HYDRAULIC REPORT FOR JACALITOS CREEK BRIDGE NO. 42 0441 (CALTRANS 2013) FOR THE STATE ROUTE 33 (SR 33) BRIDGE

Caltrans' *Final Hydraulic Report* for the Jacalitos Creek Bridge at State Route 33 (September 17, 2013) notes that the watershed at the bridge site is approximately 64 square miles. The *Final Hydraulic Report* is included in Appendix A. The report confirms that there was no current information available from USGS stream gage data sources or the FEMA FIS. The FEMA FIS did contain the watershed area and design discharges for the nearby Warthan Creek. Warthan Creek is a tributary of Los Gatos Creek, and its watershed is located to the northwest, and immediately adjacent to, the Jacalitos Creek watershed. The watershed area encompasses approximately 116 square miles. Caltrans estimated the discharge rates for Jacalitos Creek (see Table 2) by correlating the FEMA discharges from Warthan Creek using a basin transfer method.

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Table 2. Flows for the Jacalitos Creek Bridge at State Route 33

Return Period	Design Discharge (cfs)
100-Year	5,200
50-Year	3,700

Source: Caltrans

FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE STUDY

The Project site is within Fresno County, California. The FEMA FIS for Fresno County, California and incorporated areas (effective date February 18, 2009) did not include design flow rates for Jacalitos Creek. Although the FIS did not include flow rates for Jacalitos Creek, the design flow rates for other watershed basins within Fresno County were evaluated to see if a general correlation could be made between the watershed drainage area and the 100-year flow rate. The peak discharge tables from the FIS are included in Appendix B. However, the watersheds included in the FEMA study within Fresno County had drainage areas that were either much smaller (less than 25 square miles) or much larger (greater than 100 square miles) than the watershed for Jacalitos Creek at the Project site. In general, the smaller watersheds had a much larger flow to drainage area ratio than the larger watersheds. Because the drainage areas for the watersheds included in the study were significantly smaller or larger than the watershed area for the Project site, a reasonable conclusion could not be determined from the available data.

UNITED STATES GEOLOGICAL SURVEY GAGING STATIONS

USGS gaging stations for Jacalitos Creek in California were not found. USGS gaging stations in the Project vicinity were examined (see Figure 1). Table 3 summarizes the drainage areas and flow rates for nearby gaging stations. Although these gaging stations are not located along Jacalitos Creek, they are along streams that have drainage areas of similar magnitude to the approximately 62.3 square mile drainage area for Jacalitos Creek at the Project site: two have drainage areas that are smaller than the drainage area for the Project site, and one has a drainage area that is larger than the drainage area for the Project site. The gaging stations are also located along the foothills, similar to the location of the Project site and are west of State Route 33. These flow estimates were based on historical peak stream flow data recorded at the gaging stations. The gaging station stream statistics are included in Appendix C.

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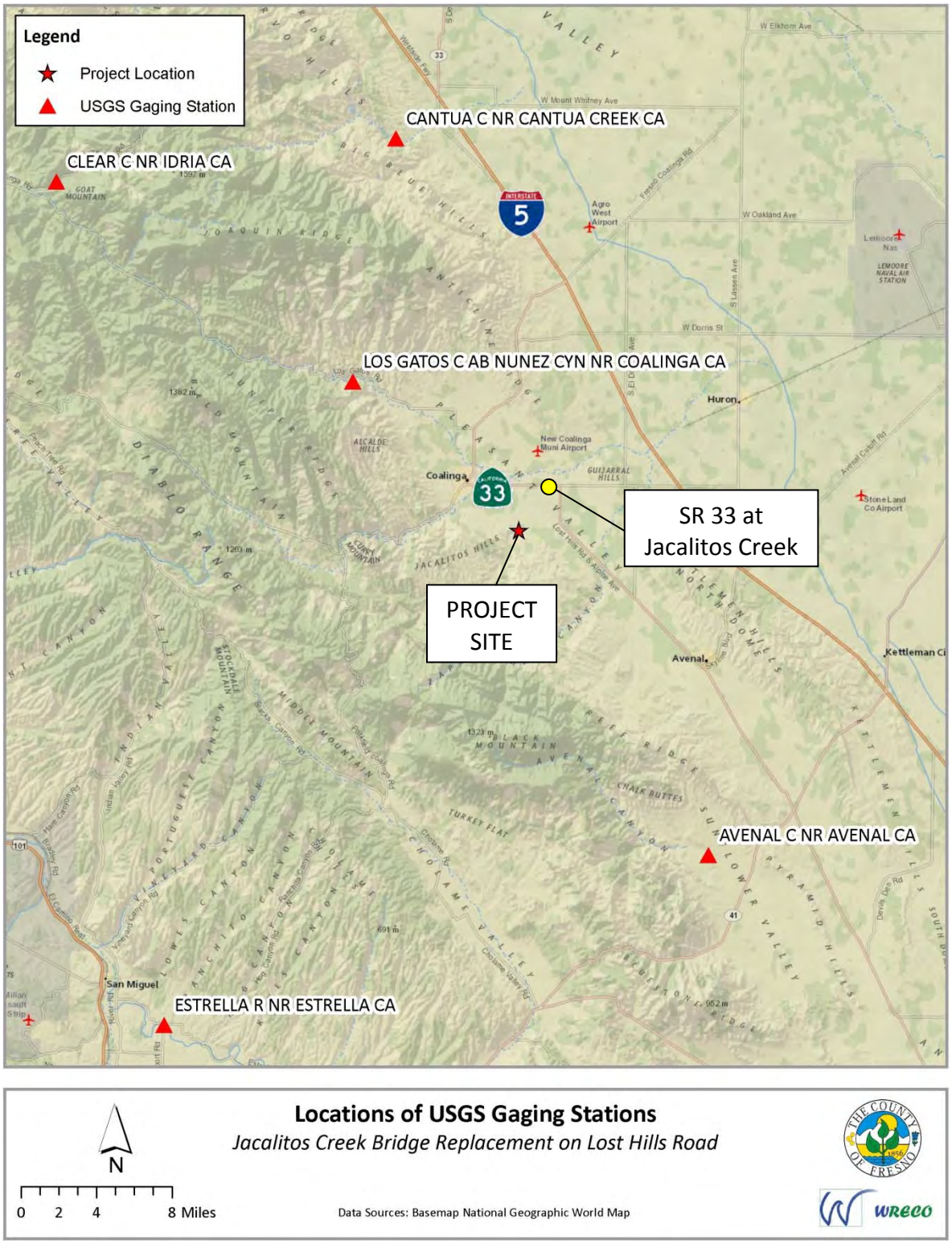

Figure 1. USGS Gaging Stations in the Project Vicinity

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Table 3. USGS Gaging Station Summary

USGS Gaging Station	Drainage Area (square mile)	100-Year Flow (cfs)
Cantua Creek NR Cantua Creek CA Station No. 11253310	46.4	5,460
Los Gatos Creek AB Nunez Cyn NR Coalinga CA Station No. 11224500	95.8	11,700
Avenal Creek NR Avenal CA Station No. 11197250	57.1	6,880

RAINFALL/RUNOFF MODEL

WRECO developed a rainfall/runoff model to estimate the 100- and 50-year recurrence interval design discharges using HEC-HMS software, and following the Soil Conservation Service's (SCS) Unit Hydrograph Method. The rainfall/runoff model simulates the rainfall/runoff process and generates discharge hydrographs. The input parameters were estimated following the procedures in Technical Release 55 (TR-55), the *Urban Hydrology for Small Watersheds* manual (Natural Resources Conservation Service [NRCS] 1986), *A Guide to Hydrologic Analysis Using SCS Methods* (McCuen 1982), and Chapter 810 from Caltrans' Highway Design Manual (2015). Some of the factors that will affect the runoff at the Project site include the watershed basin size, the slopes and elevations of the basin, the land uses, and the soils. The following sections describe the characteristics of the watershed that were used in the rainfall/runoff model of HEC-HMS to estimate the design discharges. It has four main components: rainfall, rainfall losses, transformation of effective rainfall, and channel routing.

The Project site drains a watershed area of approximately 62.3 square mi, which is shown in Figure 2. The watershed was divided into five subbasins. The flow for each of the watershed subbasins was calculated in the model using meteorological data by subtracting losses and transforming excess precipitation. The losses were calculated in HEC-HMS using the SCS Curve Number (CN) loss method and the excess precipitation was calculated in HEC-HMS using the SCS Unit Hydrograph transform method.

Rainfall

The NRCS has developed four synthetic 24-hour rainfall distributions to represent various regions of the United States: Type I, IA, II, and III. The rainfall distribution depends on the location. These rainfall distributions are used in lieu of actual storm events. The Project site is located within the Type I rainfall storm distribution region in California (see Appendix D for the NRCS storm distribution regions).

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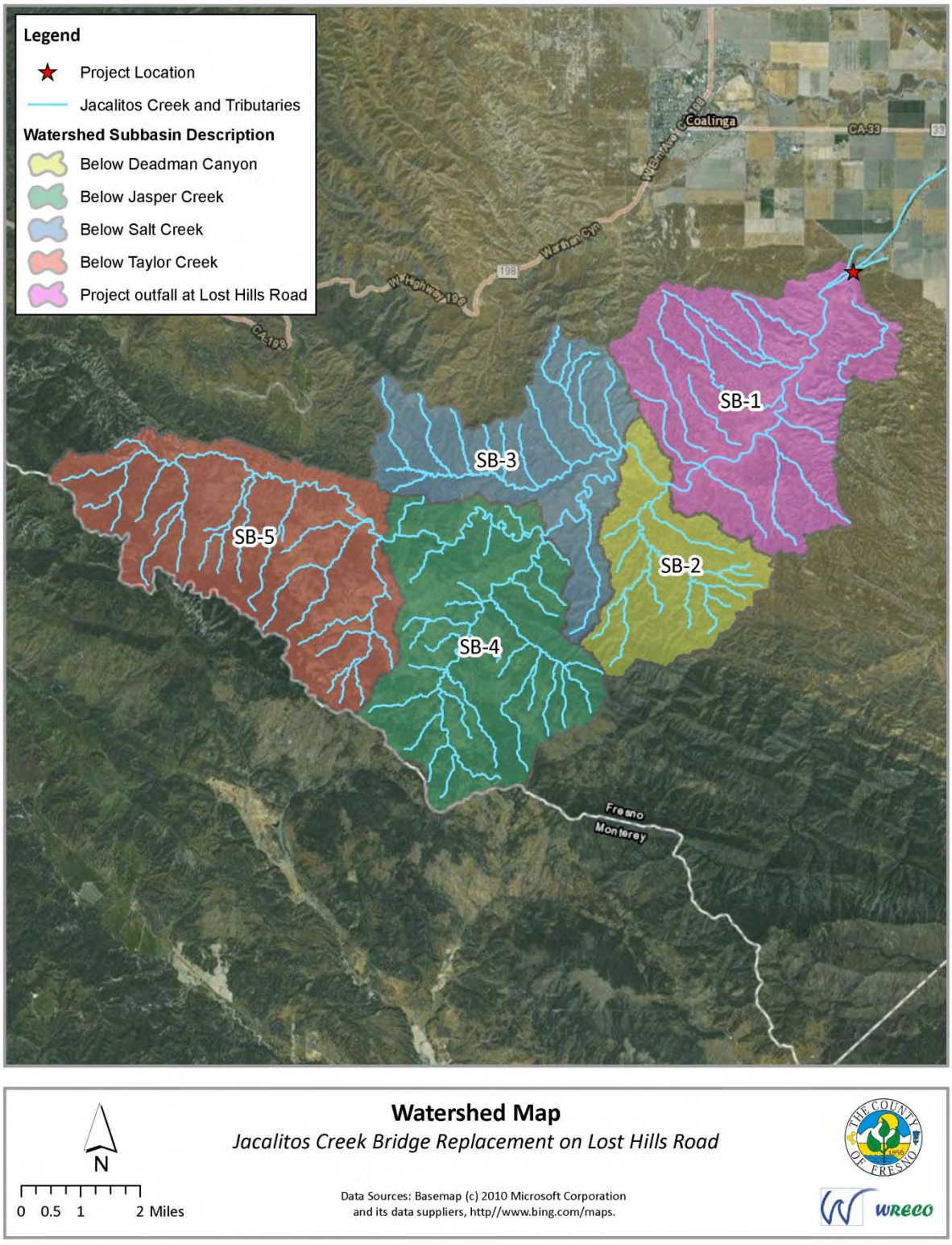

Figure 2. Jacalitos Creek at Lost Hills Road Watershed Subbasins

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Precipitation frequency data (precipitation depths) were obtained from the National Oceanic and Atmospheric Administration's (NOAA) Atlas 14 website for California Precipitation Frequency Data using the longitude and latitude of the approximate centroid of each of the watershed subbasins (see Appendix E for the NOAA point precipitation frequency estimates). The precipitation depths for the 100-year and 50-year recurrence interval storms for the 24-hour rainfall duration were obtained from NOAA Atlas 14 for each subbasin. These precipitation depths were applied to the 24-hour dimensionless SCS rainfall distribution to produce synthetic rainfall distributions. See Appendix F for the SCS 24-hour rainfall distribution. This allows the watershed models to more accurately reflect the local rainfall conditions. These synthetic rainfall distributions were used in HEC-HMS as "precipitation gages" in the meteorological model (see Appendix G for the precipitation rainfall curves).

Rainfall Losses

The losses for each subbasin were calculated using a CN, initial abstraction, and impervious area percentage. The SCS CN is based on the cover type, hydrologic condition of that cover, and the hydrologic soil group (HSG). Cover types are typically selected based on aerial photographs and land use maps. The hydrologic condition indicates the effects of cover type and treatment on infiltration and runoff.

The HSGs of the watershed subbasins were obtained from the NRCS online *Web Soil Survey* (2013) and are included in Appendix H. Infiltration rates and runoff potential are indicated by the soil's HSG. Soils may be assigned to one of four groups (A, B, C, or D). Group A has high infiltration rates (low runoff potential) and consists mainly of deep, well-drained to excessively drained sands or gravelly sands. On the other end of the spectrum, Group D has very slow infiltration rates (high runoff potential) and consists chiefly of clays that have a high shrink-swell potential or soils with a clay or nearly impervious layer near the surface. The soils underlying the Project's watershed are predominantly categorized as HSGs C and D. The percentages for each HSG were estimated for each subbasin. The soils along Jacalitos Creek in the area between the Project site and the SR 33 bridge are predominantly HSG B. These soils have high infiltration rates.

In the hydrologic model, the rainfall is converted to runoff by using a CN, which is based on the watershed's soils, plant cover type and treatment, amount of impervious areas, interception, and surface storage. The composite CNs were estimated using Table 2-2 from TR-55 (which is included in Appendix I). The CN values in the table are identified based on the cover type, hydrologic condition, and the HSGs. The CNs in Table 2-2 from TR-55 are separated into four tables (a through d), and represent runoff conditions for urban (a), cultivated agricultural (b), other agricultural (c), and arid and semiarid rangeland (d) land uses.

Based on observations of the site and its watershed from both field reconnaissance and aerial imagery, the overall cover type of the watershed was determined to be predominantly categorized

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as “other agricultural lands” and “pasture, grassland, or range – continuous forage for grazing.” Based on the climate in the Project vicinity, the cover type can also be considered as being arid or semiarid rangelands. The CNs for desert shrub are similar to the CNs for “pasture, grassland, or range.” Fresno County’s Web Mapping Application indicates that the watershed basin (for all subbasins) has a future land use designation of “Agricultural Extensive 40 (AE-40), which indicates that not more than one residence may be constructed or placed upon a parcel of land that is less than 40 acres in size (included in Appendix K). Areas designated as agricultural extensive are intended to be used for agriculture and uses that are an integral part of the agricultural operation. In general, the future land use is expected to be similar to the existing land use.

The hydrologic condition indicates the effects of cover type on infiltration and runoff and is generally estimated from the density of plant and residue cover on the watershed basin. A “good” hydrologic condition indicates that the soil generally has low runoff potential for that specific HSG and cover type. Conversely, a “poor” hydrologic condition indicates that the soil generally has high runoff potential for that specific HSG and cover type. Generally, “poor” hydrologic conditions correspond with higher CN values when compared with “good” hydrologic conditions. Higher CN values correspond to greater runoff potential.

The percentages of each HSG were applied to the CN values from Table 2-2 from TR-55 to estimate a composite CN for each subbasin. The hydrologic condition varied for each subbasin. Subbasin SB-5 was considered to be “good” because the subbasin appeared to have canopy (trees and shrubs). The hydrologic condition for the lower subbasins (SB-1, SB-2, and SB-3) was considered to be “poor” because the subbasin appeared to have limited canopy (trees and shrubs) and little vegetative cover. The hydrologic condition for SB-4 was considered to be “fair” because the subbasin appeared to have some canopy and vegetative cover.

The CN values from Table 2-2 are based on an average antecedent moisture condition (AMC). The AMC is also known as the antecedent runoff condition (ARC). The AMC indicates the amount of moisture present in the soil (or the runoff potential) before a storm event. It can also be described as the amount of moisture the soil can absorb before becoming saturated. Once the soil is saturated, runoff will occur. There are three classifications of AMC: AMC I, II, and III. AMC II represents the “average” conditions with moderate runoff potential. AMC I represents the lowest runoff potential and AMC III represents the highest runoff potential. Based on a USGS report prepared for the Coalinga area, “Geology and Oil Resources of the Coalinga District California” (1910), the climate in the foothills and plains surrounding the Project area is considered to be arid. Based on the arid climate of the Project vicinity, AMC I seemed the most representative of the site conditions.

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The Highway Design Manual includes the following equation to convert an AMC II CN to an AMC I CN:

$$CN_{AMCI} = \frac{4.2CN_{AMCII}}{10 - 0.058CN_{AMCII}}$$

Where:

CN_{AMCI} = AMC I CN, dimensionless
CN_{AMCII} = AMC II CN, dimensionless

The CNs are used to estimate the potential maximum retention after runoff begins (S) and the initial abstraction (I_a). The CN values and I_a values are used in the rainfall/runoff model in HEC-HMS to calculate losses due to infiltration for each watershed subbasin.

The potential maximum retention after runoff begins is related to the soil and cover conditions of the watershed through the CN, and was calculated using the following equation from TR-55:

$$S = \frac{1000}{CN} - 10$$

Where:

S = potential maximum retention after runoff begins, in.
CN = runoff curve number, dimensionless

The initial abstraction was estimated using an equation from TR-55 to relate the initial abstraction to the potential maximum retention after runoff begins. The initial abstraction is the part of rainfall that occurs before direct stormwater runoff begins, and consists of interception, initial infiltration, surface depression storage, evapotranspiration, and other factors. The initial abstraction was calculated using the following equation from TR-55:

$$I_a = 0.2S$$

Where:

S = potential maximum retention after runoff begins, in.
I_a = initial abstraction, in.

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The composite CNs, potential maximum retention after runoff begins, and the initial abstraction values are presented in Appendix I.

For each subbasin, the average percentage of impervious areas is also defined. In the rainfall/runoff model, no loss calculations are carried out on these impervious areas. All precipitation on these portions of the subbasin become excess precipitation that is subject to direct runoff. Based on the Highway Design Manual, an average 5% is typical for pasture/open land, and this value was assigned to each of the five subbasins.

Transformation of Effective Rainfall

The transformation of the effective rainfall was accomplished using the SCS unit hydrograph transform method, which is dependent on lag time. The lag time was estimated using the synthetic unit hydrograph lag method, which was developed by the U.S. Bureau of Reclamation (USBR) in 1987 (American Society of Civil Engineers 1996). The lag time was calculated for each of the subbasins using the following equation:

$$t_L = 26K_n\left[\frac{L \bullet L_{ca}}{S^{0.5}}\right]^{0.33}$$

Where:

- t_L = time lag, which is the time from the center of mass of rainfall excess to the peak discharge, hours
- L = length of longest watercourse from the point under consideration to the boundary of the drainage basin, mi
- L_{ca} = length along the longest watercourse from the point under consideration to a point on the channel nearest the centroid of the watershed, mi
- S = overall slope of the longest watercourse along L, ft/mi
- K_n = roughness coefficient representative of the watershed

The parameters used to calculate lag time are presented in Appendix J and the resulting calculated lag times are presented in Appendix J. The lag time was also estimated for the overall watershed basin along the longest flow path to be 6.1 hours. The NRCS relates the lag time to the time of concentration by multiplying the time of concentration by 0.6 (2010). The time of concentration was estimated to be 10.2 hours. In a hydrograph created with NRCS procedures, the duration of rainfall that directly contributes to the peak is approximately 170 percent of the time of concentration (1986). Based on these procedures, the approximate duration of rainfall for the Project site was estimated to be 17.4 hours. Per the NRCS TR-55, the 24-hour synthetic rainfall distribution is appropriate to use for modeling this situation because it nests the rainfall intensities from the shorter duration storm. Normally, a rainfall duration equal to or greater than the time of

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concentration is used. A 24-hour storm duration is commonly used for design calculations per industry standards, and was used to estimate the peak flows for the Project site.

Channel Routing

Channel routing is a technique used to predict the changes in shape of the hydrograph as it moves through the channel reach. In the rainfall/runoff model, the kinematic wave routing method was selected for the analysis. This method is appropriate when there are no observed hydrograph data available for calibration. The subbasins were connected in the HEC-HMS model using reach elements, and the reaches were computed using the kinematic wave routing method.

The parameters used in the calculation include the length of the reach, the average slope of the channel, the average Manning's n roughness coefficient, the shape of the channel, and the size of the cross sectional shape. The parameters used for the kinematic wave routing are included in Appendix K. The lengths of the reaches used in the model were measured using aerial imagery to locate the path of the channel. The average slopes along the channel were estimated using USGS topographic information. Based on the aerial imagery, the Manning's n roughness coefficient was selected to be 0.04 to represent the average channel roughness for the channel reaches. The shape was assumed to be trapezoidal with a bottom width of 30 feet and 2:1 (horizontal to vertical) side slopes.

Results of Rainfall/Runoff Model

The peak discharges were estimated for the subbasins and the Project site as a whole, and are summarized in Table 4 and the HEC-HMS output are included in Appendix L.

Table 4. Unit Hydrograph Design Discharges for Project Site for 24-Hour Storm Duration

Hydrologic Element*	Drainage Area (sq mi)	50-Year Peak Discharge (cfs)	100-Year Peak Discharge (cfs)
SB-1	15.2	900	1,230
SB-2	7.2	700	970
SB-3	10.1	810	1,250
SB-4	14.5	2,070	2,730
SB-5	15.4	1,910	2,500
Project Location	62.3	5,690	7,730

Notes: * See Figure 2 for the hydrologic element locations.

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100-YEAR FLOW TO DRAINAGE AREA RATIO COMPARISON

It was difficult to calibrate the hydrologic model without available stream measurements because there are no known operational gaging stations along Jacalitos Creek. Therefore, multiple hydrologic methods were utilized to estimate the flow rates for the Project site. In addition, gaging stations for other nearby watersheds were assessed. The flows calculated for the nearby gaging stations were based on actual peak flow stream measurements for watersheds near the Project site with similar basin characteristics, and provide a good basis of comparison to determine if the calculated flow rates for the Project site are reasonable.

Although there are many factors that influence the flow rates for a particular watershed basin, a rough comparison can be made by estimating the ratio of the 100-year flow rate to drainage area. The ratios of the 100-year flow rate to drainage area for each of the evaluated methods are presented in Table 5.

The discharge calculated using the regional regression equations yielded the least conservative results. The 100-year flow to drainage area ratio using the regional regression equation analysis was 74 cfs/square mile. Based on the three gaging stations evaluated, 100-year flow to drainage area ratio using the estimates from the gaging station record was an average of 120 cfs/square mile. The 74 cfs/square mile ratio for the regional regression equation is approximately 40% less than the 120 cfs/square mile ratio for the gaging station estimates.

The discharge for the State Route 33 bridge was also on the less conservative side (approximately 33% less than the gaging station estimates). One possible reason for the difference in 100-year flow between the SR 33 bridge and the Lost Hills Road bridge is likely infiltration. Not only does the slope greatly reduce downstream of our Project site, but the floodplain is no longer confined, and the colluvium fill in the valley floor becomes much thicker. The underlying soils are predominantly HSG B, which have high infiltration rates. Many creeks and rivers reduce their flows as they travel into the Central Valley.

The calculation using the rainfall/runoff model provided a reasonable estimate with a 100-year flow to drainage area ratio comparable to those calculated based on the gaging station data from nearby creeks with similar drainage areas.

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Table 5. 100-Year Flow to Drainage Area Ratios

Source/Location	100-Year Flow (cfs)	Drainage Area (square mile)	100-Year Flow to Drainage Area Ratio (cfs/square mile)
USGS Regional Regression Analysis At Project Site	4,590	62.3	74
USGS Gaging Station Cantua Creek	5,460	46.4	118*
USGS Gaging Station Los Gatos Creek	11,700	95.8	122*
USGS Gaging Station Avenal Creek	6,880	57.1	120*
Jacalitos Creek at State Route 33 Bridge (Downstream of Project Site)	5,200	64	81
Rainfall/Runoff Model At Project Site	7,730	62.3	124

Notes:
* The average 100-year flow to drainage area ratio for these three values (118, 122, and 120) is 120 cfs/square mile.
Denotes recommended design discharge.

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RECOMMENDED DESIGN DISCHARGES

WRECO developed a rainfall/runoff model to estimate the 100- and 50-year recurrence interval design discharges using HEC-HMS software, and following the SCS Unit Hydrograph Method, which is an accepted methodology by industry standards. The peak discharge calculated using the rainfall/runoff model is recommended for use in the hydraulic analysis because the SCS unit hydrograph method provides a detailed analysis of the watershed. The 50-year and 100-year peak discharges using this method recommended for design are 5,690 cfs and 7,730 cfs respectively. The assumptions used in the model were based on currently available information. Although the 100-year flow to drainage area ratio is slightly greater than the ratio of nearby gaging stations, it is not excessively so, and provides an estimate of a similar magnitude (124 cfs/square mile vs. an approximate average of 120 cfs/square mile).

Some degree of conservatism is warranted for this particular Project site due to the unique characteristics and historical observations documented at the existing bridge location. The existing bridge has experienced heavy rains, high flows, and flooding. Documented photographic evidence from Caltrans Bridge Inspection Reports (BIRs) suggests that the existing bridge has sustained storm damage and previous high water has impacted the bridge soffit. For example, in March and April 1958, the high flows caused pile bents 3 and 4 to settle, leading to up to 1.5 ft of settlement as measured from the bridge deck. The bents were repositioned and jacked up to grade. In 1983, the embankment of the upstream side of Abutment 6 washed away, and steel piles were exposed.

With the prior history of storm damage, the somewhat conservative recommended flow rates for the design of the Lost Hills Road bridge based on the HEC-HMS rainfall/runoff model SCS unit hydrograph method seem prudent and justifiable. Flow monitoring at the Project site can be considered as an option to assist in the calibration of the hydrologic model.

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APPENDICES

A. State Route 33 Hydraulic Report
B. Fresno County Flood Insurance Study excerpt
C. USGS Gaging Station Stream Statistics
D. Storm Distribution Regions
E. Point Precipitation Frequency Estimates
F. 24-Hour Rainfall Distributions
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APPENDIX A. STATE ROUTE 33 HYDRAULIC REPORT

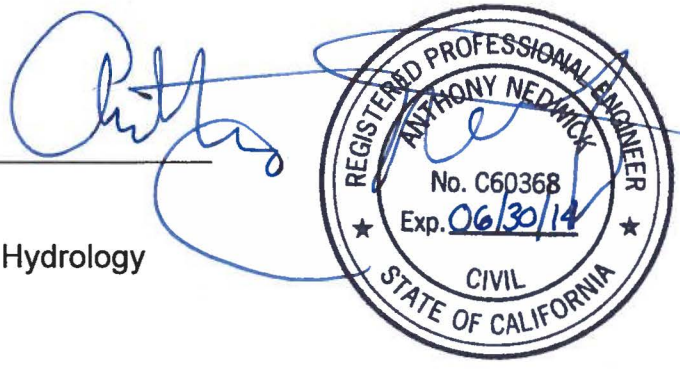
State of California – Department of Transportation
Division of Engineering Services
Structure Design Services

FINAL HYDRAULIC REPORT

Jacalitos Creek

Bridge No. 42 0441
06 - FRE – 33 PM 11.0
EA 06-432601
Project ID 06 0002 0388

Prepared by:



Anthony Nedwick, PE
Structure Hydraulics and Hydrology
September 17, 2013

General:

It is proposed to replace the existing Jacalitos Creek, Bridge No. 42-0072. The new Bridge Number will be 42-0441. The bridge is located on State Route 33 in Fresno County, east of the City of Coalinga. The existing bridge was originally constructed in 1955.

Figure 1: Aerial View of existing Jacalitos Creek Bridge, Br. No. 42 0072.

The purpose of the proposed project is to replace the existing Jacalitos Creek Bridge with a new structure that will meet the current standards for lane and shoulder width, as well as correct the seismic deficiencies of the current bridge. The existing bridge was evaluated by both the Structures Maintenance-Hydraulics and Structures Maintenance-Ratings groups and determined to be not scour critical, with an NBIS 113 Code of 5 (December 2012).

It should be noted that the alignment stationing and related numerical designation for the bridge elements such as abutments, Beginning of Bridge (BB) and End of Bridge

(EB), have all been reversed for the proposed structure, in comparison to the convention used for the existing structure. Therefore, Abutment 1 of the proposed structure is the west abutment which is the location of the existing Abutment 7 for the 1955 structure. Similarly, the proposed Abutment 2 is the east abutment, the location of the existing Abutment 1.

The current structure consists of a 134'-6" long, 6-span concrete slab bridge on multi-column bents. The columns are a combination of concrete and steel H-piles. The natural channel both upstream and downstream is a wide, meandering channel. The roadway embankment and relatively small bridge opening causes a considerable restriction to the natural flow during high discharge events. This restriction causes the velocities to increase from about 3 fps in the reach 55 feet upstream of the structure to 7 fps at the upstream side of the bridge, and further to almost 17 fps within 50 feet of the downstream side of the bridge, where the maximum velocities occur. Velocities then drop back to the 8 to 9 fps range within about 90 feet of the structure, and drop further, to the 3 to 4 fps range, approximately 400 feet downstream of the structure. This increased velocity along with the extreme angle of attack occurring at the bridge site are causing significant scour and erosion issues at the piers and embankments.

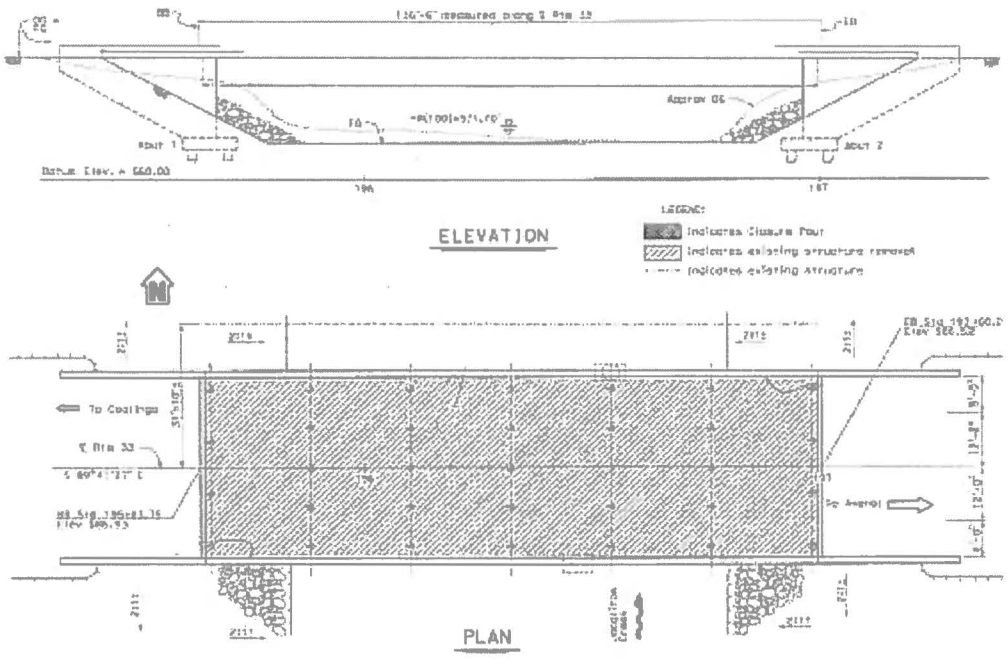


Figure 2: Plan and Elevation Views of the proposed replacement bridge. Not to Scale.

The proposed structure would be 136'-6", single-span, cast-in-place, pre-stressed (CIP/PS) concrete box girder structures founded on 2' diameter CISS piles. The proposed structure has a width of approximately 43 feet, and a structural depth of 6'-

0". The proposed structure will replace the existing structure in its current location, with no increase in the bridge opening width.

This report is based on the plans and information provided by Eduardo Ortega Jr. of Structure Design, including the General Plan, dated September 9, 2013. All elevations are based on survey information as noted by the Foundation Plan provided by Preliminary Investigations-North. **All elevations indicated in this report are based on the Vertical Datum NAVD 1988.**

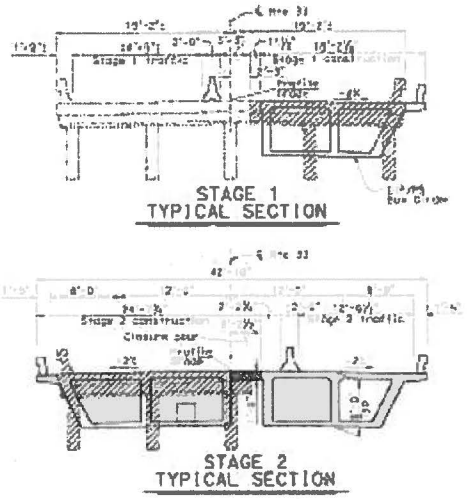


Figure 3: Typical Section. Not to Scale.

Hydraulic Issues at the Existing Structure:

The current structure has experienced hydraulic issues in the past. High flows in 1958 caused a 4 foot drop in channel elevation beneath the structure. Further flooding in 1962 caused some minor settlement of the structure and prompted the design and installation of a sheetpile checkdam immediately downstream of the bridge. Further flooding in 1969 washed away RSP at Abutment 1, exposed the pile shells at the bents and caused the sheetpile checkdam to partially fail by bowing out. Subsequent surveys revealed a 3" settlement of the deck. The deck was jacked up and four additional steel H-piles per bent were installed at Bents 2 through 6. In addition to the additional piles, a concrete pile cap was constructed around the columns of Bents 2 through 6. There was no indication whether the pile caps were covered after installation. A review of historical Bridge Inspection Reports indicates that the pile caps are currently exposed but not undermined. Based on information from previous reports and site visits, there is little evidence that the sheetpile checkdam still exists, except for some file photos from 1992 showing the outer ends visible above the channel invert. These historical inspection reports also indicate the placement of concrete rip rap in the channel under the structure.

The 4 feet of degradation noted after the 1958 storms was likely due to a combination of streambed degradation and contraction scour caused by the constriction of the relatively small bridge opening compared to the width of the natural channel. The contraction scour estimation is supported by calculations based on the HEC-RAS model, which indicate the current bridge opening of under 134'-6" feet will cause approximately 6.4 feet of contraction scour.

It was estimated that the invert has experienced between 2 and 3 feet of long-term degradation since 1962, based on survey data. At this rate, it is likely the new structure could experience up to 4 feet of long term degradation over its lifespan. There is no indication of channel head-cutting. The remnants of the sheetpile checkdam can be abandoned in place, unless it conflicts with the construction of the new structure.

A review of the structure and the current channel configuration was performed by the Caltrans Structures Maintenance and Investigations (SM&I) Hydraulics Branch with input from the SM&I Ratings Branch. The existing structure was determined to be not Scour Critical, with an NBIS 113 Code of 5 (December 2012).

There has also been a history of embankment erosion upstream of the existing Abutment 1. Much of this erosion appears to be caused by the redirection of the channel flow to the east. Upstream of Route 33, the natural channel flows in the north-easterly direction until it is redirected nearly due east by the Route 33 roadway embankment fill to the west of the existing bridge. The flow then travels in an easterly direction, nearly parallel to the roadway, where it then must turn nearly 90-degrees to the north to pass through the bridge opening. Much of the hydraulic energy is directed at the east embankment just to the south of Abutment 1, where past erosion problems have necessitated the addition of several different erosion mitigation designs including, rock slope protection (RSP), retards and wire revetment fences. Revetment has also been required immediately upstream from the existing Abutment 7, along the roadway embankment.

Basin:

At the bridge site, the watershed for Jacalitos Creek encompasses more than 64 square miles. Jacalitos Creek originates in the Diablo Range and flows northeasterly through the Kreyenhagen and Jacalitos Hills into Pleasant Valley to the east of the City of Coalinga, where it flows through the project site and eventually into Los Gatos Creek just over a mile downstream from the site. Elevations in the watershed range from approximately 570 feet at the bridge site to almost 4,000 feet in the higher elevations of the Diablo Range. Precipitation in the watershed is light but tends to increase with altitude and varies from an average annual precipitation of about 5 inches at the bridge site to about 20 inches in the higher elevations of the coastal range with most areas receiving less than 12 inches per year.

Jacalitos Creek is a tributary to Los Gatos Creek, which in turn becomes Arroyo Pasajero. Several miles downstream from the Jacalitos Bridge site, Interstate 5 crosses Arroyo Pasajero. On March 10, 1995, a catastrophic failure attributed to scour caused both Northbound and Southbound structures carrying Interstate 5 over Arroyo Pasajero to collapse, causing seven fatalities.

Jacalitos Creek is not under the jurisdiction of the Central Valley Flood Protection Board or the Fresno County Flood Control Board. In a phone conversation with Dan McKay with the City of Coalinga, it was determined that there is no flood control agency with jurisdiction over the Jacalitos Creek channel. The City of Coalinga is constructing a new wastewater treatment facility on the property located near the South eastern quadrant of the bridge.

The channel stability of Jacalitos Creek was assessed within the FHWA publication "Assessing Stream Channel Stability at Bridges in Physiographic Regions," (Publication No. FHWA-HRT-05-072, July 2006). Channel stability was estimated to be "fair."

Discharge:

WMS (Watershed Modeling System by Aquaveo), version 8.4, was utilized to determine the watershed area in excess of 64 square miles. There is a stream gage attached to the existing bridge, with notes in the file indicating the gage belongs to the Department of Water Resources (DWR). However no current information was found after checking DWR and USGS stream gage data sources. The FEMA Flood Insurance Study for Fresno County did not contain any specific information for Jacalitos Creek, but did contain discharge rates and watershed area for nearby Warthan Creek. The Warthan Creek watershed is northwest of, and immediately adjacent to, the Jacalitos Creek watershed, and encompasses about 116 square miles. The discharge rates for Jacalitos Creek were correlated with the FEMA discharges from Warthan Creek, using a basin transfer method, as outlined in USGS publication #77-21; Magnitude and Frequency of Floods in California. The 50-year and 100-year discharges for Jacalitos Creek were estimated to be 3,700 cfs and 5,200 cfs, respectively.

Hydraulic Analysis:

The channel hydraulics were modeled using the Army Corps of Engineers HEC-RAS modeling program, version 4.1.0, utilizing survey data provided by Preliminary Investigations-North. HEC-RAS was used to determine the water surface elevations and velocities throughout the project reach. Manning's roughness coefficients were estimated using USGS guides as well as data gathered during site investigations and Log of Test Boring information. Manning's coefficients were estimated at 0.038 for the main channel in this reach. The channel has a very flat average slope of approximately 0.6 % in the reach at the project site.

Two scenarios were evaluated; the existing structure and the proposed single span replacement structure. The abutment slopes and soil bench widths where assumed for the proposed structure, with a 2:1. The survey data was altered to represent the modified channel at the proposed structure. Actual survey data and as-built plans were used to model the existing structure.

Based on the hydraulic model for the existing structure, the top width of the 100-year flow gradually decreases from about 920 feet in width at a location approximately 900 feet upstream of the structure, to about 90 feet wide at the structure itself, and then increases to about 680 feet in width, approximately 600 feet downstream of the structure. Several hundred feet upstream from the structure, channel velocities are in the range of 1.5 fps to 3.1 fps. At the contracted area near the bridge, the velocities increase from 7 fps to almost 17 fps, and then decrease back to less than 8 fps several hundred feet downstream of the structure as the channel widens back to near the natural width. This illustrates the channel constriction at the bridge site. This constriction is likely the cause of most of the localized channel degradation at the bridge since its construction in 1955.

Velocities in the vicinity of the structure vary based on the revised geometry of the channel cross-section for the existing structure as well as the proposed alternative. The geometry was based on both the existing channel as well as assumptions regarding the removal and replacement of the structures. Table 1 lists the 100-year water surface elevation ($WSEL_{100}$) at the upstream side of the structure, as well as the average channel velocities immediately upstream (V_{US}), and downstream (V_{DS}) of the proposed structure.

	$WSEL_{100}$	V_{US}	V_{DS}	$scour_{contraction}$
Existing	577.0 ft	7.1 fps	15.2 fps	6.4 ft
Proposed	571.7 ft	8.8 fps	8.0 fps	6.4 ft

There has also been a history of embankment erosion upstream of the proposed Abutment 2 (eastern abutment) and the roadway embankment upstream and to the west of the proposed Abutment 1. Much of this erosion is thought to be caused by the redirection of the channel flow to the east. Upstream of the structure, the natural channel flows in the north-easterly direction until it is redirected nearly due east by the roadway embankment fill for Route 33. The flow then travels in an easterly direction, nearly parallel to the roadway, where it then must turn nearly 90-degrees to the north to pass through the bridge opening. Much of the hydraulic energy is directed at the east embankment just to the south of Abutment 1, where past erosion problems have necessitated the addition of several different erosion control designs including, rock slope protection (RSP), retards and wire revetment fences. These countermeasures have been placed along both banks upstream of the structure.

Streambed:

Based on the 1969 Log of Borings, the channel bed materials at the bridge site consist of mostly sand and fine gravels with some lenses of clayey silt and silty clay. This material is considered to be scourable.

Scour Analysis:

Due to the constriction of the channel at the bridge site, contraction scour is expected to occur. Contraction scour for the existing structure was calculated to reach a depth of approximately 6.4 feet at the structure. This correlates well with the degradation noted after the 1958 storms. Based on the hydraulic models, the proposed single span structure will have minimal effect on the contraction scour estimate of 6.4 feet. There is no abutment scour anticipated at the proposed structure, however erosion and sloughing of soil at the abutments due to long term degradation, contraction scour and lateral migration may cause abutment foundation exposure. The channel velocities should be taken into account when designing RSP or other scour countermeasures at the embankments in the vicinity of the structure such as guide banks, retards or revetment.

Scour was estimated utilizing the methods set forth in the FHWA HEC-18, "Evaluating Scour at Bridges." All scour elevations are based on the 100-year discharge and assume no mitigation measures will be in place. Based on the HEC-RAS model, the current channel invert at the structure is approximately 564.8 ft (NAVD88 datum). The existing channel was also modeled using the TUFLOW, 2D modeling software from Aquaveo, to run a two-dimensional (2D) depth-averaged model for simulating and examining flow patterns under the Jacalitos Creek Bridge and in the channel bend upstream of the bridge.

Channel migration is a consideration at this site but Local Pier Scour and potential debris are not applicable due to the single-span box girder design.

The post-project channel has been assumed to closely match the pre-project channel with regards to vegetation, configuration and embankment lining. Therefore, Manning's roughness coefficients remained the same for all scenarios modeled. It is anticipated that the channel configuration will be gradually transitioned from the existing state to the proposed configuration.

Summary & Recommendations:

Below is a summary of key design parameters based on the hydrology and hydraulic analysis performed for these structures.
Bank protection and channel guides should be incorporated into the upstream embankments on both the west and east approaches, to stem the bank erosion currently caused by the lateral migration of the channel. Bank protection shall be designed by the District.

Due to bed and embankment materials, along with FHWA requirements, the abutments should be designed for scour depths below the channel invert, including the effects of migration, contraction scour and long-term degradation. These elevations are noted in the accompanying tables shown below.

All elevations given are referenced to the data provided by Structures Design and Preliminary Investigations-North, using the NAVD 88 vertical datum.

Hydrologic Summary for Jacalitos Creek, 42-0441		
Drainage Area: 64 mi^2		
Frequency	**Design Flood**	**Base Flood**
	50-year	100-year
Discharge	3,700 cfs	5,200 cfs
Water Surface Elevation at Bridge	571.0 ft	571.7 ft
Flood plain data are based upon information available when the plans were prepared and are shown to meet federal requirements. The accuracy of said information is not warranted by the State and interested or affected parties should make their own investigation.		
Minimum Required Soffit Elevation	573.0 ft	

LongTerm Scour Depths, Jacalitos Creek, Br. No. 42-0441		
Supports	Degradation Scour Depth	Contraction Scour Depth
All Supports	4.0 ft	6.4 ft

Scour Data (Elevation and Depth), Jacalitos Creek, Br. No. 42-0441			
		Short Term (Local) Scour Elevation	
Supports	Long Term Scour Elev	Depth	Elevation
All Supports	554.4 ft	N/A	N/A

All elevations given are referenced to the data provided by Structures Design and Preliminary Investigations-North, using the NAVD 88 vertical datum.

This report has been prepared under my direction as the professional engineer in responsible charge of the work, in accordance with the provisions of the Professional Engineers Act of the State of California.

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APPENDIX B. FRESNO COUNTY FLOOD INSURANCE STUDY EXCERPT

hypothetical flood events for the 2-, 1-, 0.5-, 0.2-, and 0.1-percent annual chance recurrence intervals.

In the hypothetical analysis, the 49 years of unregulated flow data at Friant Dam were used to develop 1-, 3-, 7-, 15-, and 30-day flood frequency curves. Recurrence interval flows generated from these curves were then patterned into balanced 30-day flood series using six 5-day waves. The largest wave was placed fourth in the sequence within each 30-day flood series. These 30-day flood series were then routed through Millerton Lake, which was given an assumed initial starting storage. The result of this routing was peak flows below Friant Dam for the 2- through 0.1-percent annual chance recurrence intervals.

To generate the peak flows at Gravelly Ford, the hypothetical floods routed through Friant Dam were then routed downstream to Gravelly Ford. The routing included flows from two tributaries, Cottonwood and Little Dry Creeks, which were estimated as 3 percent of San Joaquin River's natural flow, based on historical relationships of rainfloods in the watershed. A Muskingum routing was performed using parameters developed in previous analyses and from calibration of the 1997 flood event.

A summary of the drainage area-peak discharge relationships for all the streams studied by detailed methods is shown in Table 6, "Summary of Discharges."

TABLE 6 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
ALLUVIAL DRAIN					
At Alluvial Avenue	4.5	[1]	[1]	20[2]	[1]
Downstream of Enterprise Canal	3.2	[1]	[1]	20[2]	[1]
Upstream of Enterprise Canal	3.2	100	220	290	660
CENTRAL CANAL					
At Church Avenue	[3]	400	440	440	440
At North Avenue	[3]	380[4]	380[4]	380[4]	380[4]
At State Highway 99	[3]	350[4]	350[4]	350[4]	350[4]
CHERRY AVENUE PERCOLATION BASIN					
At Bethel Avenue	0.1	6	14	20	35

[1]Data not available
[2]Decrease as a result of construction of Alluvial Drain Detention Basin
[3]Not applicable; waterway is a distributary
[4]Decrease as a result of excessive overbank losses upstream

TABLE 6 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
COALMINE CANYON CREEK					
At mouth	8.6	400	1,420	1,620	2,390
At Monterey Avenue	5.3	110	610	940	1,900
DOG CREEK					
At Shields Avenue	3.5	40[1]	120[1]	220[1]	340[1]
At Herndon Avenue	1.4	60	190	260	460
Downstream of Friant-Kern Canal	0.9	40	120	160	290
DRY CREEK					
At confluence with Herndon Canal	24.3[2]	[3]	[3]	178[4]	[3]
Downstream of Gould Canal	22.3[2]	[3]	[3]	178[4]	[3]
DRY CREEK CANAL					
At Millbrook Avenue Drop Structure	[3]	[5]	[5]	296[6]	[5]
At First Street	[3]	[5]	[5]	296[6]	[5]
At Van Ness Avenue	[3]	[5]	[5]	296[6]	[5]
At Franklin Avenue	[3]	[5]	[5]	296[6]	[5]
At State Highway 99	[3]	[5]	[5]	296[6]	[5]
FANCHER CREEK					
At confluence with Fresno Canal	23.0	700	800	800	800
At Academy Avenue	22.7	700	800[1]	800[1]	800[1]
At Gould Canal	22.4	[3]	[3]	[3]	[3]
At Shields Avenue	21.8	700	1,200[6]	1,200[6]	1,200[6]
At Shaw Avenue	21.3	700	1,860	2,630	3,630
Downstream of Friant-Kern Canal	20.9	700[7]	1,860[7]	2,630[7]	3,630[7]
Upstream of Friant-Kern Canal	20.9	870	2,400	3,340	4,930

[1]Decrease as a result of excessive overbank losses upstream
[2]Drainage areas downstream of Big City Creek Reservoir only
[3]Data not available
[4]Decrease as a result of construction of Big Dry Creek Dam
[5]Decrease as a result of construction of Alluvial Drain Detention Basin
[6]Not applicable; waterway is a distributary
[7]Decrease as a result of culvert restrictions at Friant-Kern Canal

TABLE 6 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
FANCHER CREEK CANAL					
At Fancher Avenue	[1]	600[2]	1,500	1,800	3,300
At Belmont Avenue	[1]	600[2]	1,100[3]	1,300[3]	1,500[3]
At Fowler Avenue	[1]	600[2]	1,100	1,100[3]	1,200[3]
At Clovis Avenue	[1]	600[2]	720[3]	730[3]	740[3]
At Butler Avenue	[1]	600	600[3]	600[3]	600[3]
FRESNO CANAL					
At confluence with Fancher Creek	[4]	1,500[2]	1,500[2]	1,500[2]	1,500[2]
At Del Ray Avenue	[4]	1,500[2]	1,500[2]	2,000	3,500
At Mill Ditch Diversion	[4]	1,500[2]	1,800	2,580	5,100
GREENWOOD PARK DRAINAGE					
At Bethel Avenue	0.45	12	34	56	107
HERNDON CANAL					
At Blackstone Avenue	[4]	[1]	[1]	477[4]	[1]
At State Highway 99	[4]	[1]	[1]	550[4]	[1]
At East McKinley Avenue	[4]	[1]	[1]	300[4]	[1]
HOG CREEK					
At Friant-Kern Canal	7.8	360	980	1,360	2,400
HUGHES CREEK					
At mouth	15.4	1,300	3,300	5,400	8,400
KINGS RIVER					
At Tulare/Fresno County line	1,792	8,400	15,000	20,500	49,200
At Goodfellow Avenue	1,750	8,100	13,600	17,400	44,000
At Annadale Avenue	1,740	7,600	12,700	16,000	35,000
At River Mile 96.0	1,735	6,800[3]	11,400[5]	13,500[5]	25,000[3]
At Kings Canyon Road	1,725	7,900[3]	13,100[3]	16,600[3]	36,000[3]
At Piedra Road	1,693	12,800	15,900	20,300	48,500[3]
At Pine Flat Road	1,545	12,800	15,900	16,700	49,000

[1]Data not available
[2]Normal irrigation releases exceed floodflow
[3]Decrease as a result of excessive overbank losses upstream
[4]Not applicable; waterway is a distributary
[5]Decrease as a result of construction of Redbank Creek Detention Basin

TABLE 6 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
KINGS RIVER- EAST BRANCH					
Near Lone Oak Avenue	[1]	1,100	2,000	3,000	6,500
At confluence with Kings River	[1]	800[2]	1,300[2]	2,900[2]	16,600
LOCAL STREET FLOODING					
At the intersection of Bethel Avenue and 9th Street	0.3	30	56	72	113
LOS GATOS CREEK					
At SPRR	513.5	5,980	13,700	17,750	25,500
Below confluence with Warthan Creek	144.7	4,580	7,690	8,100	9,770
At confluence with Coalmine Canyon Creek	142.2	2,540	4,770	5,180	6,840
At Gale Avenue	132.3	2,420	4,490	4,820	6,230
MILL CREEK					
At mouth	127.0	5,900	14,000	19,000	35,700
MILL DITCH					
At Fancher Avenue	[3]	[4]	[4]	340[5]	[4]
At Temperance Avenue	[3]	[4]	[4]	596[5]	[4]
At Fowler Avenue	[3]	[4]	[4]	596[5]	[4]
At Millbrook Avenue	[3]	[4]	[4]	596[5]	[4]
ORANGE COVE DRAIN					
At South Avenue	4.0	45	65[2]	210[2]	635[2]
At Park Avenue	3.7	45	155	335	860
PANOCHE CREEK					
At Firebaugh	385.5[6]	0[7]	0[7]	0[7]	270[7]
Below State Highway 33	385.5[6]	150[7]	230[7]	300[7]	680[7]
Above State Highway 33	385.5[6]	500	670	800	850
At City of Mendota	385.5	60[2]	60[2]	60[2]	70[2]
At Belmont Avenue	352.1	2,810	8,610	12,530	24,500
At California Aqueduct	321.9	2,810	8,610	12,530	24,500

[1]Not applicable; waterway is a distributary
[2]Decrease as a result of excessive overbank losses upstream
[3]Data not available
[4]Decrease as a result of construction of Big Dry Creek Dam
[5]Decrease as a result of construction of Redbank Creek Detention Basin
[6]Contributing drainage area for overland flow
[7]Decrease as a result of infiltration and canal interception of overland flow

TABLE 6 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
PUP CREEK					
At Clovis Avenue	9.8	[1]	[1]	20[2]	[1]
At Fowler Avenue	8.7	[1]	[1]	20[2]	[1]
At DeWolf Avenue	3.2	[1]	[1]	20[2]	[1]
REDBANK CREEK					
At confluence with Mill Ditch	18.3	150	550	1,250	2,200
REDBANK CREEK TRIBUTARY 1					
At Sierra Avenue	1.5	30	150	220	400
Downstream of Friant-Kern Canal	0.7	30[3]	130[3]	160[3]	170[3]
Upstream of Friant-Kern Canal	0.7	35	135	200	340
REDBANK CREEK TRIBUTARY 2					
At Bullard Avenue	12.2	370	1,345	1,710	2,050
At Sierra Avenue	1.7	160	625	700	810
Downstream of Friant-Kern Canal	1.0	40	150[3]	160[3]	190[3]
Upstream of Friant-Kern Canal	1.0	40	180	260	450
REDBANK CREEK TRIBUTARY 3					
Upstream of Friant-Kern Canal	3.0	120	475	800	1,370
Downstream of Friant-Kern Canal	3.0	120	475	540[4]	620[4]
REDBANK CREEK TRIBUTARY 4					
At Sierra Avenue	2.9	90	290	300	420
Downstream of Friant-Kern Canal	2.3	90	290[2]	300[5]	420[5]
Upstream of Friant-Kern Canal	2.3	90	340	540	990\

[1]Decrease in 1-percent annual chance floodflow as a result of overbank losses; overbank losses were not calculated for the 10-, 2-, and 0.2-percent annual chance flows

[2]Not applicable; waterway is a distributary

[3]Data not available

[4]Decrease as a result of culvert restrictions at Friant-Kern Canal and overbank losses upstream

[5]Decrease as a result of culvert restrictions at Friant-Kern Canal

TABLE 6 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
REDBANK CREEK TRIBUTARY 5					
At Sierra Avenue	3.5	120	430	710	820
Downstream of Friant-Kern Canal	3.0	120	430[1]	710[1]	820[1]
Upstream of Friant-Kern Canal	3.0	120	450	730	1,320
SAN JOAQUIN RIVER					
At USGS gage near Mendota	3,943	4,500[3]	6,800[3]	8,700[3]	8,700[3]
At Gravelly Ford	1,805	9,000	32,500	64,000	138,000
Below Little Dry Creek	[2]	9,000	34,300	74,300	151,100
Below Friant Dam	1,676	8,000	33,000	71,000	146,000
SPRR DRAINAGE					
At North Avenue	0.99	30	70	160	300
TIVY VALLEY CREEK					
At Piedra Avenue	2.2	70	210[4]	265[4]	320[4]
At Weldon Avenue	2.0	70	550	1,100	1,660
WARTHAN CREEK					
At confluence with Los Ganos Creek	116.0	2,300	6,400	8,900	17,100
WELDON CREEK					
At Piedra Road	1.1	60	260	520	820
WOOTEN CREEK					
At Alta Main Canal	15.9	150[5]	170[5]	175[5]	175[5]
At AT&SF Railway	12.7	350	690[5]	995[5]	1,340[5]
Downstream of Friant-Kern Canal	11.7	345	800	1,115	1,360

[1]Data not available
[2]Decrease as a result of construction of Alluvial Drain Detention Basin
[3]Decrease as a result of culvert restrictions at Friant-Kern Canal
[4]Decrease as a result of culvert restrictions at Friant-Kern Canal and overbank losses upstream
[5]Decrease as a result of excessive overbank losses upstream

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the source studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent

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APPENDIX C. USGS GAGING STATION STREAM STATISTICS

USGS
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StreamStats Data-Collection Station Report

USGS Station Number	11253310
Station Name	CANTUA C NR CANTUA CREEK CA

Click here to link to available data on NWIS-Web for this site.

Descriptive Information

Station Type	Streamgage, continuous record
Location	
Gage	
Regulation and Diversions	
Regulated?	Unknown
Period of Record	
Remarks	
Latitude (degrees NAD83)	36.40217399
Longitude (degrees NAD83)	-120.43349166
Hydrologic unit code	18030012
County	-
HCDN2009	Yes

Physical Characteristics

Characteristic Name	Value	Units	Citation Number
Descriptive Information			
Datum_of_Latitude_Longitude	NAD83	dimensionless	30
District_Code	06	dimensionless	30
Begin_date_of_record	10/1/1966	days	41
End_date_of_record	9/30/2003	days	41
Number_of_days_of_record	13514	days	41
Number_of_days_GT_0	7510	days	41
Precipitation Statistics			
Mean_Annual_Precipitation	15.05	inches	219
Temperature Statistics			
Mean_Min_January_Temperature	35.43	degrees F	219
Mean_Maximum_January_Temperature	54.79	degrees F	219
Topographical Characteristics			
Percent_above_6000_ft	0	percent	219
Latitude_of_Basin_Centroid	36.38552	decimal degrees	219
Longitude_of_Basin_Centroid	-120.54249	decimal degrees	219
Maximum_Basin_Elevation	5102	feet	219
Mean_Basin_Elevation	2542	feet	219
Relative_Relief	88.7	feet per mi	219
Relief	4413	feet	219
Mean_Basin_Slope_from_30m_DEM	32.9	percent	219
Elevation_of_Gage	689	feet	219
Land Cover Characteristics			
Percent_Forest	14.5	percent	219
Percent_Impervious	0.09	percent	219
Percent_Lakes_and_Ponds	0	percent	219
Basin Dimensional Characteristics			

Drainage_Area	46.4	square miles	30
Basin_Perimeter	49.8	miles	219

Streamflow Statistics

Statistic Name	Value	Units	Citation Number	Preferred?	Years of Record	Standard Error, percent	Variance log-10	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Start Date	End Date
Peak-Flow Statistics											
2_Year_Peak_Flood	259	cubic feet per second	219	Y							
5_Year_Peak_Flood	894	cubic feet per second	219	Y							
10_Year_Peak_Flood	1610	cubic feet per second	219	Y							
25_Year_Peak_Flood	2860	cubic feet per second	219	Y							
50_Year_Peak_Flood	4050	cubic feet per second	219	Y							
100_Year_Peak_Flood	5460	cubic feet per second	219	Y							
200_Year_Peak_Flood	7070	cubic feet per second	219	Y							
500_Year_Peak_Flood	9530	cubic feet per second	219	Y							
WRC_Mean	2.331659	Log base 10	219	Y							
WRC_STD	0.736501	Log base 10	219	Y							
WRC_Skew	-0.642596	Log base 10	219	Y							
Systematic_peak_years	49	years	219	Y							
Peak_years_with_historic_adjustment	49	years	219	Y							
Regional_skew	-0.435597093118254	Log base 10	219	Y							
Regional_skew_mean_squared_error	0.13	Log base 10 squared	219	Y							
Period_of_record_of_historic_peaks	1958-2006	years	219	Y							
Flow-Duration Statistics											
1_Percent_Duration	52	cubic feet per second	41	Y	38						
5_Percent_Duration	14	cubic feet per second	41	Y	38						
10_Percent_Duration	6	cubic feet per second	41	Y	38						
20_Percent_Duration	1.97	cubic feet per second	41	Y	38						
25_Percent_Duration	1.4	cubic feet per second	41	Y	38						
30_Percent_Duration	0.92	cubic feet per second	41	Y	38						
40_Percent_Duration	0.42	cubic feet per second	41	Y	38						
50_Percent_Duration	0.075	cubic feet per second	41	Y	38						
60_Percent_Duration	0	cubic feet per second	41	Y	38						
70_Percent_Duration	0	cubic feet per second	41	Y	38						
75_Percent_Duration	0	cubic feet per second	41	Y	38						
80_Percent_Duration	0	cubic feet per second	41	Y	38						
90_Percent_Duration	0	cubic feet per second	41	Y	38						

95_Percent_Duration	0	cubic feet per second	41	Y	38
99_Percent_Duration	0	cubic feet per second	41	Y	38
General Flow Statistics					
Minimum_daily_flow	0	cubic feet per second	41	Y	38
Maximum_daily_flow	1070	cubic feet per second	41	Y	38
Std_Dev_of_daily_flows	19.07	cubic feet per second	41	Y	38
Average_daily_streamflow	3.32	cubic feet per second	41	Y	38
Base Flow Statistics					
Number_of_years_to_compute_BFI	37	years	42	Y	38
Average_BFI_value	0.352	dimensionless	42	Y	38
Std_dev_of_annual_BFI_values	0.19	dimensionless	42	Y	38

Citations

Citation Number	Citation Name and URL
30	Imported from NWIS file
41	Wolock, D.M., 2003, Flow characteristics at U.S. Geological Survey streamgages in the conterminous United States: U.S. Geological Survey Open-File Report 03-146, digital data set
42	Wolock, D.M., 2003, Base-flow index grid for the conterminous United States: U.S. Geological Survey Open-File Report 03-263, digital data set
219	Parrett, C., Veilleux, A., Stedinger, J.R., Barth, N.A., Knifong, D.L., and Ferris, J.C., 2011, Regional skew for California, and flood frequency for selected sites in the Sacramento•San Joaquin River Basin, based on data through water year 2006: U.S. Geological Survey Scientific Investigations Report 2010•5260, 94 p.

USGS
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StreamStats Data-Collection Station Report

USGS Station Number	11224500
Station Name	LOS GATOS C AB NUNEZ CYN NR COALINGA CA

Click here to link to available data on NWIS-Web for this site.

Descriptive Information

Station Type	Streamgage, continuous record
Location	
Gage	
Regulation and Diversions	
Regulated?	Unknown
Period of Record	
Remarks	
Latitude (degrees NAD83)	36.21467719
Longitude (degrees NAD83)	-120.4707116
Hydrologic unit code	18030012
County	-
HCDN2009	Yes

Physical Characteristics

Characteristic Name	Value	Units	Citation Number
Descriptive Information			
Datum_of_Latitude_Longitude	NAD83	dimensionless	30
District_Code	06	dimensionless	30
Begin_date_of_record	5/1/1945	days	41
End_date_of_record	9/30/2003	days	41
Number_of_days_of_record	21337	days	41
Number_of_days_GT_0	10689	days	41
Precipitation Statistics			
24_Hour_2_Year_Precipitation	2.1000	inches	31
Mean_Annual_Precipitation	18.37	inches	219
Climate Characteristics			
Mean_Annual_Lake_Evaporation	49.000	inches	31
Temperature Statistics			
Mean_Min_January_Temperature	33.67	degrees F	219
Mean_Min_January_Temperature	36.000	degrees F	31
Mean_Maximum_January_Temperature	55.26	degrees F	219
Topographical Characteristics			
Elevation_of_10_and_85_points	1700.00	feet	31
Percent_above_5000_ft	0.0000	percent	31
Percent_above_6000_ft	0	percent	219
Latitude_of_Basin_Centroid	36.26279	decimal degrees	219
Longitude_of_Basin_Centroid	-120.56568	decimal degrees	219
Maximum_Basin_Elevation	4963	feet	219
Mean_Basin_Elevation	2639	feet	219
Relative_Relief	61.9	feet per mi	219
Relief	3884	feet	219
Mean_Basin_Slope_from_30m_DEM	36.8	percent	219

Elevation_of_Gage	1085	feet	219
Land Cover Characteristics			
Percent_Forest	12	percent	219
Percent_Impervious	0.14	percent	219
Percent_Lakes_and_Ponds	0	percent	219
Percent_Storage	0.0100	percent	31
Stream Channel Properties			
Main_Channel_Length	18.300	miles	31
Stream_Slope_10_and_85_Method	78.800	feet per mi	31
Basin Dimensional Characteristics			
Contributing_Drainage_Area	95.800	square miles	31
Drainage_Area	95.8	square miles	30
Basin_Perimeter	62.8	miles	219

Streamflow Statistics

Statistic Name	Value	Units	Citation Number	Preferred?	Years of Record	Standard Error, percent	Variance log-10	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Start Date	End Date
Peak-Flow Statistics											
Mean_Annual_Flood	69.000	cubic feet per second	31	Y							
2_Year_Peak_Flood	359	cubic feet per second	219	Y							
5_Year_Peak_Flood	1490	cubic feet per second	219	Y							
10_Year_Peak_Flood	2910	cubic feet per second	219	Y							
25_Year_Peak_Flood	5620	cubic feet per second	219	Y							
50_Year_Peak_Flood	8360	cubic feet per second	219	Y							
100_Year_Peak_Flood	11700	cubic feet per second	219	Y							
200_Year_Peak_Flood	15700	cubic feet per second	219	Y							
500_Year_Peak_Flood	22000	cubic feet per second	219	Y							
Log_Mean_of_Annual_Peaks	2.3880	Log base 10	31	Y							
Log_STD_of_Annual_Peaks	0.6770	Log base 10	31	Y							
Log_Skew_of_Annual_Peaks	-0.1070	Log base 10	31	Y							
WRC_Mean	2.494647	Log base 10	219	Y							
WRC_STD	0.793845	Log base 10	219	Y							
WRC_Skew	-0.505433	Log base 10	219	Y							
Systematic_peak_years	61	years	219	Y							
Peak_years_with_historic_adjustment	61	years	219	Y							
Regional_skew	-0.422510493041768	Log base 10	219	Y							
Regional_skew_mean_squared_error	0.13	Log base 10 squared	219	Y							
Period_of_record_of_historic_peaks	1946-2006	years	219	Y							
Flood-Volume Statistics											
1_Day_2_Year_Maximum	72.300	cubic feet per second	31	Y							
3_Day_2_Year_Maximum	35.100	cubic feet per second	31	Y							
7_Day_2_Year_Maximum	18.000	cubic feet per second	31	Y							
15_Day_2_Year_Maximum	10.300	cubic feet per second	31	Y							
Flow-Duration Statistics											

1_Percent_Duration	112.39	cubic feet per second	41	Y	59
5_Percent_Duration	21	cubic feet per second	41	Y	59
10_Percent_Duration	6.6	cubic feet per second	41	Y	59
20_Percent_Duration	1.7	cubic feet per second	41	Y	59
25_Percent_Duration	0.94	cubic feet per second	41	Y	59
30_Percent_Duration	0.54	cubic feet per second	41	Y	59
40_Percent_Duration	0.2	cubic feet per second	41	Y	59
50_Percent_Duration	0.01	cubic feet per second	41	Y	59
60_Percent_Duration	0	cubic feet per second	41	Y	59
70_Percent_Duration	0	cubic feet per second	41	Y	59
75_Percent_Duration	0	cubic feet per second	41	Y	59
80_Percent_Duration	0	cubic feet per second	41	Y	59
90_Percent_Duration	0	cubic feet per second	41	Y	59
95_Percent_Duration	0	cubic feet per second	41	Y	59
99_Percent_Duration	0	cubic feet per second	41	Y	59
Annual Flow Statistics					
Mean_Annual_Flow	4.1900	cubic feet per second	31	Y	
Stand_Dev_of_Mean_Annual_Flow	5.3200	cubic feet per second	31	Y	
Monthly Flow Statistics					
January_Mean_Flow	4.7900	cubic feet per second	31	Y	
January_STD	9.4100	cubic feet per second	31	Y	
February_Mean_Flow	7.0900	cubic feet per second	31	Y	
February_STD	11.600	cubic feet per second	31	Y	
March_Mean_Flow	7.0000	cubic feet per second	31	Y	
March_STD	16.300	cubic feet per second	31	Y	
April_Mean_Flow	9.7300	cubic feet per second	31	Y	
April_STD	34.100	cubic feet per second	31	Y	
November_Mean_Flow	1.2300	cubic feet per second	31	Y	
November_STD	3.9000	cubic feet per second	31	Y	
December_Mean_Flow	4.2300	cubic feet per second	31	Y	
December_STD	9.4800	cubic feet per second	31	Y	
General Flow Statistics					
Minimum_daily_flow	0	cubic feet per second	41	Y	59

Maximum_daily_flow	2940	cubic feet per second	41	Y	59
Std_Dev_of_daily_flows	47.781	cubic feet per second	41	Y	59
Average_daily_streamflow	6.17	cubic feet per second	41	Y	59
Base Flow Statistics					
Number_of_years_to_compute_BFI	58	years	42	Y	59
Average_BFI_value	0.25	dimensionless	42	Y	59
Std_dev_of_annual_BFI_values	0.197	dimensionless	42	Y	59

Citations

Citation Number	Citation Name and URL
30	Imported from NWIS file
31	Imported from Basin Characteristics file
41	Wolock, D.M., 2003, Flow characteristics at U.S. Geological Survey streamgages in the conterminous United States: U.S. Geological Survey Open-File Report 03-146, digital data set
42	Wolock, D.M., 2003, Base-flow index grid for the conterminous United States: U.S. Geological Survey Open-File Report 03-263, digital data set
219	Parrett, C., Veilleux, A., Stedinger, J.R., Barth, N.A., Knifong, D.L., and Ferris, J.C., 2011, Regional skew for California, and flood frequency for selected sites in the Sacramento—San Joaquin River Basin, based on data through water year 2006: U.S. Geological Survey Scientific Investigations Report 2010—5260, 94 p.

StreamStats Data-Collection Station Report

USGS Station Number	11197250
Station Name	AVENAL C NR AVENAL CA

Click here to link to available data on NWIS-Web for this site.

Descriptive Information

Station Type	Streamgage, continuous record
Location	
Gage	
Regulation and Diversions	
Regulated?	Unknown
Period of Record	
Remarks	
Latitude (degrees NAD83)	35.85412696
Longitude (degrees NAD83)	-120.12708489
Hydrologic unit code	18030011
County	-
HCDN2009	No

Physical Characteristics

Characteristic Name	Value	Units	Citation Number
Descriptive Information			
Datum_of_Latitude_Longitude	NAD83	dimensionless	30
District_Code	06	dimensionless	30
Begin_date_of_record	10/1/1961	days	41
End_date_of_record	9/30/1986	days	41
Number_of_days_of_record	9131	days	41
Number_of_days_GT_0	3707	days	41
Topographical Characteristics			
Mean_Basin_Elevation	2012.37	feet	219
Basin Dimensional Characteristics			
Drainage_Area	57.1	square miles	30

Streamflow Statistics

Statistic Name	Value	Units	Citation Number	Preferred?	Years of Record	Standard Error, percent	Variance log-10	Lower 95% Confidence Interval	Upper 95% Confidence Interval	Start Date	End Date
Peak-Flow Statistics											
2_Year_Peak_Flood	233	cubic feet per second	219	Y							
5_Year_Peak_Flood	957	cubic feet per second	219	Y							
10_Year_Peak_Flood	1840	cubic feet per second	219	Y							
25_Year_Peak_Flood	3450	cubic feet per second	219	Y							

50_Year_Peak_Flood	5020	cubic feet per second	219	Y	
100_Year_Peak_Flood	6880	cubic feet per second	219	Y	
200_Year_Peak_Flood	9010	cubic feet per second	219	Y	
500_Year_Peak_Flood	12200	cubic feet per second	219	Y	
WRC_Mean	2.293451	Log base 10	219	Y	
WRC_STD	0.806931	Log base 10	219	Y	
WRC_Skew	-0.701733	Log base 10	219	Y	
Systematic_peak_years	24	years	219	Y	
Peak_years_with_historic_adjustment	25	years	219	Y	
Regional_skew	-0.501181208916717	Log base 10	219	Y	
Regional_skew_mean_squared_error	0.13	Log base 10 squared	219	Y	
Period_of_record_of_historic_peaks	1962-1986	years	219	Y	
Flow-Duration Statistics					
1_Percent_Duration	69.19	cubic feet per second	41	Y	25
5_Percent_Duration	12	cubic feet per second	41	Y	25
10_Percent_Duration	2.8	cubic feet per second	41	Y	25
20_Percent_Duration	0.7	cubic feet per second	41	Y	25
25_Percent_Duration	0.53	cubic feet per second	41	Y	25
30_Percent_Duration	0.33	cubic feet per second	41	Y	25
40_Percent_Duration	0.04	cubic feet per second	41	Y	25
50_Percent_Duration	0	cubic feet per second	41	Y	25
60_Percent_Duration	0	cubic feet per second	41	Y	25
70_Percent_Duration	0	cubic feet per second	41	Y	25
75_Percent_Duration	0	cubic feet per second	41	Y	25
80_Percent_Duration	0	cubic feet per second	41	Y	25
90_Percent_Duration	0	cubic feet per second	41	Y	25
95_Percent_Duration	0	cubic feet per second	41	Y	25
99_Percent_Duration	0	cubic feet per second	41	Y	25
General Flow Statistics					
Minimum_daily_flow	0	cubic feet per second	41	Y	25
Maximum_daily_flow	1190	cubic feet per second	41	Y	25
Std_Dev_of_daily_flows	29.023	cubic feet per second	41	Y	25
Average_daily_streamflow	3.7	cubic feet per second	41	Y	25
Base Flow Statistics					
Number_of_years_to_compute_BFI	25	years	42	Y	25
Average_BFI_value	0.165	dimensionless	42	Y	25
Std_dev_of_annual_BFI_values	0.168	dimensionless	42	Y	25

Citations

Citation Number	Citation Name and URL
30	Imported from NWIS file
41	Wolock, D.M., 2003, Flow characteristics at U.S. Geological Survey streamgages in the conterminous United States: U.S. Geological Survey Open-File Report 03-146, digital data set
42	Wolock, D.M., 2003, Base-flow index grid for the conterminous United States: U.S. Geological Survey Open-File Report 03-263, digital data set
219	Parrett, C., Veilleux, A., Stedinger, J.R., Barth, N.A., Knifong, D.L., and Ferris, J.C., 2011, Regional skew for California, and flood frequency for selected sites in the Sacramento•San Joaquin River Basin, based on data through water year 2006: U.S. Geological Survey Scientific Investigations Report 2010•5260, 94 p.

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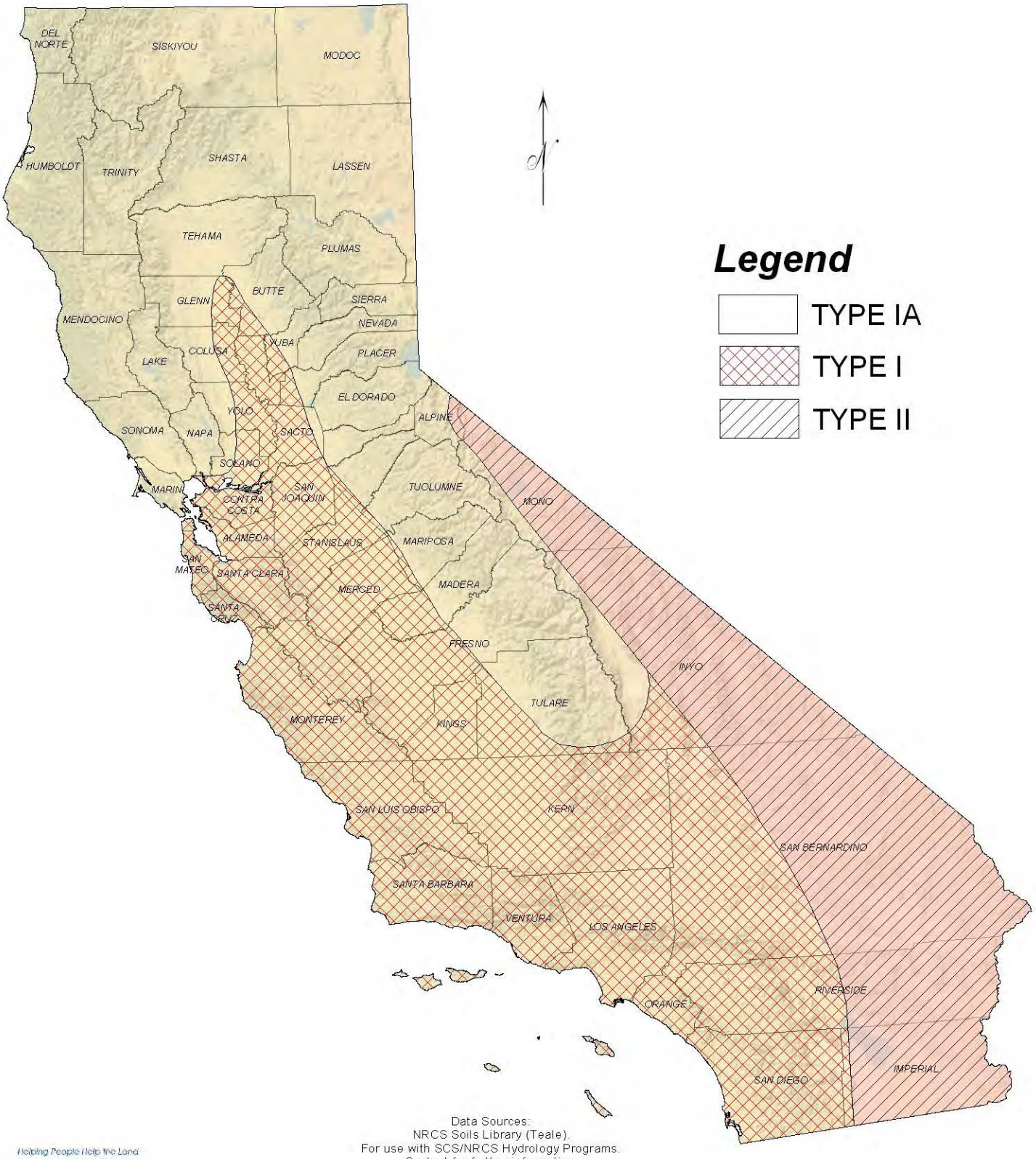
APPENDIX D. STORM DISTRIBUTION REGIONS

STORM DISTRIBUTION REGIONS, CALIFORNIA

ORIGINALLY ADOPTED FROM EFM NOTICE - 4, DATED 5/71

REVISED MARCH 1994
RE-RELEASED JUNE 2009



Data Sources:
NRCS Soils Library (Teale).
For use with SCS/NRCS Hydrology Programs.
Contact for further information:
USDA-NRCS, Davis, CA.
June 30, 2009

Helping People Help the Land
NRCS Natural Resources Conservation Service
CALIFORNIA

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Walnut Creek, CA 94596
Phone: 925.941.0017
Fax: 925.941.0018
www.wreco.com

APPENDIX E. POINT PRECIPITATION FREQUENCY ESTIMATES

NOAA Atlas 14, Volume 6, Version 2
Location name: Coalinga, California, US*
Latitude: 36.0711°, Longitude: -120.3393°
Elevation: 865 ft*
* source: Google Maps

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.082 (0.074-0.092)	0.107 (0.096-0.120)	0.143 (0.128-0.161)	0.174 (0.154-0.198)	0.220 (0.187-0.261)	0.259 (0.215-0.316)	0.301 (0.242-0.379)	0.348 (0.271-0.453)	0.418 (0.309-0.572)	0.477 (0.338-0.680)
10-min	0.118 (0.106-0.132)	0.153 (0.138-0.172)	0.204 (0.183-0.231)	0.249 (0.221-0.284)	0.316 (0.268-0.375)	0.371 (0.308-0.452)	0.432 (0.347-0.543)	0.499 (0.388-0.649)	0.599 (0.443-0.819)	0.684 (0.485-0.974)
15-min	0.142 (0.128-0.160)	0.186 (0.167-0.209)	0.247 (0.221-0.279)	0.301 (0.267-0.343)	0.382 (0.325-0.453)	0.449 (0.372-0.547)	0.522 (0.420-0.656)	0.604 (0.469-0.785)	0.725 (0.535-0.991)	0.827 (0.586-1.18)
30-min	0.195 (0.175-0.218)	0.253 (0.228-0.285)	0.338 (0.302-0.381)	0.412 (0.365-0.469)	0.521 (0.443-0.619)	0.613 (0.508-0.747)	0.713 (0.574-0.896)	0.825 (0.641-1.07)	0.990 (0.731-1.35)	1.13 (0.800-1.61)
60-min	0.274 (0.246-0.307)	0.356 (0.320-0.400)	0.475 (0.425-0.535)	0.579 (0.513-0.659)	0.733 (0.623-0.870)	0.862 (0.714-1.05)	1.00 (0.806-1.26)	1.16 (0.901-1.51)	1.39 (1.03-1.90)	1.59 (1.13-2.26)
2-hr	0.397 (0.357-0.445)	0.494 (0.444-0.556)	0.640 (0.573-0.721)	0.773 (0.685-0.880)	0.978 (0.832-1.16)	1.16 (0.959-1.41)	1.36 (1.09-1.71)	1.59 (1.24-2.07)	1.95 (1.44-2.67)	2.27 (1.61-3.24)
3-hr	0.471 (0.424-0.529)	0.583 (0.524-0.655)	0.750 (0.671-0.845)	0.904 (0.801-1.03)	1.15 (0.974-1.36)	1.36 (1.13-1.66)	1.60 (1.29-2.01)	1.89 (1.47-2.45)	2.33 (1.72-3.18)	2.72 (1.93-3.87)
6-hr	0.626 (0.564-0.703)	0.779 (0.700-0.876)	1.01 (0.902-1.14)	1.22 (1.08-1.39)	1.54 (1.31-1.83)	1.83 (1.51-2.23)	2.15 (1.73-2.70)	2.53 (1.96-3.28)	3.11 (2.29-4.25)	3.62 (2.57-5.16)
12-hr	0.767 (0.690-0.861)	1.01 (0.912-1.14)	1.36 (1.22-1.54)	1.67 (1.48-1.90)	2.11 (1.79-2.51)	2.48 (2.05-3.02)	2.87 (2.31-3.60)	3.30 (2.56-4.29)	3.92 (2.90-5.37)	4.44 (3.15-6.33)
24-hr	0.905 (0.827-1.01)	1.28 (1.17-1.44)	1.79 (1.63-2.01)	2.21 (2.00-2.50)	2.80 (2.46-3.25)	3.26 (2.82-3.85)	3.74 (3.17-4.50)	4.24 (3.50-5.22)	4.93 (3.94-6.29)	5.47 (4.25-7.20)
2-day	1.10 (1.00-1.22)	1.56 (1.43-1.74)	2.18 (1.99-2.45)	2.70 (2.44-3.05)	3.42 (3.01-3.96)	3.98 (3.44-4.70)	4.56 (3.87-5.49)	5.17 (4.28-6.38)	6.01 (4.80-7.68)	6.67 (5.18-8.78)
3-day	1.22 (1.11-1.36)	1.73 (1.57-1.93)	2.41 (2.19-2.70)	2.98 (2.70-3.36)	3.77 (3.32-4.37)	4.40 (3.80-5.19)	5.05 (4.28-6.08)	5.73 (4.74-7.07)	6.68 (5.33-8.53)	7.43 (5.77-9.78)
4-day	1.32 (1.21-1.48)	1.86 (1.70-2.08)	2.59 (2.36-2.90)	3.20 (2.90-3.61)	4.06 (3.58-4.71)	4.74 (4.10-5.59)	5.45 (4.62-6.56)	6.20 (5.13-7.64)	7.24 (5.79-9.25)	8.08 (6.26-10.6)
7-day	1.52 (1.39-1.70)	2.10 (1.92-2.35)	2.90 (2.65-3.25)	3.59 (3.25-4.05)	4.56 (4.02-5.29)	5.34 (4.62-6.31)	6.17 (5.23-7.43)	7.05 (5.83-8.69)	8.30 (6.63-10.6)	9.30 (7.21-12.2)
10-day	1.66 (1.52-1.85)	2.27 (2.07-2.54)	3.12 (2.85-3.50)	3.86 (3.49-4.35)	4.92 (4.33-5.70)	5.78 (5.00-6.82)	6.69 (5.67-8.06)	7.67 (6.35-9.46)	9.07 (7.25-11.6)	10.2 (7.92-13.4)
20-day	2.00 (1.83-2.24)	2.72 (2.48-3.04)	3.73 (3.40-4.18)	4.61 (4.17-5.20)	5.90 (5.19-6.84)	6.96 (6.02-8.21)	8.10 (6.86-9.75)	9.33 (7.72-11.5)	11.1 (8.86-14.2)	12.5 (9.73-16.5)
30-day	2.38 (2.17-2.65)	3.21 (2.93-3.58)	4.39 (4.00-4.92)	5.42 (4.91-6.12)	6.95 (6.11-8.05)	8.20 (7.09-9.67)	9.54 (8.08-11.5)	11.0 (9.09-13.6)	13.1 (10.4-16.7)	14.8 (11.5-19.5)
45-day	2.87 (2.62-3.20)	3.83 (3.50-4.28)	5.22 (4.75-5.84)	6.43 (5.82-7.25)	8.22 (7.23-9.53)	9.69 (8.38-11.4)	11.3 (9.54-13.6)	13.0 (10.7-16.0)	15.4 (12.3-19.7)	17.4 (13.5-22.9)
60-day	3.33 (3.05-3.72)	4.42 (4.04-4.94)	5.98 (5.45-6.70)	7.35 (6.65-8.29)	9.36 (8.24-10.8)	11.0 (9.52-13.0)	12.8 (10.8-15.4)	14.7 (12.2-18.1)	17.4 (13.9-22.2)	19.6 (15.2-25.8)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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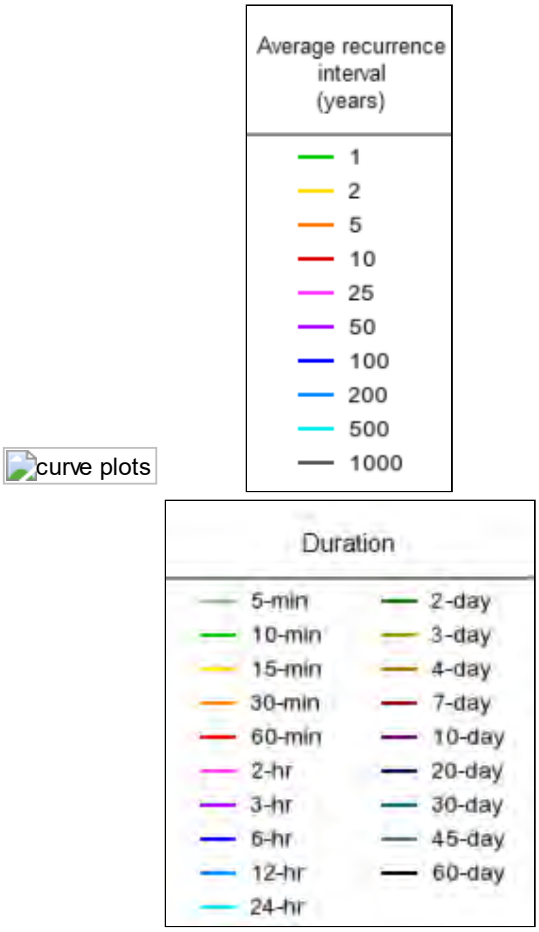
PF graphical



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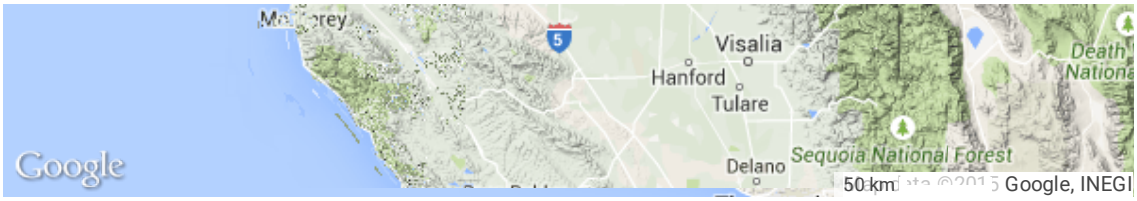
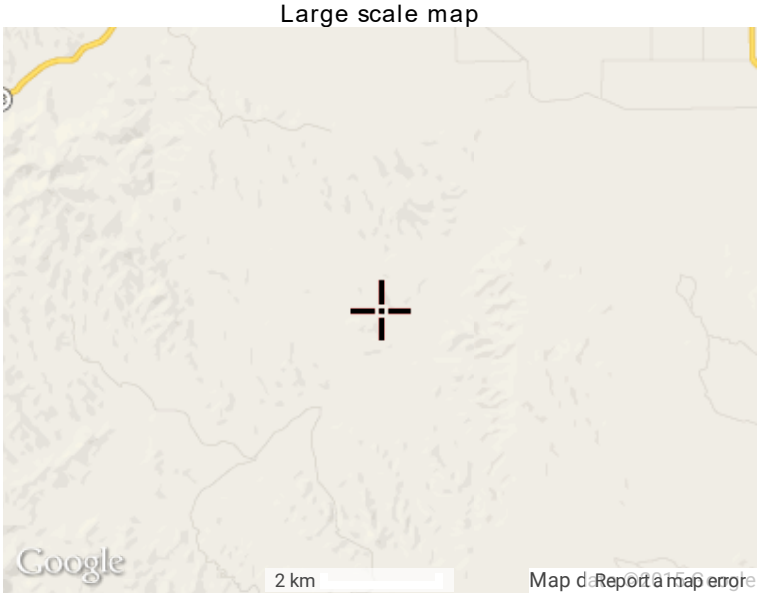
Maps & aerials

Small scale terrain

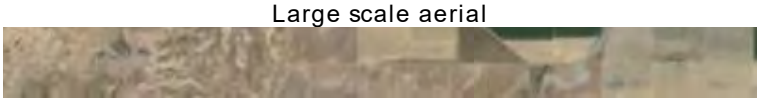


Large scale terrain

Large scale map



Large scale aerial



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US Department of Commerce
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National Weather Service
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Silver Spring, MD 20910
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NOAA Atlas 14, Volume 6, Version 2
Location name: Coalinga, California, US*
Latitude: 36.0287°, Longitude: -120.3656°
Elevation: 1169 ft*
* source: Google Maps

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

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PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.087 (0.078-0.097)	0.111 (0.100-0.125)	0.146 (0.131-0.165)	0.176 (0.156-0.200)	0.221 (0.188-0.261)	0.258 (0.215-0.313)	0.298 (0.241-0.372)	0.343 (0.269-0.442)	0.409 (0.306-0.553)	0.465 (0.334-0.654)
10-min	0.124 (0.112-0.140)	0.159 (0.143-0.179)	0.209 (0.187-0.236)	0.252 (0.224-0.287)	0.316 (0.270-0.374)	0.369 (0.307-0.448)	0.427 (0.346-0.533)	0.491 (0.385-0.633)	0.586 (0.438-0.792)	0.666 (0.479-0.937)
15-min	0.151 (0.135-0.169)	0.193 (0.173-0.217)	0.253 (0.226-0.285)	0.305 (0.271-0.347)	0.382 (0.326-0.453)	0.447 (0.372-0.542)	0.517 (0.418-0.645)	0.594 (0.466-0.766)	0.709 (0.530-0.958)	0.806 (0.579-1.13)
30-min	0.206 (0.185-0.231)	0.264 (0.237-0.296)	0.346 (0.310-0.390)	0.417 (0.370-0.475)	0.523 (0.446-0.619)	0.611 (0.508-0.741)	0.707 (0.572-0.882)	0.813 (0.637-1.05)	0.969 (0.724-1.31)	1.10 (0.791-1.55)
60-min	0.289 (0.260-0.325)	0.371 (0.333-0.417)	0.486 (0.435-0.548)	0.587 (0.520-0.668)	0.735 (0.627-0.870)	0.858 (0.715-1.04)	0.993 (0.804-1.24)	1.14 (0.895-1.47)	1.36 (1.02-1.84)	1.55 (1.11-2.18)
2-hr	0.420 (0.378-0.472)	0.524 (0.470-0.589)	0.673 (0.603-0.759)	0.807 (0.715-0.918)	1.01 (0.859-1.19)	1.18 (0.981-1.43)	1.37 (1.11-1.71)	1.58 (1.24-2.04)	1.91 (1.42-2.58)	2.18 (1.57-3.07)
3-hr	0.503 (0.452-0.564)	0.624 (0.561-0.702)	0.800 (0.716-0.902)	0.957 (0.849-1.09)	1.19 (1.02-1.41)	1.40 (1.16-1.70)	1.63 (1.31-2.03)	1.88 (1.48-2.43)	2.27 (1.70-3.07)	2.61 (1.88-3.67)
6-hr	0.671 (0.603-0.753)	0.838 (0.753-0.942)	1.08 (0.966-1.22)	1.29 (1.15-1.47)	1.61 (1.38-1.91)	1.89 (1.57-2.29)	2.19 (1.77-2.73)	2.53 (1.98-3.26)	3.04 (2.27-4.11)	3.48 (2.50-4.89)
12-hr	0.834 (0.750-0.936)	1.09 (0.978-1.22)	1.44 (1.29-1.63)	1.75 (1.55-1.99)	2.18 (1.86-2.58)	2.54 (2.11-3.08)	2.91 (2.36-3.64)	3.32 (2.60-4.28)	3.90 (2.92-5.28)	4.38 (3.15-6.16)
24-hr	1.00 (0.915-1.12)	1.38 (1.25-1.54)	1.88 (1.71-2.11)	2.29 (2.07-2.59)	2.87 (2.52-3.34)	3.33 (2.87-3.93)	3.80 (3.21-4.58)	4.29 (3.54-5.31)	4.98 (3.97-6.38)	5.53 (4.28-7.29)
2-day	1.19 (1.08-1.33)	1.64 (1.49-1.83)	2.24 (2.04-2.52)	2.75 (2.48-3.11)	3.45 (3.03-4.01)	4.01 (3.46-4.74)	4.59 (3.88-5.54)	5.19 (4.29-6.42)	6.04 (4.81-7.73)	6.70 (5.19-8.84)
3-day	1.32 (1.20-1.48)	1.81 (1.65-2.03)	2.49 (2.27-2.80)	3.06 (2.76-3.46)	3.85 (3.38-4.48)	4.48 (3.87-5.30)	5.14 (4.34-6.21)	5.84 (4.82-7.21)	6.81 (5.43-8.72)	7.59 (5.87-10.0)
4-day	1.43 (1.30-1.60)	1.96 (1.78-2.19)	2.69 (2.44-3.02)	3.31 (2.98-3.74)	4.17 (3.66-4.85)	4.86 (4.19-5.75)	5.58 (4.72-6.74)	6.35 (5.24-7.84)	7.42 (5.92-9.50)	8.29 (6.41-10.9)
7-day	1.65 (1.50-1.84)	2.24 (2.04-2.51)	3.06 (2.78-3.44)	3.77 (3.40-4.26)	4.76 (4.18-5.54)	5.57 (4.80-6.58)	6.41 (5.41-7.73)	7.30 (6.03-9.03)	8.57 (6.83-11.0)	9.59 (7.42-12.6)
10-day	1.79 (1.64-2.01)	2.43 (2.21-2.72)	3.32 (3.02-3.73)	4.09 (3.69-4.62)	5.18 (4.55-6.03)	6.07 (5.24-7.18)	7.00 (5.92-8.45)	8.00 (6.60-9.89)	9.42 (7.51-12.1)	10.6 (8.18-13.9)
20-day	2.15 (1.97-2.41)	2.92 (2.66-3.27)	4.01 (3.64-4.50)	4.95 (4.47-5.60)	6.32 (5.55-7.35)	7.43 (6.41-8.79)	8.62 (7.29-10.4)	9.89 (8.17-12.2)	11.7 (9.32-15.0)	13.2 (10.2-17.4)
30-day	2.55 (2.33-2.86)	3.45 (3.15-3.87)	4.75 (4.31-5.33)	5.87 (5.30-6.64)	7.51 (6.59-8.73)	8.85 (7.63-10.5)	10.3 (8.68-12.4)	11.8 (9.74-14.6)	14.0 (11.1-17.9)	15.7 (12.2-20.7)
45-day	3.06 (2.79-3.43)	4.13 (3.76-4.63)	5.66 (5.14-6.35)	7.00 (6.31-7.91)	8.96 (7.87-10.4)	10.6 (9.12-12.5)	12.3 (10.4-14.8)	14.1 (11.7-17.4)	16.7 (13.3-21.4)	18.8 (14.6-24.8)
60-day	3.56 (3.24-3.98)	4.77 (4.34-5.34)	6.52 (5.92-7.32)	8.05 (7.26-9.10)	10.3 (9.03-12.0)	12.1 (10.5-14.4)	14.1 (11.9-17.0)	16.2 (13.4-20.0)	19.2 (15.3-24.5)	21.6 (16.7-28.4)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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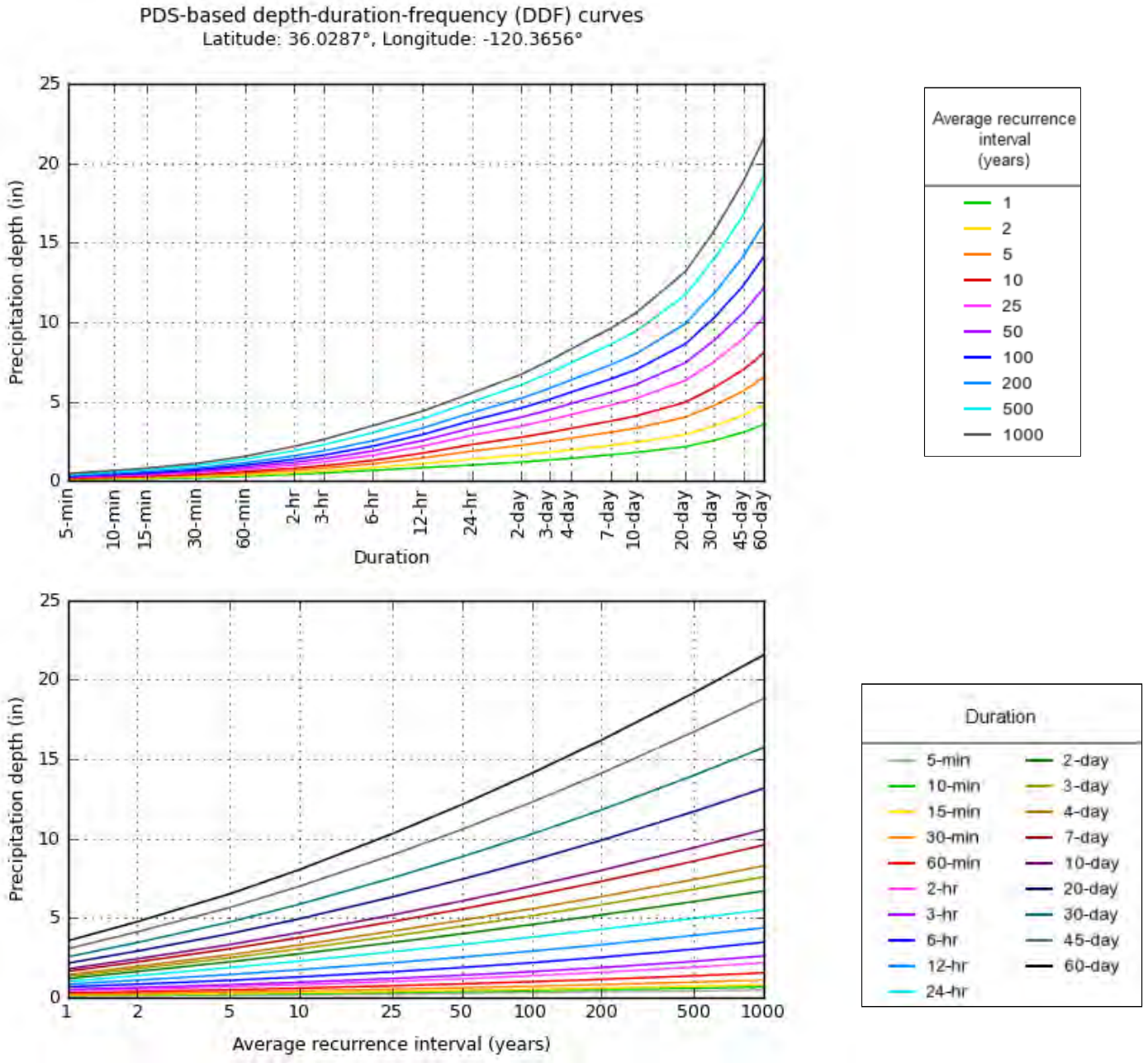
PF graphical



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Created (GMT): Wed May 13 17:49:34 2015

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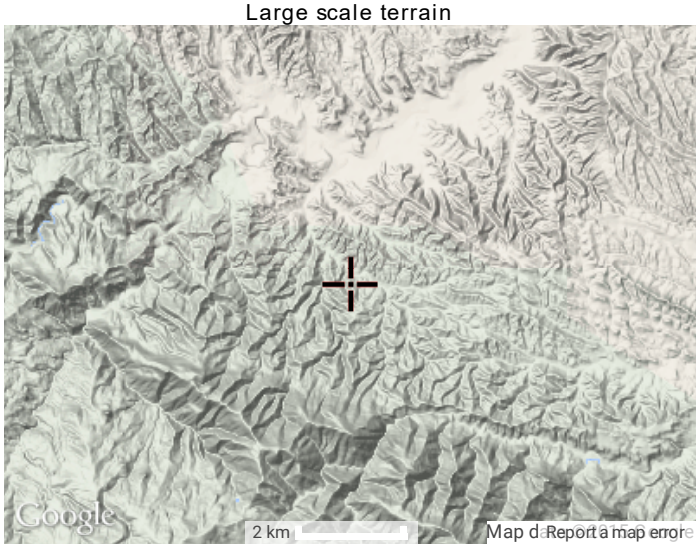
Maps & aerials

Small scale terrain

Large scale terrain



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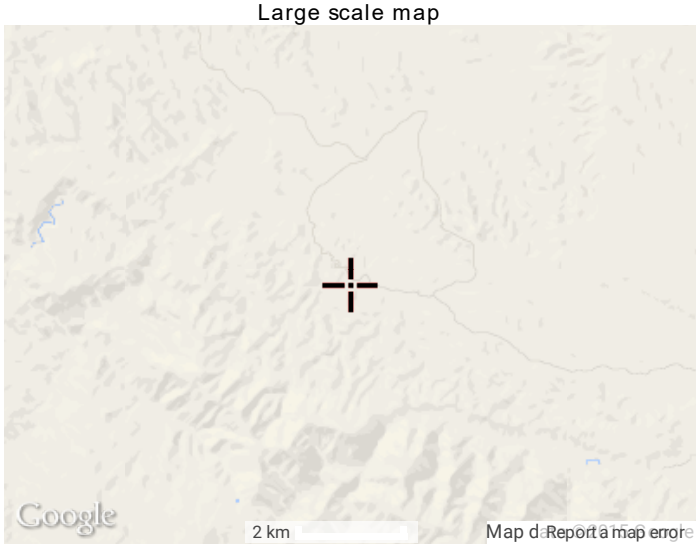
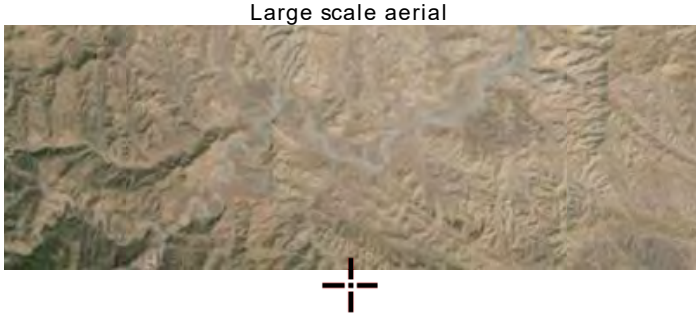


Large scale aerial



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1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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NOAA Atlas 14, Volume 6, Version 2
Location name: Coalinga, California, US*
Latitude: 36.0555°, Longitude: -120.4084°
Elevation: 1185 ft*
* source: Google Maps

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.087 (0.079-0.098)	0.113 (0.102-0.126)	0.149 (0.134-0.167)	0.180 (0.160-0.204)	0.226 (0.194-0.266)	0.264 (0.221-0.318)	0.305 (0.249-0.377)	0.350 (0.277-0.447)	0.416 (0.314-0.556)	0.471 (0.343-0.654)
10-min	0.125 (0.113-0.140)	0.162 (0.146-0.181)	0.213 (0.192-0.239)	0.258 (0.230-0.292)	0.323 (0.278-0.381)	0.378 (0.317-0.455)	0.437 (0.356-0.541)	0.501 (0.397-0.640)	0.596 (0.451-0.797)	0.675 (0.491-0.938)
15-min	0.151 (0.137-0.169)	0.195 (0.176-0.219)	0.258 (0.232-0.289)	0.312 (0.278-0.354)	0.391 (0.336-0.460)	0.457 (0.383-0.550)	0.528 (0.431-0.654)	0.606 (0.480-0.774)	0.721 (0.545-0.964)	0.817 (0.594-1.13)
30-min	0.207 (0.187-0.232)	0.268 (0.241-0.300)	0.353 (0.317-0.396)	0.427 (0.380-0.484)	0.535 (0.460-0.630)	0.625 (0.524-0.754)	0.723 (0.590-0.895)	0.830 (0.657-1.06)	0.987 (0.746-1.32)	1.12 (0.813-1.55)
60-min	0.292 (0.263-0.326)	0.376 (0.339-0.422)	0.496 (0.446-0.557)	0.600 (0.535-0.681)	0.753 (0.646-0.886)	0.880 (0.738-1.06)	1.02 (0.830-1.26)	1.17 (0.924-1.49)	1.39 (1.05-1.86)	1.57 (1.14-2.18)
2-hr	0.427 (0.385-0.477)	0.533 (0.480-0.597)	0.686 (0.617-0.771)	0.824 (0.734-0.934)	1.03 (0.885-1.21)	1.21 (1.01-1.46)	1.41 (1.15-1.74)	1.63 (1.29-2.08)	1.97 (1.49-2.63)	2.26 (1.65-3.14)
3-hr	0.514 (0.465-0.575)	0.639 (0.576-0.715)	0.820 (0.737-0.921)	0.983 (0.875-1.11)	1.23 (1.06-1.45)	1.45 (1.21-1.74)	1.69 (1.38-2.09)	1.96 (1.55-2.50)	2.38 (1.79-3.18)	2.74 (2.00-3.81)
6-hr	0.693 (0.626-0.776)	0.867 (0.782-0.971)	1.12 (1.00-1.26)	1.34 (1.20-1.52)	1.68 (1.44-1.98)	1.97 (1.65-2.38)	2.30 (1.87-2.84)	2.67 (2.11-3.40)	3.22 (2.44-4.31)	3.71 (2.70-5.15)
12-hr	0.860 (0.776-0.961)	1.13 (1.02-1.27)	1.51 (1.35-1.69)	1.83 (1.63-2.07)	2.29 (1.97-2.70)	2.67 (2.24-3.21)	3.07 (2.51-3.80)	3.51 (2.77-4.48)	4.13 (3.12-5.52)	4.64 (3.38-6.45)
24-hr	1.04 (0.948-1.16)	1.44 (1.32-1.61)	1.98 (1.81-2.22)	2.43 (2.20-2.74)	3.05 (2.69-3.53)	3.54 (3.06-4.17)	4.04 (3.42-4.86)	4.56 (3.78-5.62)	5.29 (4.22-6.75)	5.86 (4.54-7.70)
2-day	1.26 (1.15-1.41)	1.76 (1.61-1.97)	2.43 (2.21-2.72)	2.98 (2.70-3.36)	3.75 (3.31-4.35)	4.36 (3.77-5.14)	4.98 (4.22-6.00)	5.64 (4.67-6.95)	6.54 (5.23-8.35)	7.25 (5.63-9.54)
3-day	1.41 (1.29-1.57)	1.96 (1.79-2.19)	2.70 (2.46-3.02)	3.32 (3.00-3.74)	4.18 (3.68-4.84)	4.86 (4.21-5.73)	5.57 (4.72-6.70)	6.32 (5.23-7.79)	7.36 (5.88-9.39)	8.19 (6.35-10.8)
4-day	1.53 (1.40-1.71)	2.12 (1.93-2.36)	2.91 (2.66-3.26)	3.58 (3.24-4.04)	4.52 (3.98-5.24)	5.26 (4.56-6.21)	6.04 (5.12-7.27)	6.87 (5.68-8.46)	8.02 (6.41-10.2)	8.94 (6.94-11.8)
7-day	1.78 (1.63-1.98)	2.42 (2.21-2.71)	3.31 (3.02-3.71)	4.07 (3.69-4.59)	5.14 (4.53-5.96)	6.01 (5.20-7.08)	6.91 (5.86-8.32)	7.88 (6.53-9.72)	9.25 (7.40-11.8)	10.4 (8.04-13.6)
10-day	1.95 (1.79-2.18)	2.64 (2.41-2.95)	3.60 (3.28-4.03)	4.42 (4.00-4.98)	5.59 (4.92-6.48)	6.54 (5.66-7.71)	7.55 (6.40-9.08)	8.63 (7.14-10.6)	10.2 (8.13-13.0)	11.4 (8.86-15.0)
20-day	2.38 (2.17-2.65)	3.19 (2.92-3.57)	4.34 (3.96-4.86)	5.34 (4.83-6.02)	6.78 (5.97-7.86)	7.96 (6.88-9.38)	9.21 (7.81-11.1)	10.6 (8.75-13.0)	12.5 (10.0-16.0)	14.1 (11.0-18.6)
30-day	2.83 (2.58-3.15)	3.79 (3.46-4.23)	5.14 (4.68-5.75)	6.31 (5.71-7.11)	8.02 (7.06-9.29)	9.41 (8.15-11.1)	10.9 (9.24-13.1)	12.5 (10.4-15.4)	14.8 (11.9-18.9)	16.7 (13.0-22.0)
45-day	3.40 (3.10-3.79)	4.52 (4.13-5.05)	6.11 (5.57-6.84)	7.49 (6.78-8.44)	9.50 (8.36-11.0)	11.1 (9.65-13.1)	12.9 (10.9-15.5)	14.8 (12.3-18.3)	17.5 (14.0-22.4)	19.8 (15.3-26.0)
60-day	3.97 (3.63-4.42)	5.24 (4.79-5.86)	7.05 (6.42-7.89)	8.61 (7.80-9.71)	10.9 (9.59-12.6)	12.8 (11.0-15.1)	14.8 (12.5-17.8)	16.9 (14.0-20.8)	20.0 (16.0-25.5)	22.5 (17.5-29.6)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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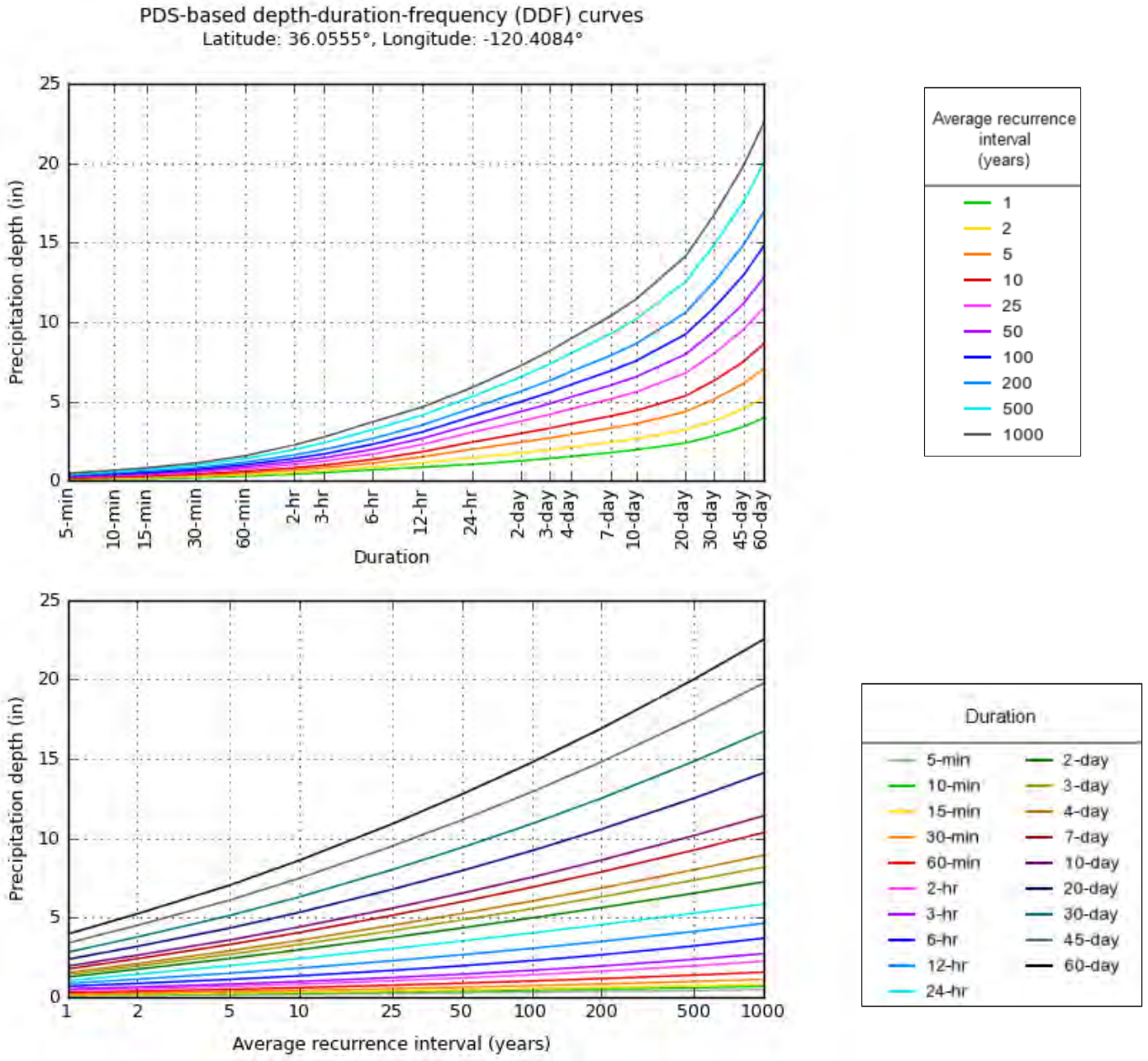
PF graphical



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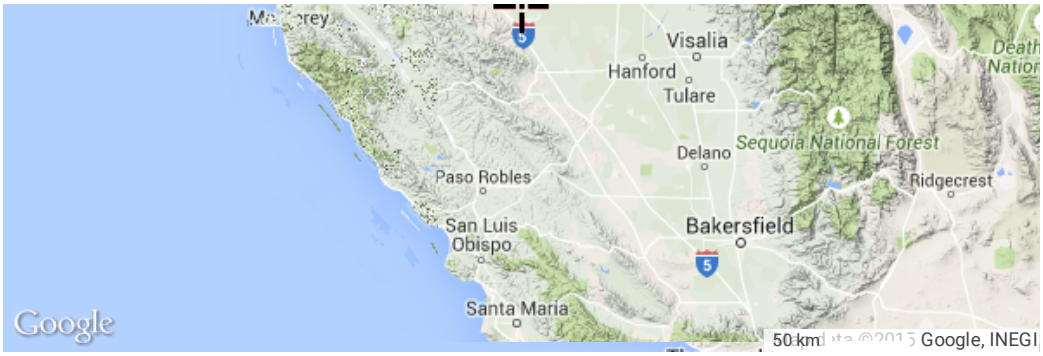
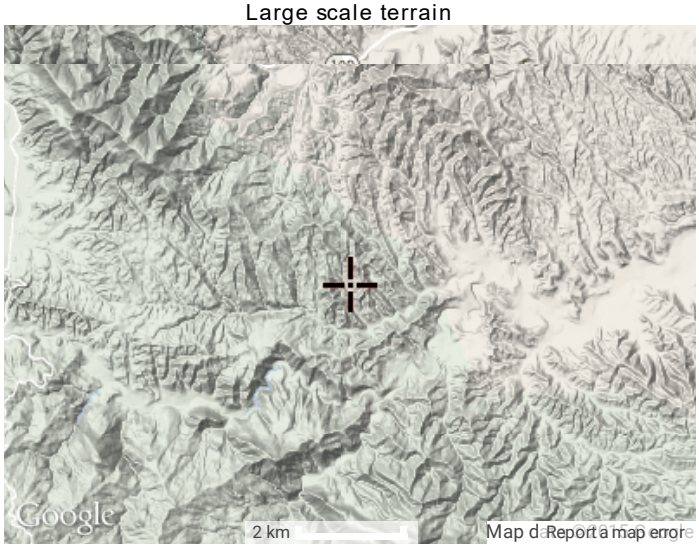
Maps & aerials

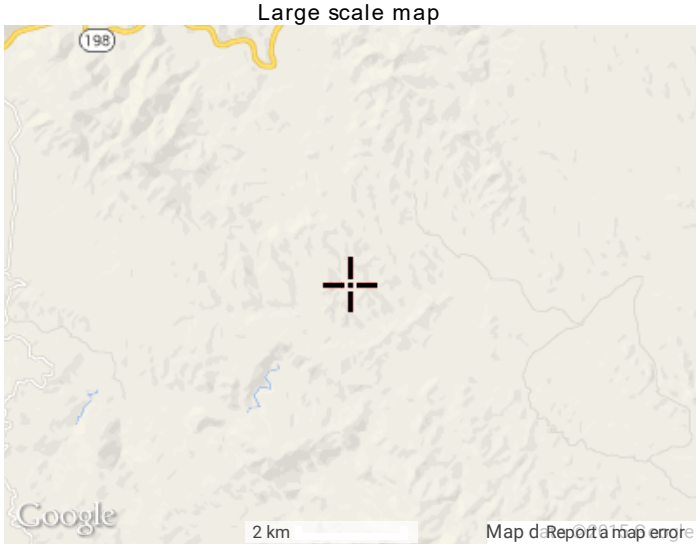
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

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National Weather Service
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1325 East West Highway
Silver Spring, MD 20910
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NOAA Atlas 14, Volume 6, Version 2
Location name: Coalinga, California, US*
Latitude: 36.0094°, Longitude: -120.4216°
Elevation: 1836 ft*
* source: Google Maps

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

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PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.110 (0.099-0.123)	0.141 (0.127-0.159)	0.185 (0.166-0.208)	0.222 (0.197-0.252)	0.275 (0.236-0.323)	0.319 (0.267-0.383)	0.365 (0.299-0.451)	0.416 (0.331-0.530)	0.491 (0.373-0.653)	0.554 (0.405-0.764)
10-min	0.158 (0.142-0.177)	0.203 (0.183-0.227)	0.265 (0.238-0.298)	0.318 (0.283-0.361)	0.394 (0.338-0.464)	0.457 (0.383-0.549)	0.524 (0.428-0.647)	0.597 (0.474-0.760)	0.704 (0.534-0.936)	0.794 (0.581-1.09)
15-min	0.191 (0.172-0.214)	0.245 (0.221-0.275)	0.320 (0.287-0.360)	0.384 (0.342-0.436)	0.477 (0.409-0.561)	0.552 (0.464-0.664)	0.633 (0.518-0.782)	0.722 (0.573-0.919)	0.851 (0.646-1.13)	0.960 (0.702-1.32)
30-min	0.263 (0.237-0.294)	0.338 (0.304-0.378)	0.440 (0.396-0.495)	0.529 (0.471-0.600)	0.656 (0.563-0.772)	0.760 (0.638-0.914)	0.872 (0.713-1.08)	0.994 (0.789-1.26)	1.17 (0.889-1.56)	1.32 (0.967-1.82)
60-min	0.371 (0.335-0.416)	0.477 (0.430-0.535)	0.622 (0.559-0.700)	0.747 (0.665-0.848)	0.927 (0.796-1.09)	1.07 (0.902-1.29)	1.23 (1.01-1.52)	1.40 (1.11-1.79)	1.66 (1.26-2.20)	1.87 (1.37-2.58)
2-hr	0.558 (0.504-0.625)	0.703 (0.633-0.788)	0.905 (0.813-1.02)	1.08 (0.962-1.23)	1.34 (1.15-1.57)	1.55 (1.30-1.86)	1.78 (1.46-2.20)	2.03 (1.61-2.59)	2.41 (1.83-3.21)	2.74 (2.00-3.78)
3-hr	0.697 (0.628-0.780)	0.875 (0.788-0.981)	1.12 (1.01-1.26)	1.34 (1.19-1.52)	1.66 (1.42-1.95)	1.92 (1.61-2.31)	2.21 (1.80-2.72)	2.52 (2.00-3.21)	3.00 (2.28-3.99)	3.41 (2.50-4.71)
6-hr	0.971 (0.876-1.09)	1.23 (1.10-1.38)	1.58 (1.42-1.78)	1.89 (1.68-2.15)	2.34 (2.01-2.75)	2.71 (2.27-3.26)	3.11 (2.54-3.84)	3.56 (2.82-4.53)	4.21 (3.20-5.61)	4.78 (3.49-6.59)
12-hr	1.23 (1.11-1.38)	1.60 (1.44-1.80)	2.11 (1.89-2.37)	2.53 (2.25-2.87)	3.14 (2.69-3.69)	3.62 (3.04-4.36)	4.14 (3.38-5.11)	4.69 (3.72-5.97)	5.47 (4.16-7.29)	6.12 (4.48-8.45)
24-hr	1.54 (1.41-1.73)	2.08 (1.89-2.32)	2.79 (2.53-3.12)	3.38 (3.05-3.81)	4.20 (3.69-4.87)	4.84 (4.18-5.72)	5.51 (4.67-6.65)	6.22 (5.14-7.68)	7.21 (5.75-9.21)	8.00 (6.20-10.5)
2-day	1.90 (1.74-2.13)	2.56 (2.34-2.87)	3.46 (3.15-3.88)	4.21 (3.80-4.75)	5.26 (4.63-6.11)	6.10 (5.27-7.21)	6.98 (5.91-8.42)	7.92 (6.55-9.78)	9.24 (7.37-11.8)	10.3 (7.99-13.6)
3-day	2.15 (1.97-2.41)	2.90 (2.64-3.24)	3.90 (3.55-4.38)	4.76 (4.30-5.37)	5.98 (5.25-6.94)	6.96 (6.01-8.22)	8.00 (6.77-9.64)	9.11 (7.53-11.2)	10.7 (8.53-13.7)	12.0 (9.28-15.8)
4-day	2.35 (2.15-2.63)	3.16 (2.88-3.54)	4.25 (3.87-4.77)	5.19 (4.69-5.86)	6.53 (5.74-7.58)	7.62 (6.58-9.00)	8.76 (7.42-10.6)	10.0 (8.27-12.3)	11.8 (9.39-15.0)	13.2 (10.2-17.4)
7-day	2.80 (2.56-3.13)	3.72 (3.39-4.16)	4.97 (4.52-5.58)	6.05 (5.46-6.83)	7.59 (6.67-8.81)	8.84 (7.64-10.4)	10.2 (8.62-12.3)	11.6 (9.61-14.4)	13.7 (10.9-17.5)	15.4 (12.0-20.3)
10-day	3.13 (2.86-3.50)	4.14 (3.77-4.63)	5.51 (5.01-6.18)	6.68 (6.04-7.55)	8.37 (7.36-9.71)	9.74 (8.42-11.5)	11.2 (9.49-13.5)	12.8 (10.6-15.8)	15.1 (12.1-19.3)	17.0 (13.2-22.4)
20-day	3.92 (3.58-4.39)	5.15 (4.70-5.77)	6.82 (6.21-7.65)	8.25 (7.46-9.32)	10.3 (9.05-12.0)	12.0 (10.3-14.1)	13.8 (11.6-16.6)	15.7 (13.0-19.4)	18.6 (14.8-23.7)	20.9 (16.2-27.6)
30-day	4.71 (4.30-5.26)	6.17 (5.63-6.91)	8.15 (7.42-9.14)	9.84 (8.89-11.1)	12.2 (10.8-14.2)	14.2 (12.3-16.8)	16.3 (13.8-19.7)	18.6 (15.4-23.0)	22.0 (17.6-28.1)	24.8 (19.3-32.7)
45-day	5.65 (5.16-6.31)	7.37 (6.72-8.24)	9.69 (8.82-10.9)	11.7 (10.5-13.2)	14.4 (12.7-16.8)	16.7 (14.4-19.7)	19.1 (16.2-23.1)	21.8 (18.0-27.0)	25.7 (20.5-32.9)	29.1 (22.5-38.3)
60-day	6.66 (6.08-7.44)	8.63 (7.87-9.66)	11.3 (10.3-12.7)	13.5 (12.2-15.3)	16.7 (14.7-19.4)	19.3 (16.7-22.8)	22.0 (18.6-26.6)	25.1 (20.7-31.0)	29.5 (23.6-37.8)	33.3 (25.8-43.9)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

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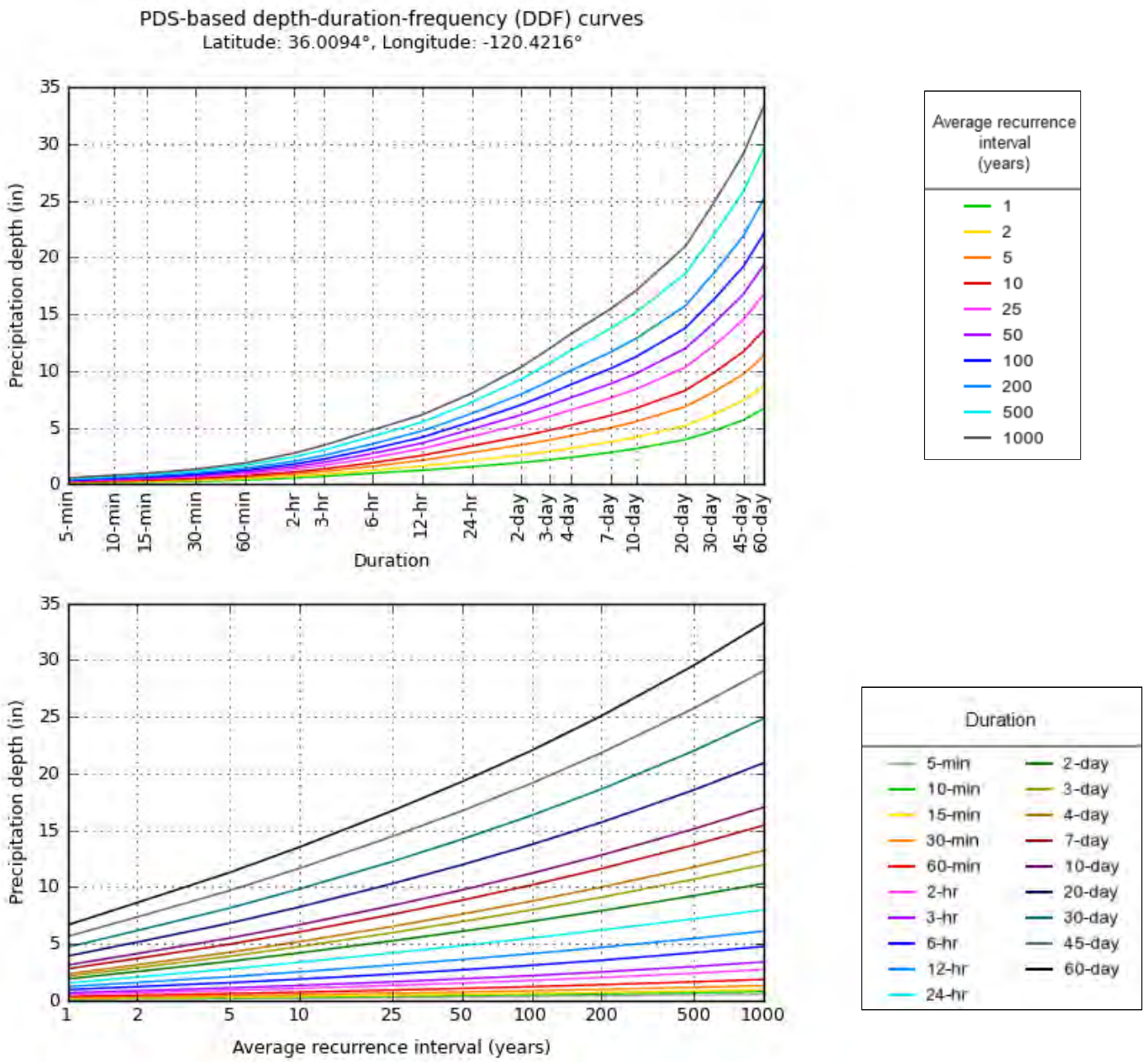
PF graphical



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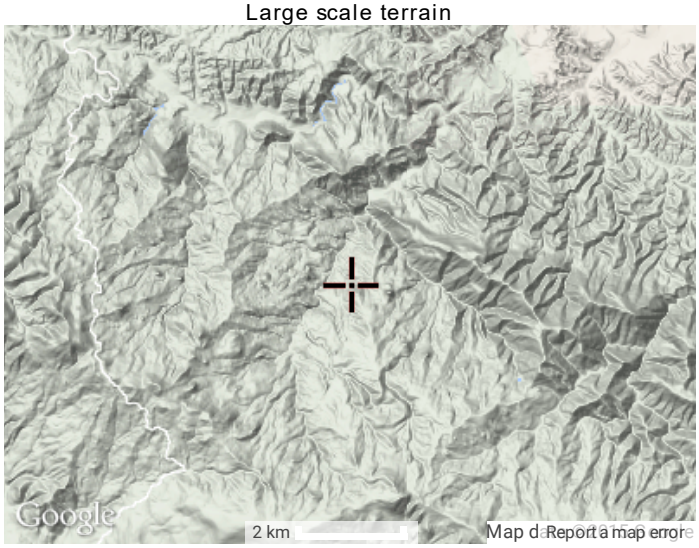
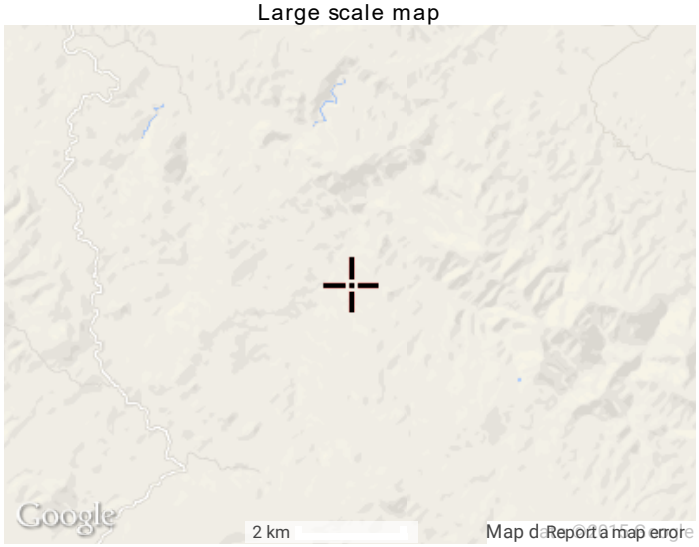
Large scale terrain



Large scale map



Large scale aerial

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NOAA Atlas 14, Volume 6, Version 2
Location name: Coalinga, California, US*
Latitude: 36.0328°, Longitude: -120.4892°
Elevation: 2538 ft*
* source: Google Maps

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.121 (0.110-0.135)	0.155 (0.140-0.173)	0.201 (0.181-0.225)	0.240 (0.215-0.271)	0.296 (0.257-0.346)	0.342 (0.290-0.407)	0.391 (0.324-0.477)	0.445 (0.359-0.558)	0.524 (0.405-0.684)	0.590 (0.441-0.796)
10-min	0.174 (0.158-0.194)	0.222 (0.201-0.248)	0.288 (0.259-0.322)	0.344 (0.308-0.388)	0.425 (0.368-0.495)	0.491 (0.416-0.584)	0.561 (0.465-0.684)	0.638 (0.514-0.800)	0.751 (0.581-0.980)	0.845 (0.632-1.14)
15-min	0.210 (0.191-0.235)	0.268 (0.243-0.300)	0.348 (0.314-0.390)	0.416 (0.372-0.470)	0.514 (0.445-0.599)	0.593 (0.503-0.706)	0.678 (0.562-0.827)	0.772 (0.622-0.967)	0.908 (0.703-1.19)	1.02 (0.765-1.38)
30-min	0.289 (0.262-0.323)	0.369 (0.334-0.412)	0.478 (0.431-0.535)	0.572 (0.512-0.646)	0.706 (0.611-0.823)	0.815 (0.692-0.971)	0.932 (0.772-1.14)	1.06 (0.855-1.33)	1.25 (0.966-1.63)	1.41 (1.05-1.90)
60-min	0.411 (0.372-0.458)	0.524 (0.473-0.585)	0.679 (0.612-0.760)	0.812 (0.726-0.916)	1.00 (0.868-1.17)	1.16 (0.982-1.38)	1.32 (1.10-1.61)	1.51 (1.21-1.89)	1.77 (1.37-2.31)	2.00 (1.49-2.69)
2-hr	0.626 (0.567-0.699)	0.784 (0.709-0.876)	1.00 (0.904-1.12)	1.19 (1.07-1.34)	1.46 (1.27-1.71)	1.69 (1.43-2.01)	1.93 (1.60-2.36)	2.20 (1.78-2.76)	2.60 (2.01-3.40)	2.94 (2.20-3.98)
3-hr	0.794 (0.719-0.886)	0.992 (0.897-1.11)	1.27 (1.14-1.42)	1.50 (1.34-1.70)	1.84 (1.60-2.15)	2.13 (1.80-2.53)	2.43 (2.02-2.97)	2.77 (2.23-3.47)	3.28 (2.54-4.28)	3.71 (2.78-5.01)
6-hr	1.13 (1.02-1.26)	1.42 (1.28-1.59)	1.82 (1.64-2.04)	2.16 (1.94-2.44)	2.66 (2.30-3.10)	3.06 (2.60-3.65)	3.50 (2.90-4.27)	3.98 (3.21-4.99)	4.69 (3.63-6.12)	5.30 (3.96-7.15)
12-hr	1.44 (1.30-1.60)	1.86 (1.69-2.08)	2.43 (2.19-2.73)	2.91 (2.61-3.29)	3.58 (3.10-4.18)	4.12 (3.50-4.90)	4.68 (3.88-5.71)	5.28 (4.26-6.62)	6.14 (4.75-8.01)	6.83 (5.11-9.23)
24-hr	1.84 (1.68-2.05)	2.46 (2.25-2.74)	3.27 (2.99-3.66)	3.95 (3.58-4.45)	4.88 (4.30-5.65)	5.61 (4.85-6.61)	6.36 (5.39-7.65)	7.14 (5.92-8.80)	8.24 (6.59-10.5)	9.11 (7.08-12.0)
2-day	2.28 (2.09-2.54)	3.05 (2.79-3.40)	4.07 (3.72-4.56)	4.93 (4.47-5.55)	6.14 (5.41-7.11)	7.10 (6.15-8.36)	8.10 (6.87-9.74)	9.16 (7.59-11.3)	10.7 (8.52-13.6)	11.9 (9.21-15.6)
3-day	2.58 (2.36-2.88)	3.44 (3.15-3.84)	4.59 (4.19-5.14)	5.58 (5.05-6.28)	6.97 (6.14-8.07)	8.10 (7.01-9.54)	9.28 (7.87-11.2)	10.6 (8.74-13.0)	12.4 (9.88-15.8)	13.8 (10.7-18.2)
4-day	2.85 (2.61-3.18)	3.79 (3.47-4.23)	5.06 (4.61-5.66)	6.14 (5.56-6.91)	7.68 (6.77-8.90)	8.94 (7.74-10.5)	10.3 (8.71-12.3)	11.7 (9.69-14.4)	13.7 (11.0-17.5)	15.4 (12.0-20.3)
7-day	3.43 (3.14-3.82)	4.51 (4.12-5.03)	5.97 (5.44-6.67)	7.21 (6.54-8.13)	9.00 (7.93-10.4)	10.5 (9.06-12.3)	12.0 (10.2-14.5)	13.7 (11.4-16.9)	16.2 (12.9-20.6)	18.2 (14.1-23.9)
10-day	3.88 (3.55-4.33)	5.07 (4.63-5.66)	6.67 (6.09-7.46)	8.04 (7.29-9.06)	10.0 (8.81-11.6)	11.6 (10.1-13.7)	13.3 (11.3-16.0)	15.2 (12.6-18.7)	17.9 (14.3-22.9)	20.2 (15.7-26.5)
20-day	4.95 (4.53-5.52)	6.43 (5.88-7.17)	8.40 (7.66-9.39)	10.1 (9.13-11.3)	12.5 (11.0-14.4)	14.4 (12.5-17.0)	16.5 (14.0-19.8)	18.8 (15.6-23.1)	22.2 (17.7-28.3)	25.0 (19.4-32.9)
30-day	5.95 (5.44-6.63)	7.71 (7.05-8.60)	10.0 (9.16-11.2)	12.0 (10.9-13.5)	14.8 (13.0-17.1)	17.1 (14.8-20.1)	19.5 (16.6-23.5)	22.2 (18.4-27.4)	26.2 (21.0-33.5)	29.6 (23.0-38.9)
45-day	7.17 (6.56-7.99)	9.24 (8.45-10.3)	12.0 (10.9-13.4)	14.3 (12.9-16.1)	17.5 (15.4-20.2)	20.1 (17.4-23.7)	22.9 (19.4-27.5)	26.0 (21.6-32.0)	30.6 (24.5-39.1)	34.6 (26.8-45.4)
60-day	8.49 (7.77-9.47)	10.9 (9.95-12.1)	14.0 (12.8-15.7)	16.6 (15.1-18.7)	20.3 (17.9-23.5)	23.3 (20.1-27.4)	26.4 (22.4-31.8)	30.0 (24.8-36.9)	35.2 (28.2-44.9)	39.7 (30.9-52.2)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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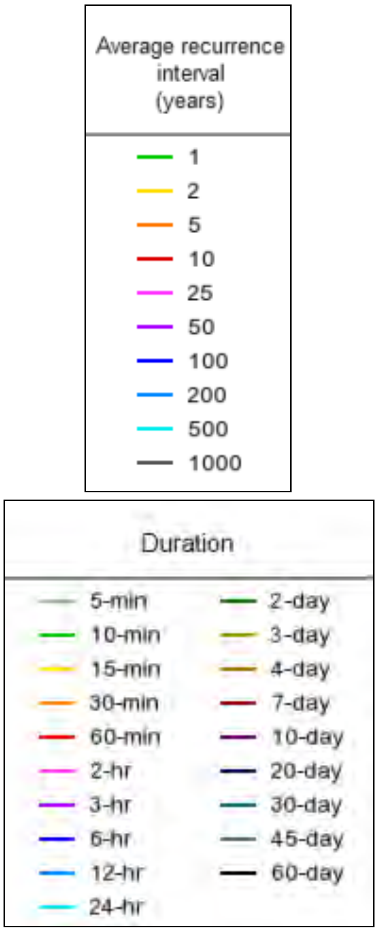
PF graphical



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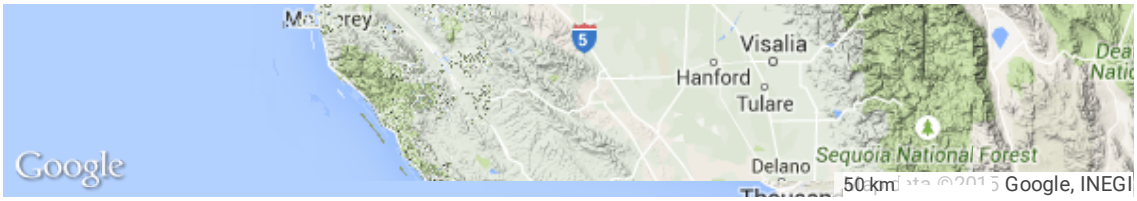
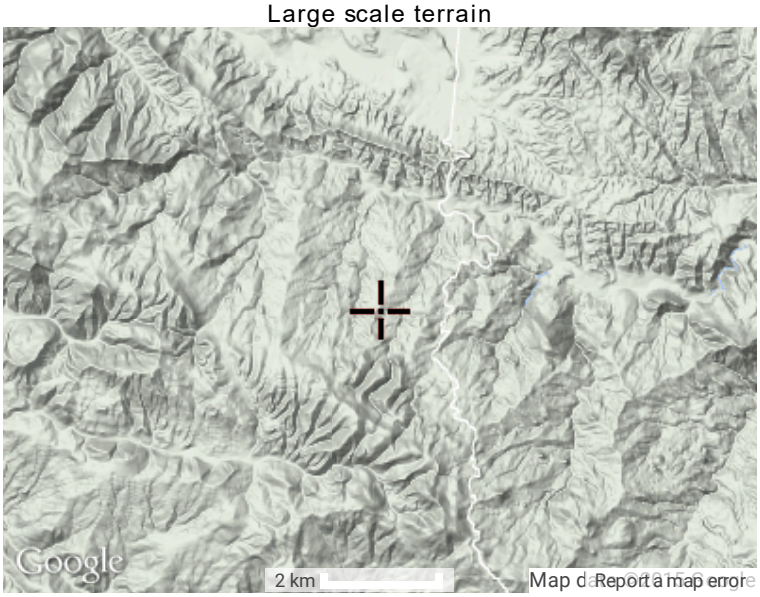
Maps & aerials

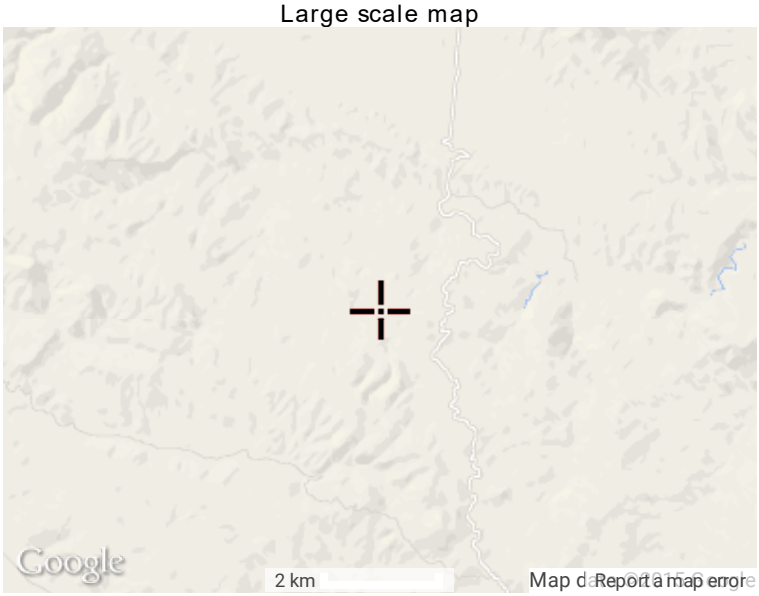
Small scale terrain



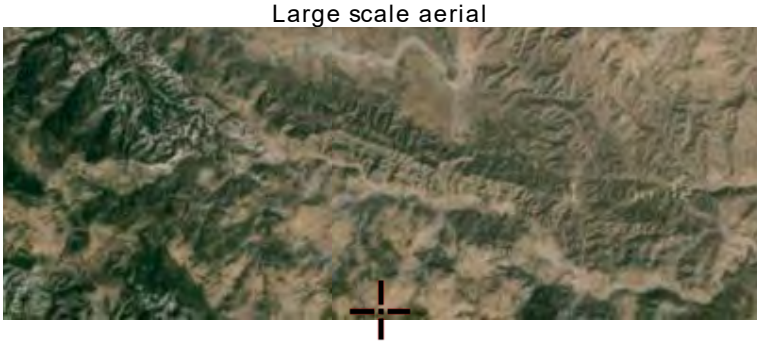
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Office of Hydrologic Development
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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APPENDIX F. 24-HOUR RAINFALL DISTRIBUTIONS

Appendix B Synthetic Rainfall Distributions and Rainfall Data Sources

The highest peak discharges from small watersheds in the United States are usually caused by intense, brief rainfalls that may occur as distinct events or as part of a longer storm. These intense rainstorms do not usually extended over a large area and intensities vary greatly. One common practice in rainfall-runoff analysis is to develop a synthetic rainfall distribution to use in lieu of actual storm events. This distribution includes maximum rainfall intensities for the selected design frequency arranged in a sequence that is critical for producing peak runoff.

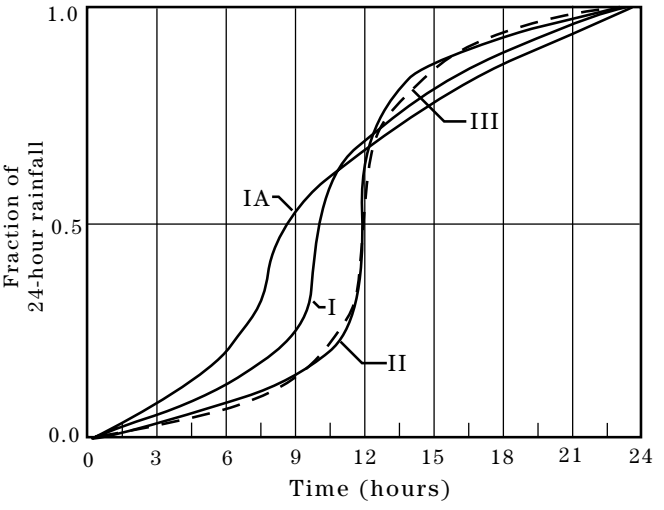
Synthetic rainfall distributions

The length of the most intense rainfall period contributing to the peak runoff rate is related to the time of concentration (T_c) for the watershed. In a hydrograph created with NRCS procedures, the duration of rainfall that directly contributes to the peak is about 170 percent of the T_c. For example, the most intense 8.5-minute rainfall period would contribute to the peak discharge for a watershed with a T_c of 5 minutes. The most intense 8.5-hour period would contribute to the peak for a watershed with a 5-hour T_c.

Different rainfall distributions can be developed for each of these watersheds to emphasize the critical rainfall duration for the peak discharges. However, to avoid the use of a different set of rainfall intensities for each drainage area size, a set of synthetic rainfall distributions having "nested" rainfall intensities was developed. The set "maximizes" the rainfall intensities by incorporating selected short duration intensities within those needed for longer durations at the same probability level.

For the size of the drainage areas for which NRCS usually provides assistance, a storm period of 24 hours was chosen the synthetic rainfall distributions. The 24-hour storm, while longer than that needed to determine peaks for these drainage areas, is appropriate for determining runoff volumes. Therefore, a single storm duration and associated synthetic rainfall distribution can be used to represent not only the peak discharges but also the runoff volumes for a range of drainage area sizes.

Figure B-1 SCS 24-hour rainfall distributions



The intensity of rainfall varies considerably during a storm as well as geographic regions. To represent various regions of the United States, NRCS developed four synthetic 24-hour rainfall distributions (I, IA, II, and III) from available National Weather Service (NWS) duration-frequency data (Hershfield 1061; Frederick et al., 1977) or local storm data. Type IA is the least intense and type II the most intense short duration rainfall. The four distributions are shown in figure B-1, and figure B-2 shows their approximate geographic boundaries.

Types I and IA represent the Pacific maritime climate with wet winters and dry summers. Type III represents Gulf of Mexico and Atlantic coastal areas where tropical storms bring large 24-hour rainfall amounts. Type II represents the rest of the country. For more precise distribution boundaries in a state having more than one type, contact the NRCS State Conservation Engineer.

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APPENDIX G. 100-YEAR AND 50-YEAR PRECIPITATION RAINFALL CURVES

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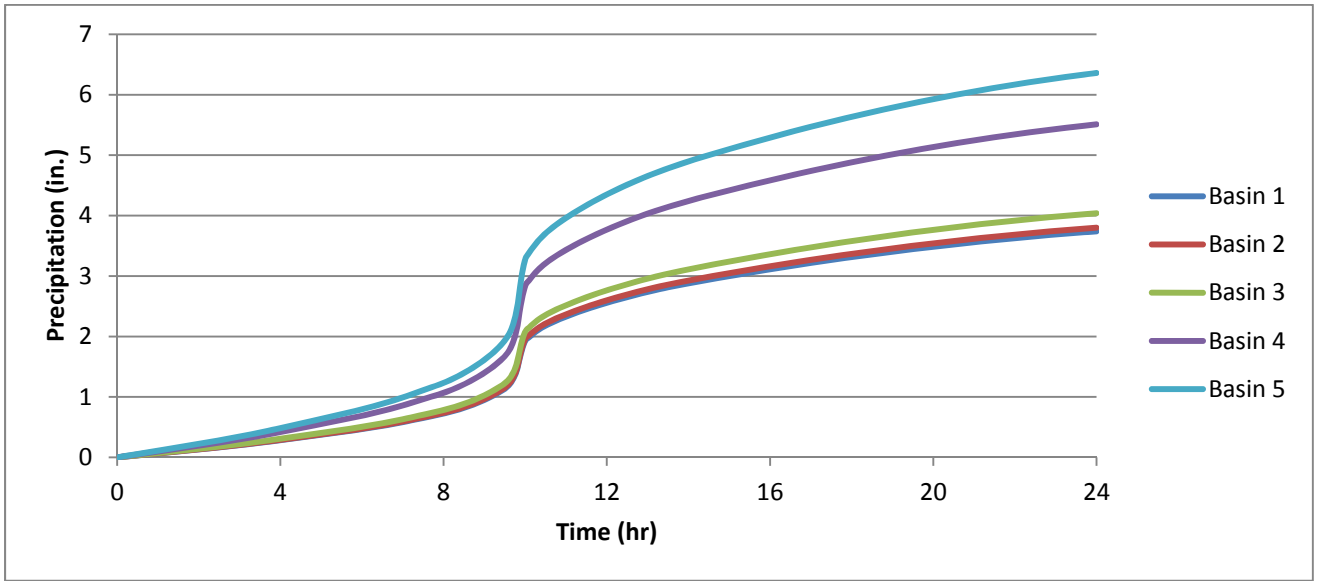
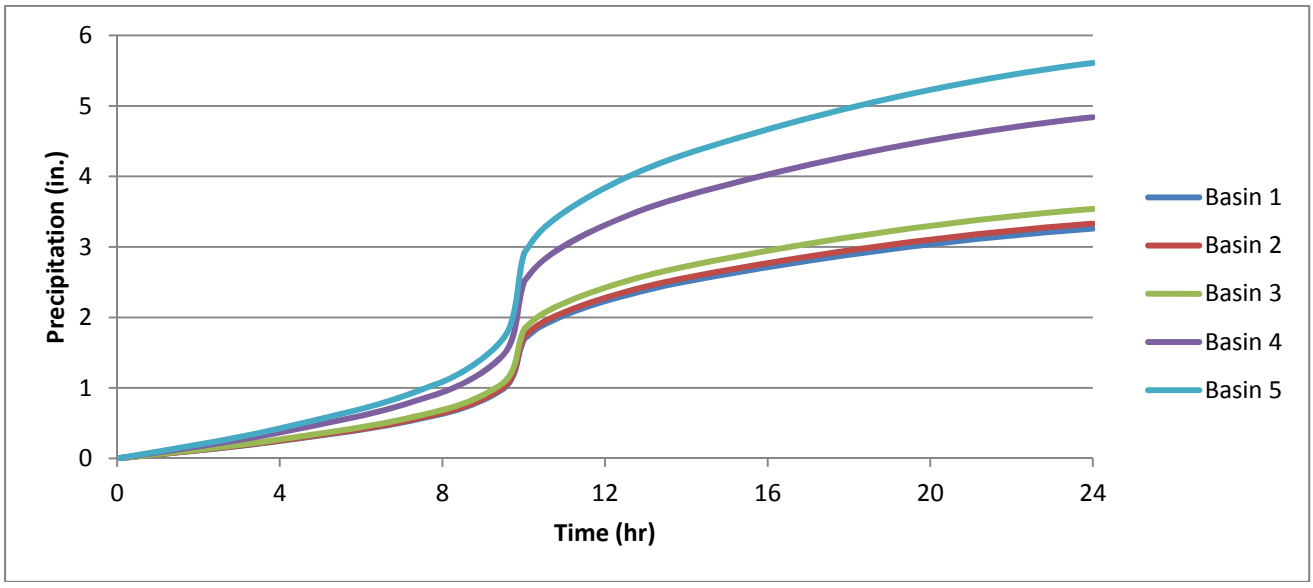


100-Year Precipitation Rainfall Curves for 24-Hour Storm Duration



50-Year Precipitation Rainfall Curves for 24-Hour Storm Duration

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Walnut Creek, CA 94596
Phone: 925.941.0017
Fax: 925.941.0018
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APPENDIX H. WEB SOIL SURVEY

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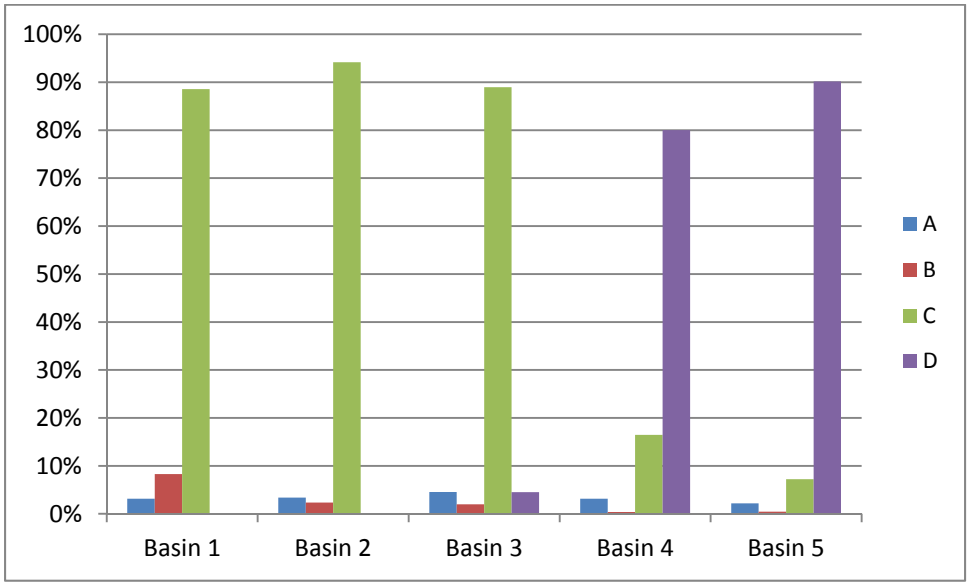
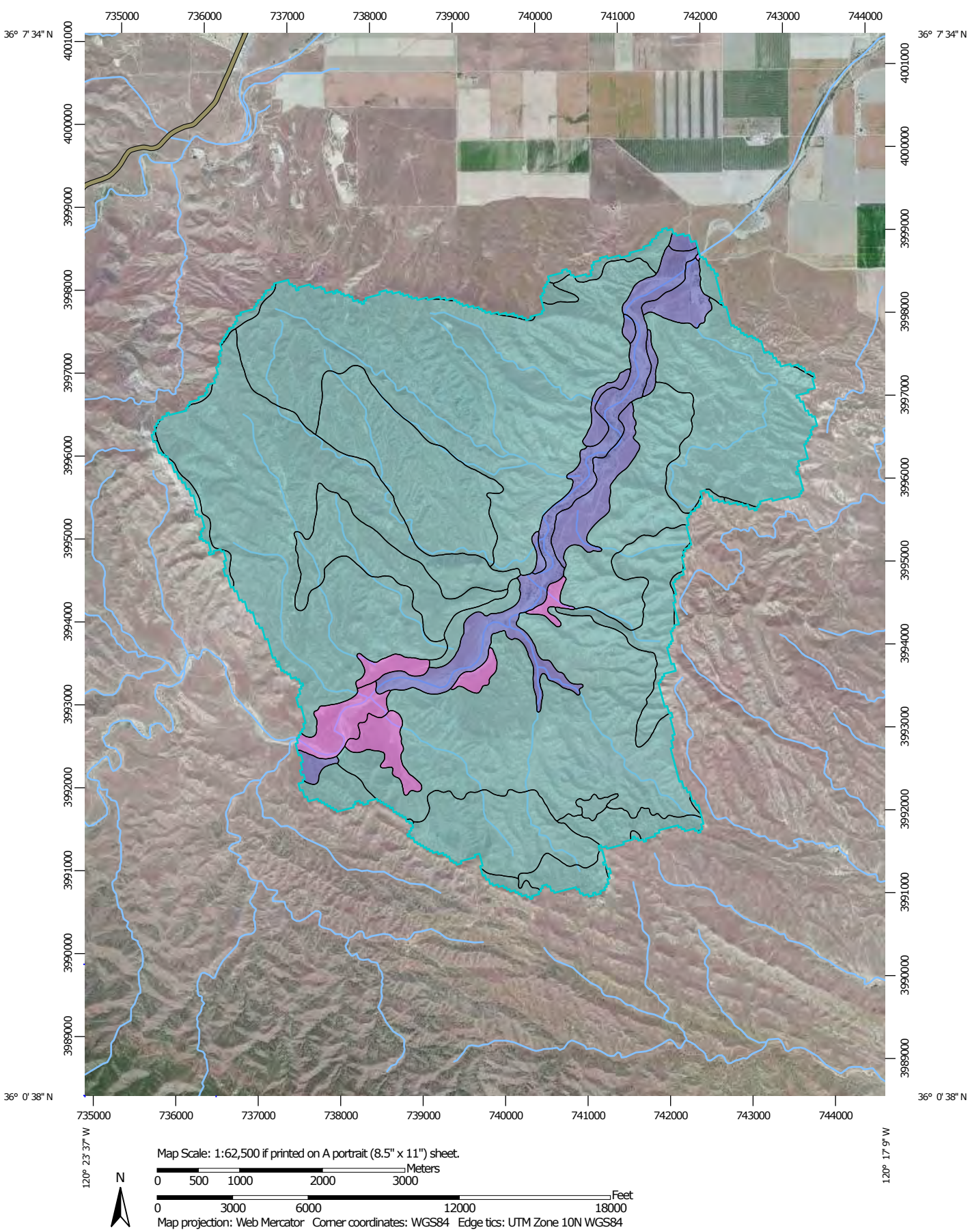
Percentages of Hydrologic Soil Groups for Watershed Subbasins

Watershed Subbasin	Hydrologic Soil Group			
	A	B	C	D
Basin 1	3%	8%	89%	0%
Basin 2	3%	2%	94%	0%
Basin 3	5%	2%	89%	5%
Basin 4	3%	0%	16%	80%
Basin 5	2%	0%	7%	90%



Percentages of Hydrologic Soil Groups for Watershed Subbasins

Hydrologic Soil Group—Fresno County, California, Western Part
(Basin1)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Fresno County, California, Western Part
Survey Area Data: Version 9, Sep 30, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 12, 2010—May 15, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Fresno County, California, Western Part (CA653)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
404	Milham-Guijarral association, 5 to 15 percent slopes	C	72.8	0.7%
425	Kimberlina sandy loam, 0 to 2 percent slopes	A	56.2	0.6%
445	Excelsior sandy loam, 0 to 2 percent slopes, MLRA 17	A	132.8	1.4%
447	Excelsior sandy loam, sandy substratum, 0 to 2 percent slopes	B	312.5	3.2%
452	Milham sandy loam, 2 to 5 percent slopes	C	56.9	0.6%
640	Kettleman-Delgado-Mercey association, 5 to 15 percent slopes, eroded	C	580.9	6.0%
641	Mercey-Delgado-Kettleman association, 5 to 15 percent slopes	C	1,184.4	12.2%
642	Mercey-Delgado-Kettleman association, 15 to 30 percent slopes, eroded	C	2,523.3	25.9%
643	Mercey-Delgado-Kettleman association, 15 to 30 percent slopes	C	3,216.5	33.0%
644	Mercey-Kettleman-Delgado complex, 30 to 50 percent slopes, eroded	C	269.0	2.8%
645	Delgado-Mercey-Kettleman association, 30 to 50 percent slopes	C	438.0	4.5%
711	Currymountain-Wisflat-Borreguero association, 30 to 75 percent slopes	C	265.5	2.7%
741	Anela-vernalis association, 0 to 5 percent slopes	A	118.3	1.2%
822	Altamont clay, 5 to 8 percent slopes	C	19.2	0.2%
863	Vernalis loam, 0 to 2 percent slopes	B	23.6	0.2%

Hydrologic Soil Group— Summary by Map Unit — Fresno County, California, Western Part (CA653)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
960	Excelsior, sandy substratum-westhaven association, flooded, 0 to 2 percent slopes	B	472.8	4.9%
Totals for Area of Interest			**9,742.7**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

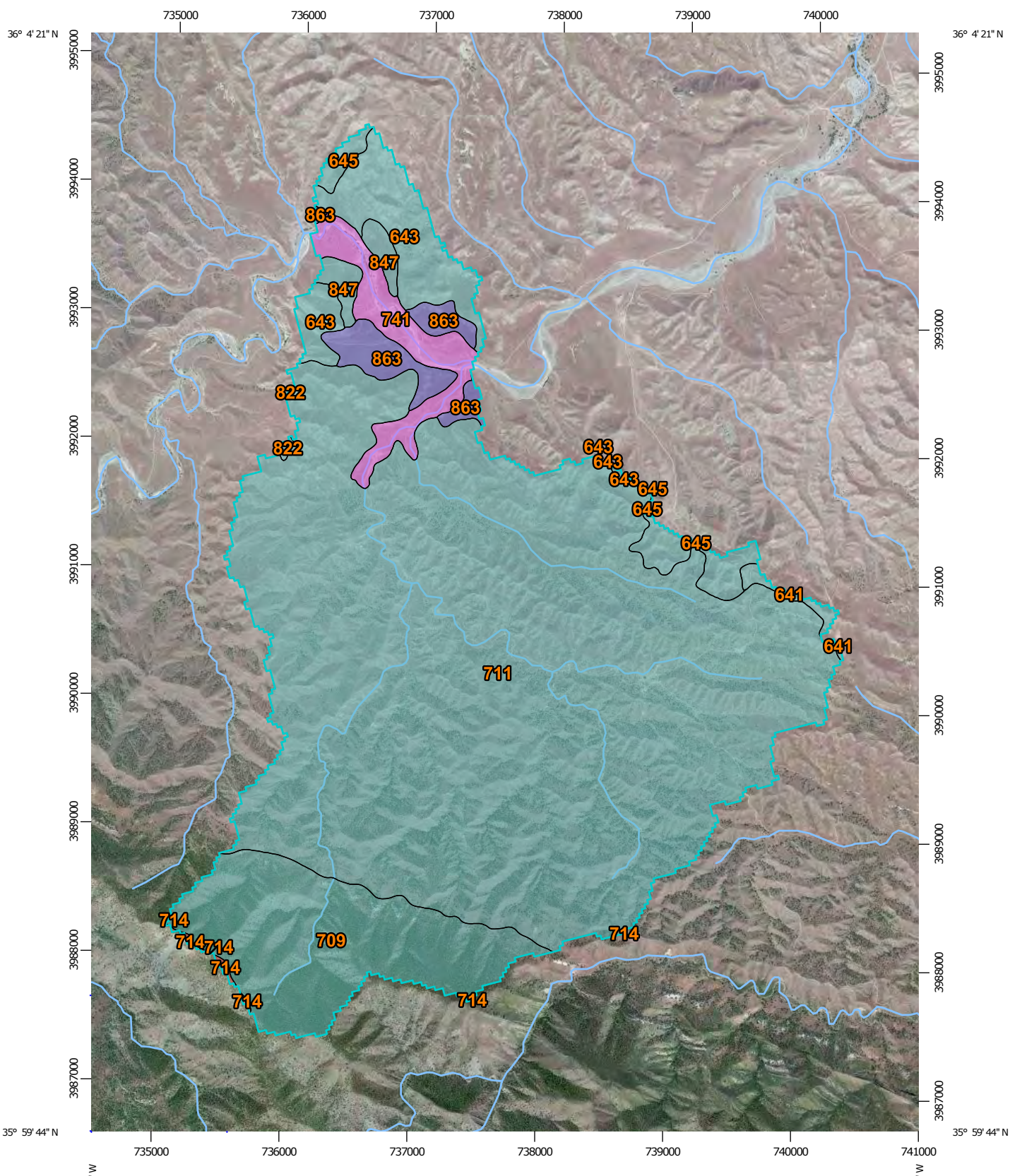
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Hydrologic Soil Group—Fresno County, California, Western Part
(Basin2)



Map Scale: 1:41,700 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Fresno County, California, Western Part
Survey Area Data: Version 9, Sep 30, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 8, 2010—May 21, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Fresno County, California, Western Part (CA653)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
641	Mercey-Delgado-Kettleman association, 5 to 15 percent slopes	C	19.0	0.4%
643	Mercey-Delgado-Kettleman association, 15 to 30 percent slopes	C	221.4	4.8%
645	Delgado-Mercey-Kettleman association, 30 to 50 percent slopes	C	82.9	1.8%
709	Sagaser-Gaviota-Borreguero association, 50 to 75 percent slopes	C	540.8	11.8%
711	Currymountain-Wisflat-Borreguero association, 30 to 75 percent slopes	C	3,401.5	74.2%
714	Gaviota-Borreguero-Rock outcrop complex, 40 to 75 percent slopes	D	5.4	0.1%
741	Anela-vernalis association, 0 to 5 percent slopes	A	155.3	3.4%
822	Altamont clay, 5 to 8 percent slopes	C	3.7	0.1%
847	Carranza gravelly sandy loam, 2 to 8 percent slopes	C	44.6	1.0%
863	Vernalis loam, 0 to 2 percent slopes	B	107.4	2.3%
Totals for Area of Interest			**4,581.8**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

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Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

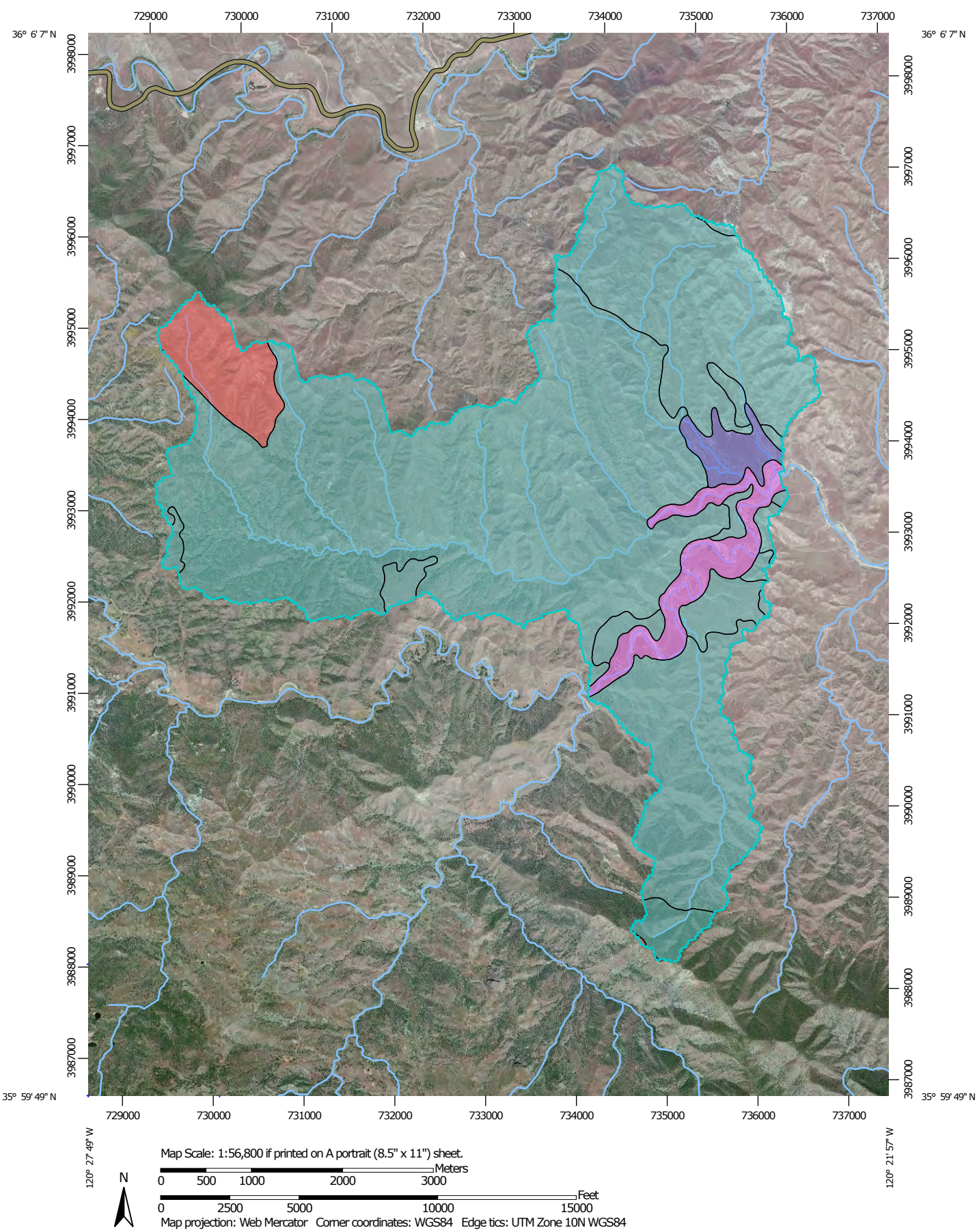
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Hydrologic Soil Group—Fresno County, California, Western Part
(Basin3)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 9, Sep 30, 2014

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Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Fresno County, California, Western Part (CA653)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
643	Mercey-Delgado-Kettleman association, 15 to 30 percent slopes	C	28.8	0.4%
645	Delgado-Mercey-Kettleman association, 30 to 50 percent slopes	C	1,034.0	16.0%
709	Sagaser-Gaviota-Borreguero association, 50 to 75 percent slopes	C	88.2	1.4%
711	Currymountain-Wisflat-Borreguero association, 30 to 75 percent slopes	C	4,342.7	67.1%
714	Gaviota-Borreguero-Rock outcrop complex, 40 to 75 percent slopes	D	1.7	0.0%
741	Anela-vernalis association, 0 to 5 percent slopes	A	294.4	4.5%
758	Wisflat-Borreguero-Rock outcrop complex, 50 to 70 percent slopes	D	290.0	4.5%
822	Altamont clay, 5 to 8 percent slopes	C	234.4	3.6%
847	Carranza gravelly sandy loam, 2 to 8 percent slopes	C	29.2	0.5%
863	Vernalis loam, 0 to 2 percent slopes	B	127.7	2.0%
Totals for Area of Interest			**6,471.2**	**100.0%**

Description

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Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

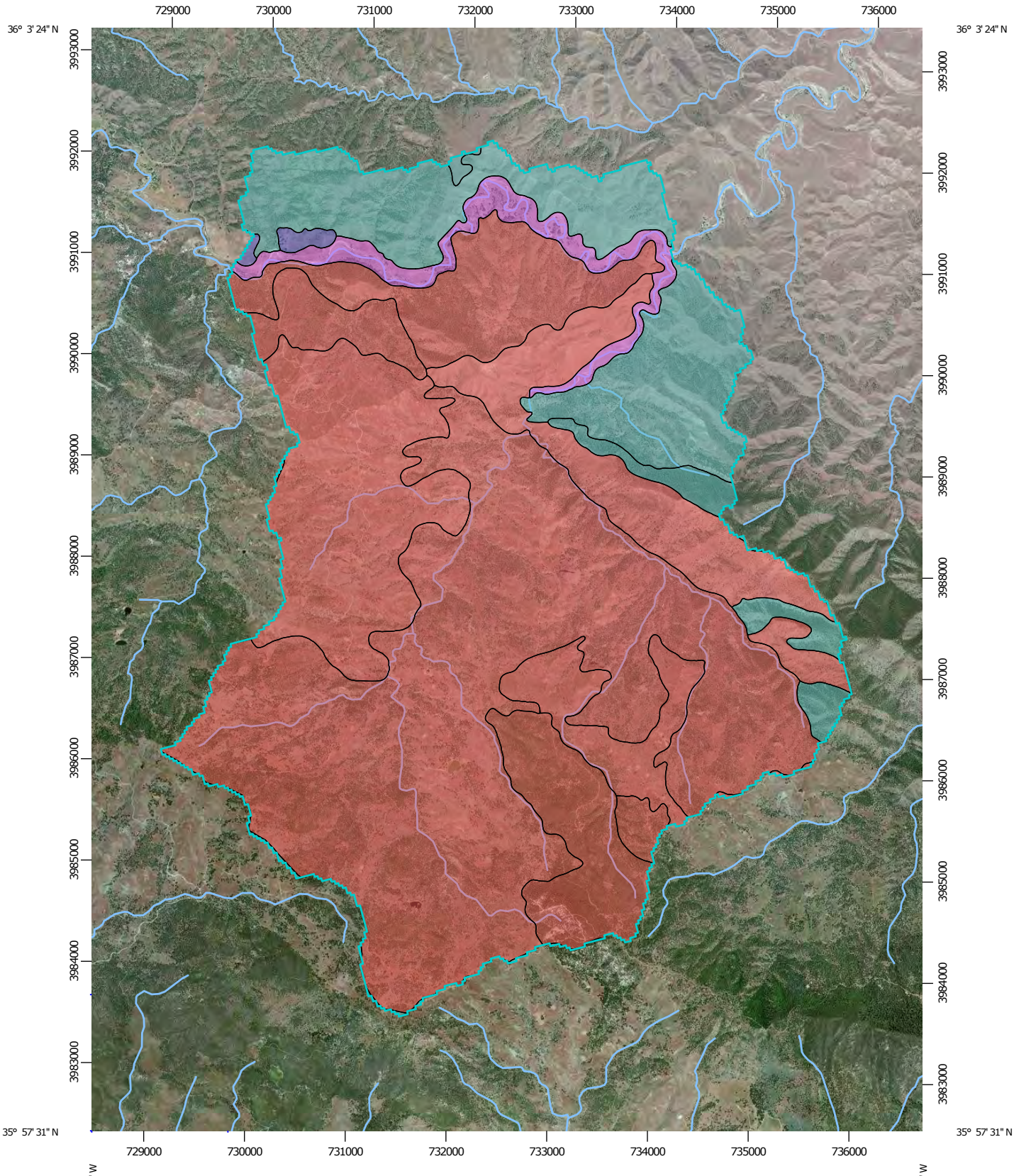
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Hydrologic Soil Group—Fresno County, California, Western Part; and Monterey County, California
(Basin4)



Map Scale: 1:53,100 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2500 5000 10000 15000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

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

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Fresno County, California, Western Part
Survey Area Data: Version 9, Sep 30, 2014

Soil Survey Area: Monterey County, California
Survey Area Data: Version 11, Sep 12, 2014

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 8, 2010—May 21, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Fresno County, California, Western Part (CA653)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
705	Roacha silty clay loam, 30 to 50 percent slopes	D	479.2	5.2%
709	Sagaser-Gaviota-Borreguero association, 50 to 75 percent slopes	C	213.9	2.3%
711	Currymountain-Wisflat-Borreguero association, 30 to 75 percent slopes	C	1,287.0	13.9%
714	Gaviota-Borreguero-Rock outcrop complex, 40 to 75 percent slopes	D	736.7	8.0%
728	Climara clay, 15 to 50 percent slopes	D	1,423.7	15.4%
733	Hentine-Climara association, 15 to 50 percent slopes	D	4,142.8	44.8%
741	Anela-vernalis association, 0 to 5 percent slopes	A	292.4	3.2%
774	Hentine-Franciscan-Rock outcrop complex, 30 to 65 percent slopes	D	617.1	6.7%
822	Altamont clay, 5 to 8 percent slopes	C	11.2	0.1%
863	Vernalis loam, 0 to 2 percent slopes	B	34.6	0.4%
Subtotals for Soil Survey Area			**9,238.5**	**99.9%**
Totals for Area of Interest			**9,250.3**	**100.0%**

Hydrologic Soil Group— Summary by Map Unit — Monterey County, California (CA053)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
ChF	Climara clay, 30 to 50 percent slopes	C	1.3	0.0%
Ck	Climara-Montara complex	C	4.6	0.0%
GgE	Gilroy gravelly loam, 15 to 50 percent slopes	C	4.8	0.1%
Rc	Rock outcrop-Xerorthent association		1.1	0.0%

Hydrologic Soil Group— Summary by Map Unit — Monterey County, California (CA053)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Subtotals for Soil Survey Area			11.8	0.1%
Totals for Area of Interest			9,250.3	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

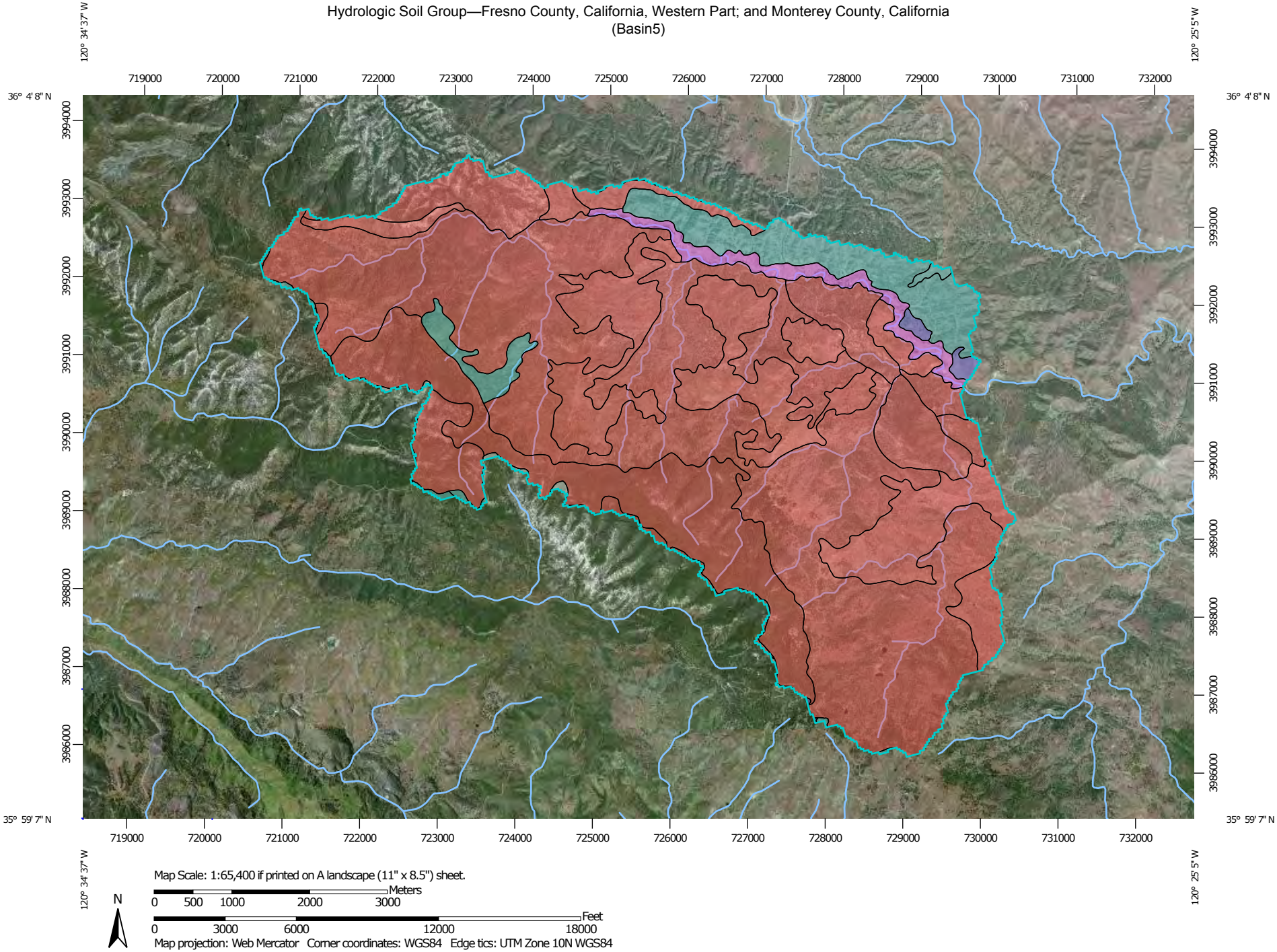
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Hydrologic Soil Group—Fresno County, California, Western Part; and Monterey County, California
(Basin5)



MAP LEGEND

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

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Fresno County, California, Western Part
Survey Area Data: Version 9, Sep 30, 2014

Soil Survey Area: Monterey County, California
Survey Area Data: Version 11, Sep 12, 2014

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 8, 2010—May 21, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Fresno County, California, Western Part (CA653)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
711	Currymountain-Wisflat-Borreguero association, 30 to 75 percent slopes	C	548.7	5.6%
714	Gaviota-Borreguero-Rock outcrop complex, 40 to 75 percent slopes	D	164.7	1.7%
723	Exclose-Wisflat-Grazer association, 15 to 65 percent slopes	C	122.3	1.2%
727	Reliz-Gewter-Rock outcrop association, 25 to 75 percent slopes	D	1,697.8	17.2%
728	Climara clay, 15 to 50 percent slopes	D	1,763.2	17.9%
733	Hentine-Climara association, 15 to 50 percent slopes	D	4,683.8	47.6%
741	Anela-vernalis association, 0 to 5 percent slopes	A	215.8	2.2%
773	Hentine-Rock outcrop complex, 30 to 65 percent slopes	D	224.9	2.3%
774	Hentine-Franciscan-Rock outcrop complex, 30 to 65 percent slopes	D	284.3	2.9%
822	Altamont clay, 5 to 8 percent slopes	C	14.6	0.1%
863	Vernalis loam, 0 to 2 percent slopes	B	43.6	0.4%
Subtotals for Soil Survey Area			**9,763.7**	**99.2%**
Totals for Area of Interest			**9,846.8**	**100.0%**

Hydrologic Soil Group— Summary by Map Unit — Monterey County, California (CA053)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Ck	Climara-Montara complex	C	8.3	0.1%
GfF	Gazos silt loam, 30 to 50 percent slopes	C	6.7	0.1%
GgE	Gilroy gravelly loam, 15 to 50 percent slopes	C	8.9	0.1%

Hydrologic Soil Group— Summary by Map Unit — Monterey County, California (CA053)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Rc	Rock outcrop-Xerorthent association		21.0	0.2%
ScG	San Andreas fine sandy loam, 30 to 75 percent slopes	B	1.4	0.0%
Sg	Santa Lucia-Reliz association	D	36.7	0.4%
Subtotals for Soil Survey Area			**83.0**	**0.8%**
Totals for Area of Interest			**9,846.8**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

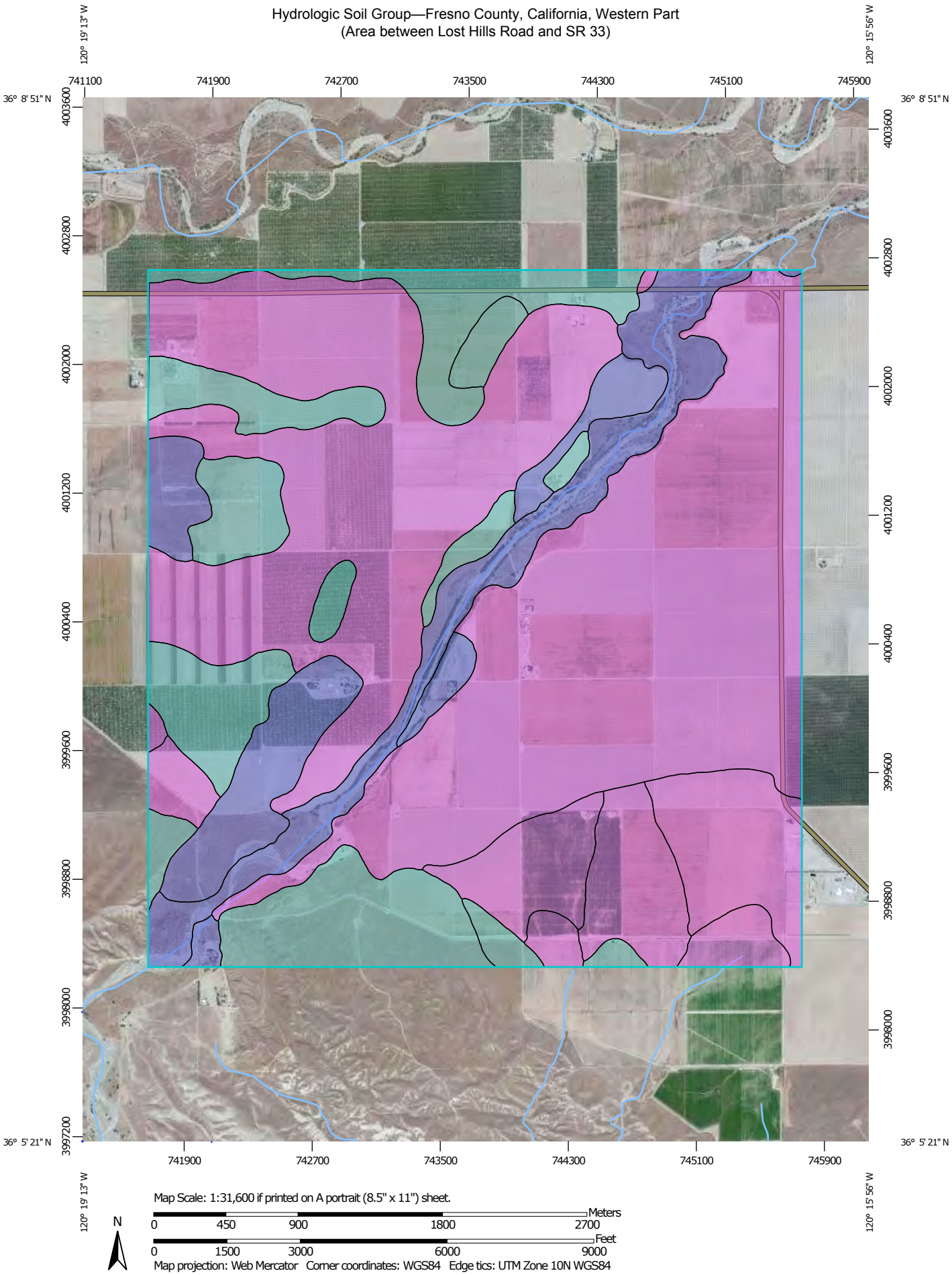
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Hydrologic Soil Group—Fresno County, California, Western Part
(Area between Lost Hills Road and SR 33)



Map Scale: 1:31,600 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 450 900 1800 2700

Feet
0 1500 3000 6000 9000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

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

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Fresno County, California, Western Part
Survey Area Data: Version 9, Sep 30, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 12, 2010—May 15, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Fresno County, California, Western Part (CA653)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
404	Milham-Guijarral association, 5 to 15 percent slopes	C	235.7	5.4%
406	Guijarral sandy loam, 2 to 5 percent slopes	A	175.1	4.0%
426	Kimberlina sandy loam, 2 to 5 percent slopes	A	319.6	7.3%
435	Lethent clay loam, 0 to 1 percent slopes	C	34.9	0.8%
445	Excelsior sandy loam, 0 to 2 percent slopes, MLRA 17	A	2,437.9	55.6%
447	Excelsior sandy loam, sandy substratum, 0 to 2 percent slopes	B	319.7	7.3%
452	Milham sandy loam, 2 to 5 percent slopes	C	34.2	0.8%
476	Posochanet clay loam, saline-sodic, 0 to 2 percent slopes	C	470.7	10.7%
480	Calflax clay loam, saline-sodic, 0 to 2 percent slopes	C	41.0	0.9%
960	Excelsior, sandy substratum-westhaven association, flooded, 0 to 2 percent slopes	B	317.2	7.2%
Totals for Area of Interest			**4,386.0**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

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Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

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Fax: 925.941.0018
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APPENDIX I. CURVE NUMBER CALCULATIONS

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Fax: 925.941.0018
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Table 2-2c Runoff curve numbers for other agricultural lands [1]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. [2]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. [3]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 [4]	48	65	73
Woods—grass combination (orchard or tree farm). [5]	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. [6]	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 [4]	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

1 Average runoff condition, and $I_a = 0.2S$.
2 *Poor:* <50%) ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: > 75% ground cover and lightly or only occasionally grazed.
3 *Poor:* <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.
4 Actual curve number is less than 30; use CN = 30 for runoff computations.
5 CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.
6 *Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

Curve Numbers for "Other Agricultural Lands"

Source: NRCS

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Fax: 925.941.0018
www.wreco.com

Table 2-2d Runoff curve numbers for arid and semiarid rangelands [1/]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition [2/]	A [3/]	B	C	D
Herbaceous—mixture of grass, weeds, and low-growing brush, with brush the minor element.	Poor		80	87	93
	Fair		71	81	89
	Good		62	74	85
Oak-aspen—mountain brush mixture of oak brush, aspen, mountain mahogany, bitter brush, maple, and other brush.	Poor		66	74	79
	Fair		48	57	63
	Good		30	41	48
Pinyon-juniper—pinyon, juniper, or both; grass understory.	Poor		75	85	89
	Fair		58	73	80
	Good		41	61	71
Sagebrush with grass understory.	Poor		67	80	85
	Fair		51	63	70
	Good		35	47	55
Desert shrub—major plants include saltbush, greasewood, creosotebush, blackbrush, bursage, palo verde, mesquite, and cactus.	Poor	63	77	85	88
	Fair	55	72	81	86
	Good	49	68	79	84

1 Average runoff condition, and I_a = 0.2S. For range in humid regions, use table 2-2c.
2 Poor: <30% ground cover (litter, grass, and brush overstory).
Fair: 30 to 70% ground cover.
Good: > 70% ground cover.
3 Curve numbers for group A have been developed only for desert shrub.

Curve Numbers for Arid and Semiarid Rangelands

Source: NRCS

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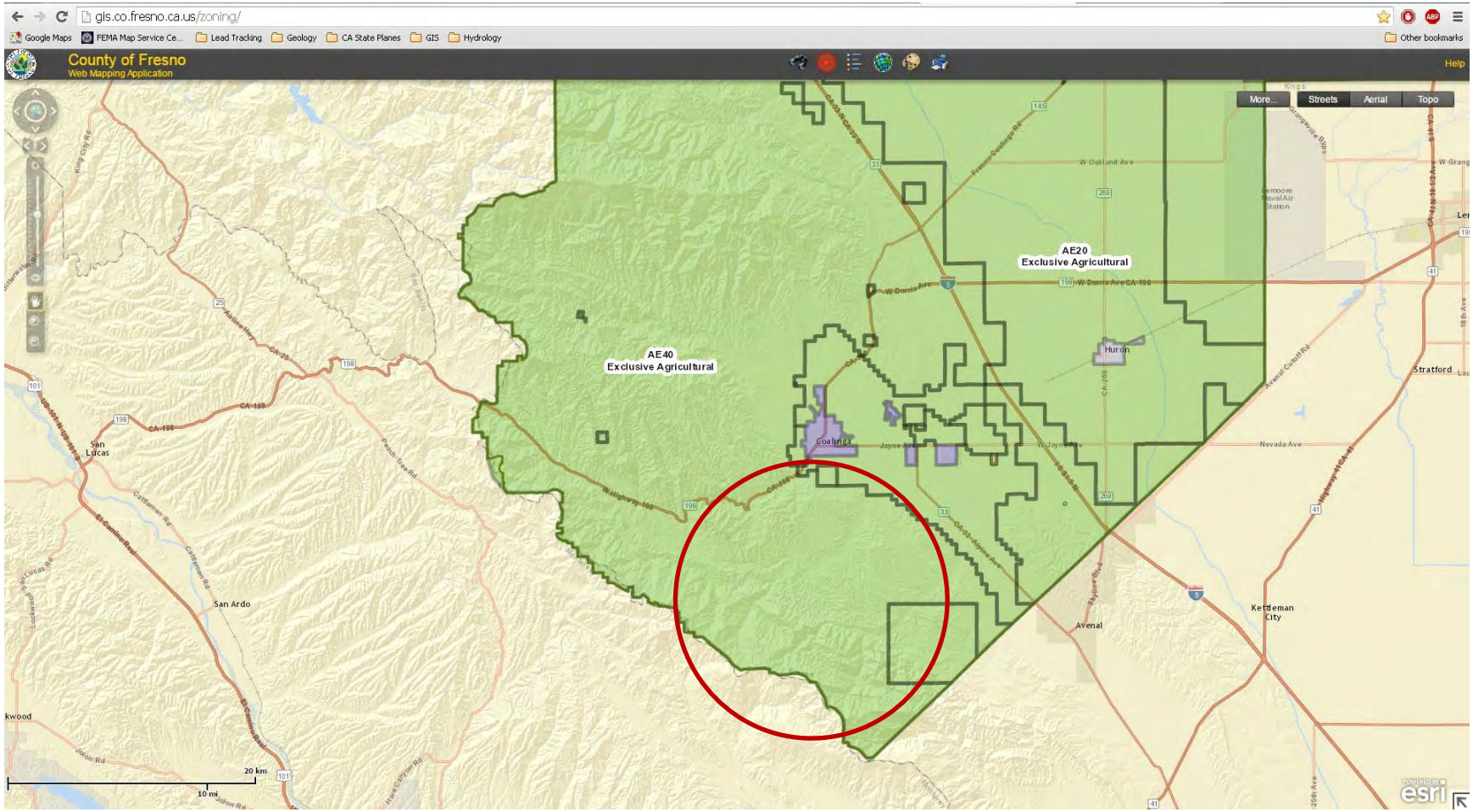
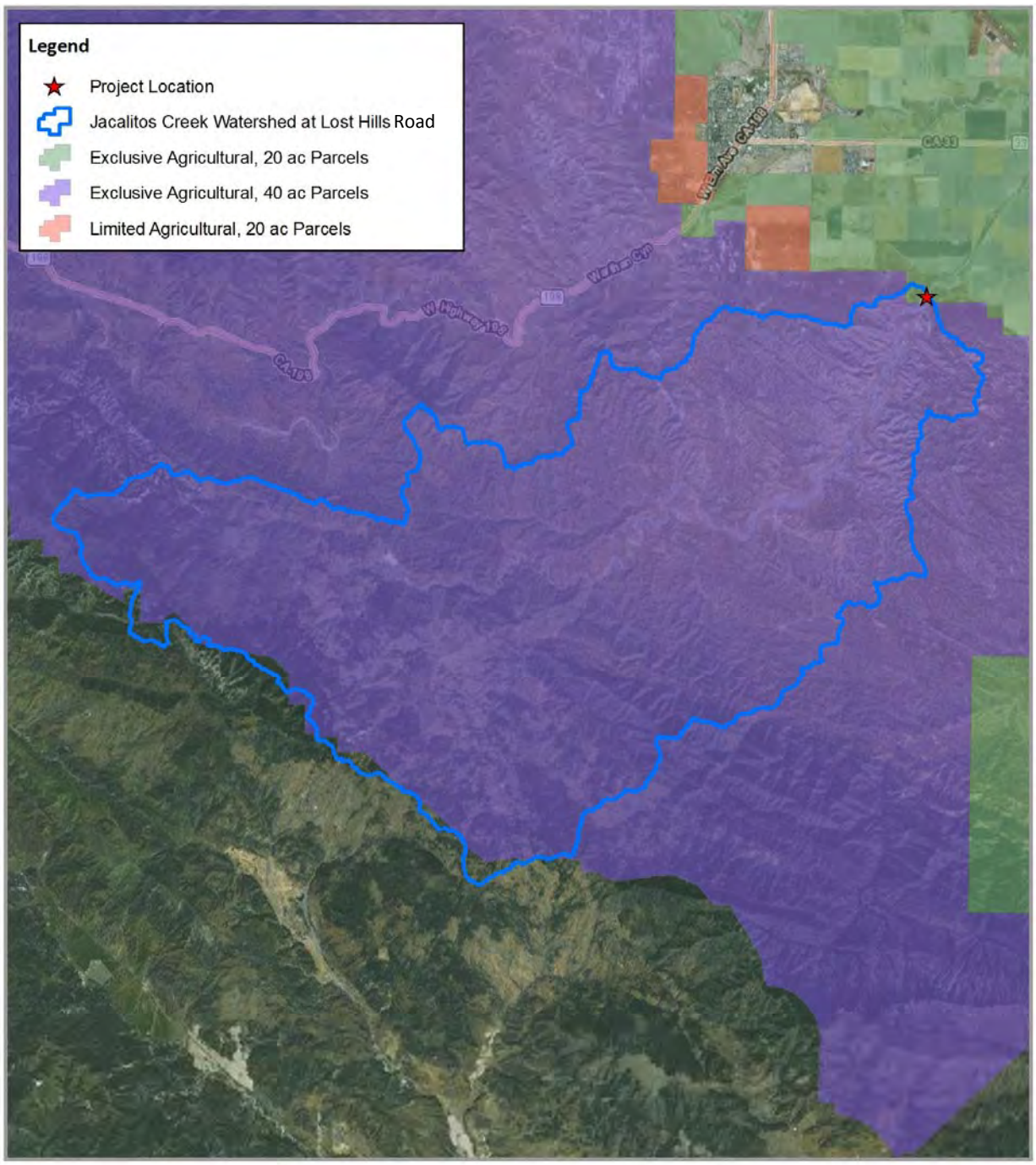
Walnut Creek, CA 94596
Phone: 925.941.0017
Fax: 925.941.0018
www.wreco.com



Land Use for Project Vicinity

1243 Alpine Road, Suite 108
Walnut Creek, CA 94596
Phone: 925.941.0017
Fax: 925.941.0018
www.wreco.com



Land Use Map

Jacalitos Creek Bridge Replacement on Lost Hills Road

Data Sources: Basemap (c) 2010 Microsoft Corporation and its data suppliers, http//www.bing.com/maps.
Land uses delineations provided by Fresno County Public Works and Planning.

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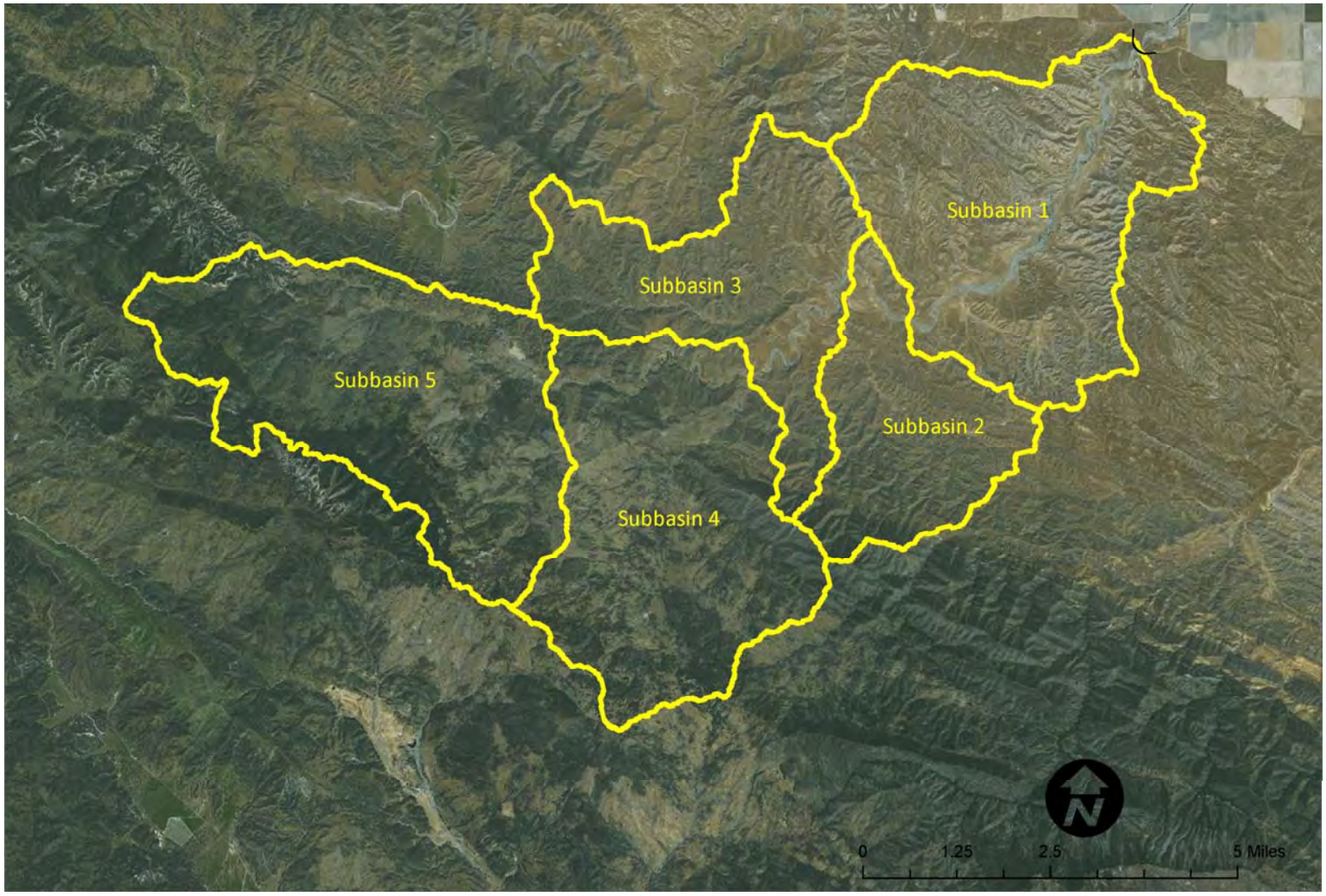

Aerial Imagery Used to Assess Hydrologic Condition of Subbasins

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Walnut Creek, CA 94596
Phone: 925.941.0017
Fax: 925.941.0018
www.wreco.com

Curve Numbers, Potential Maximum Retention After Runoff Begins, and Initial Abstraction

Basin	Hydrologic Condition	CN for HSG				AMC II		AMC I	
		A	B	C	D				
1	Poor	2.14	6.56	76.15	0.00	84.85	Composite CN	70.2	Composite CN
						1.8	S	4.3	S
						0.357	Ia	0.850	Ia
2	Poor	2.30	1.85	80.97	0.10	85.23	Composite CN	70.8	Composite CN
						2.9	S	4.1	S
						0.572	Ia	0.825	Ia
3	Poor	3.09	1.56	76.51	4.01	85.18	Composite CN	70.7	Composite CN
						2.9	S	4.1	S
						0.575	Ia	0.829	Ia
4	Fair	1.55	0.26	13.00	67.20	82.01	Composite CN	65.7	Composite CN
						2.9	S	5.2	S
						0.576	Ia	1.044	Ia
5	Good	0.85	0.28	5.33	72.12	78.58	Composite CN	60.6	Composite CN
						2.7	S	6.5	S
						0.545	Ia	1.298	Ia

1243 Alpine Road, Suite 108
Walnut Creek, CA 94596
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Fax: 925.941.0018
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APPENDIX J. LAG TIME CALCULATIONS

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Fax: 925.941.0018
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Parameters Used to Calculate Lag Time

Subbasin	L (mile)	L_{ca} (mile)	S (feet/mile)	K_n
SB-1	6.4	3.4	31.1	0.08
SB-2	4.1	2.0	556.4	0.08
SB-3	6.6	2.5	230.5	0.08
SB-4	6.5	2.9	393.4	0.08
SB-5	7.9	6.3	273.6	0.08

Lag Time

Subbasin	Lag Time (hour)
SB-1	3.3
SB-2	1.5
SB-3	2.1
SB-4	2.1
SB-5	3.0

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APPENDIX K. CHANNEL ROUTING PARAMETERS

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Reaches	**1**	**2**	**3**	**4**	
Kinematic wave					
Length	34,000	6,000	15,900	17,700	ft
Slope	0.006	0.01	0.0075	0.0136	ft/ft
Manning's n	0.04	0.04	0.04	0.04	
Bottom width	30	30	30	30	ft
Side slope	2	2	2	2	xH:1V

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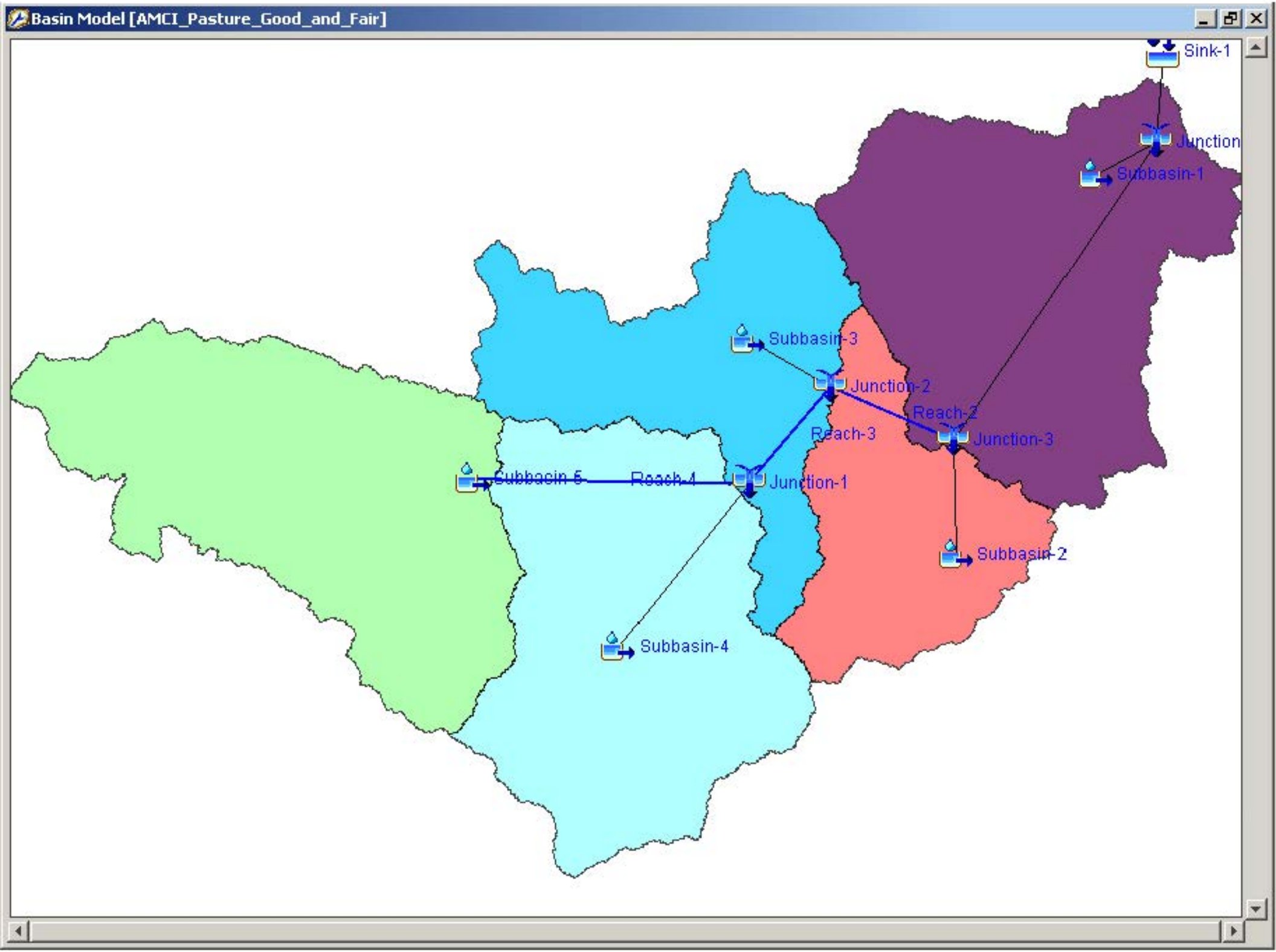
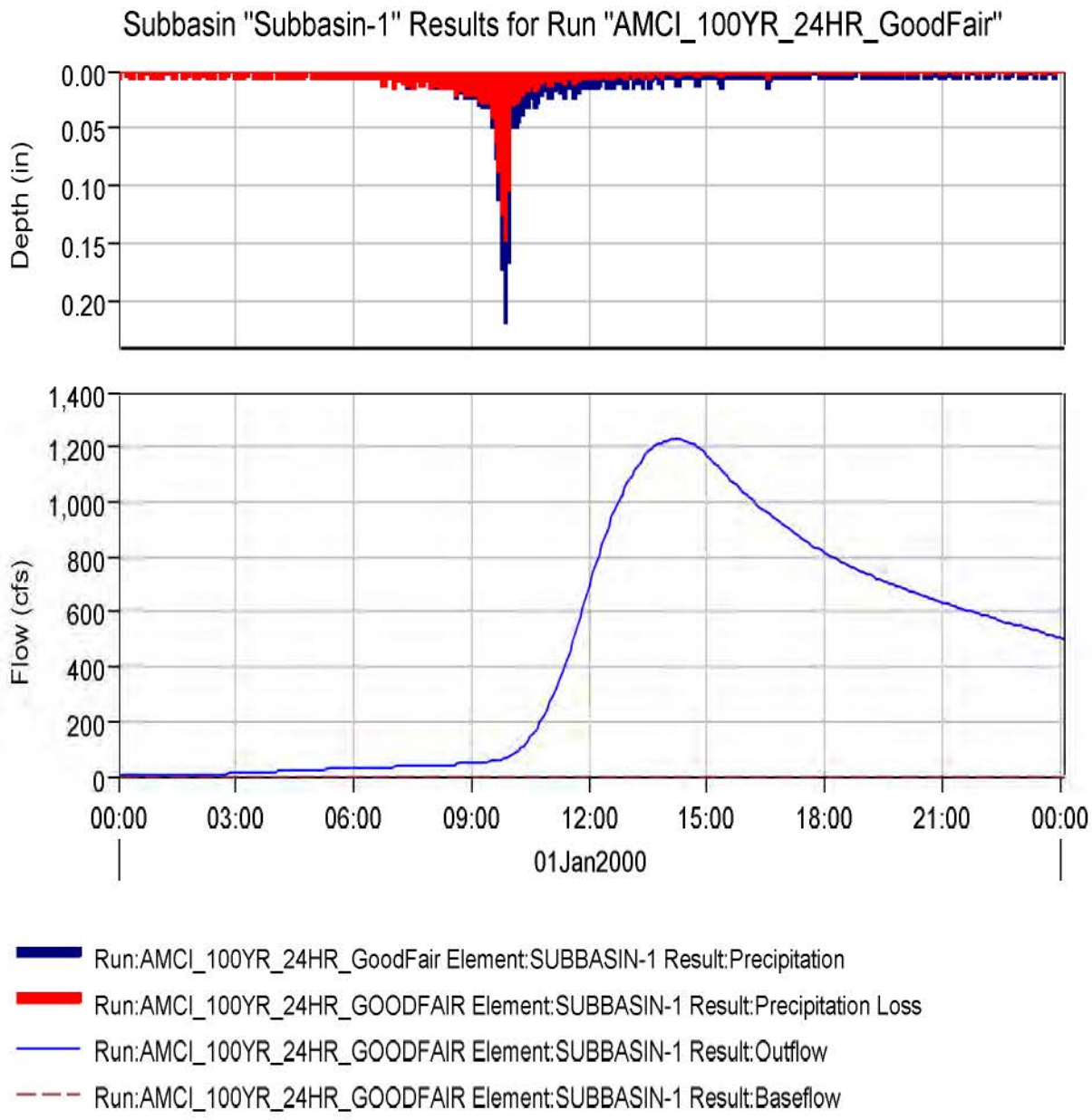
APPENDIX L. HEC-HMS OUTPUT

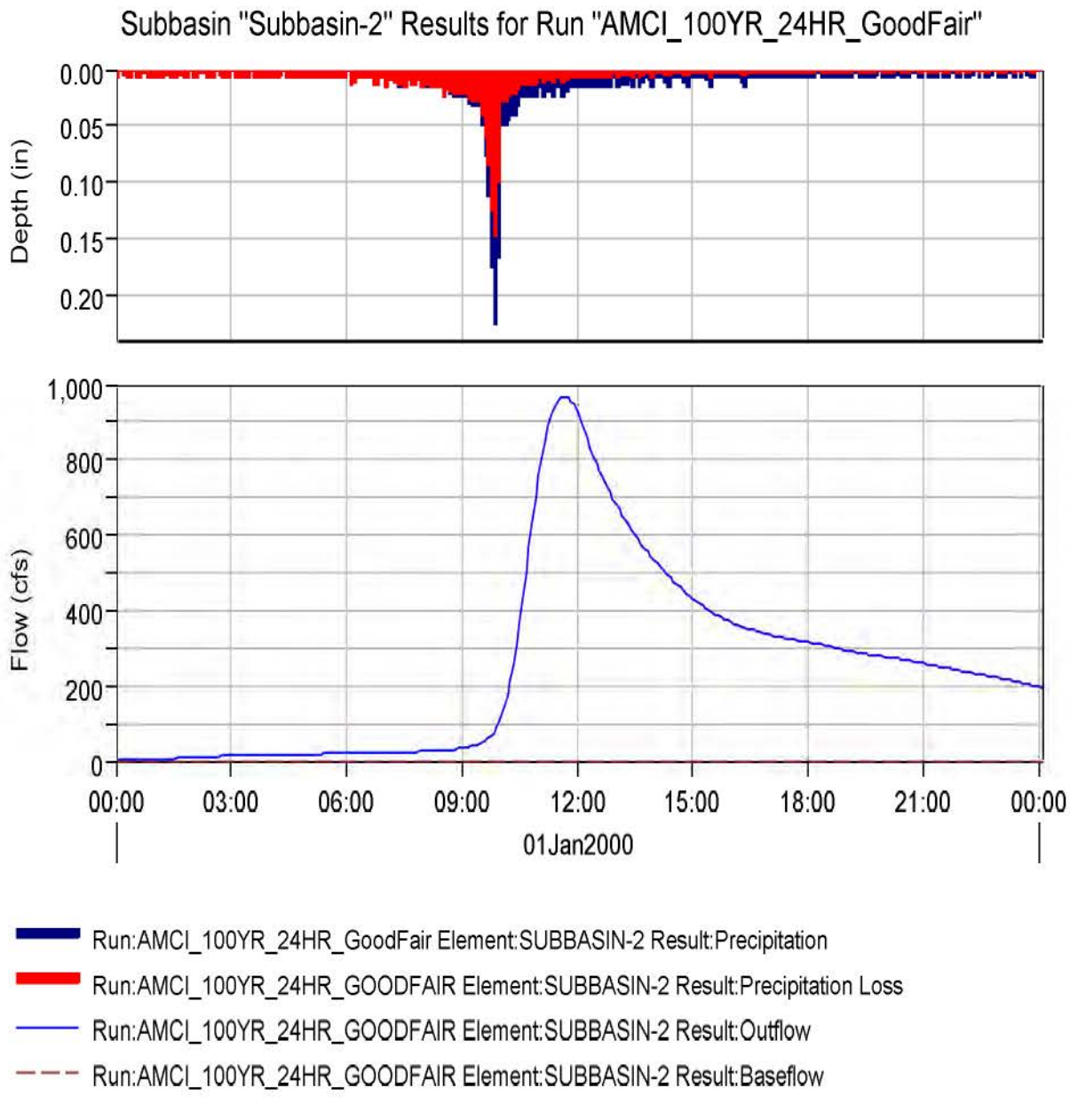

Basin Model [AMCI_Pasture_Good_and_Fair]
Sink-1
Junction
Subbasin-1
Subbasin-3
Junction-2
Reach-2
Reach-3
Junction-3
Subbasin-5
Reach-4
Junction-1
Subbasin-2
Subbasin-4

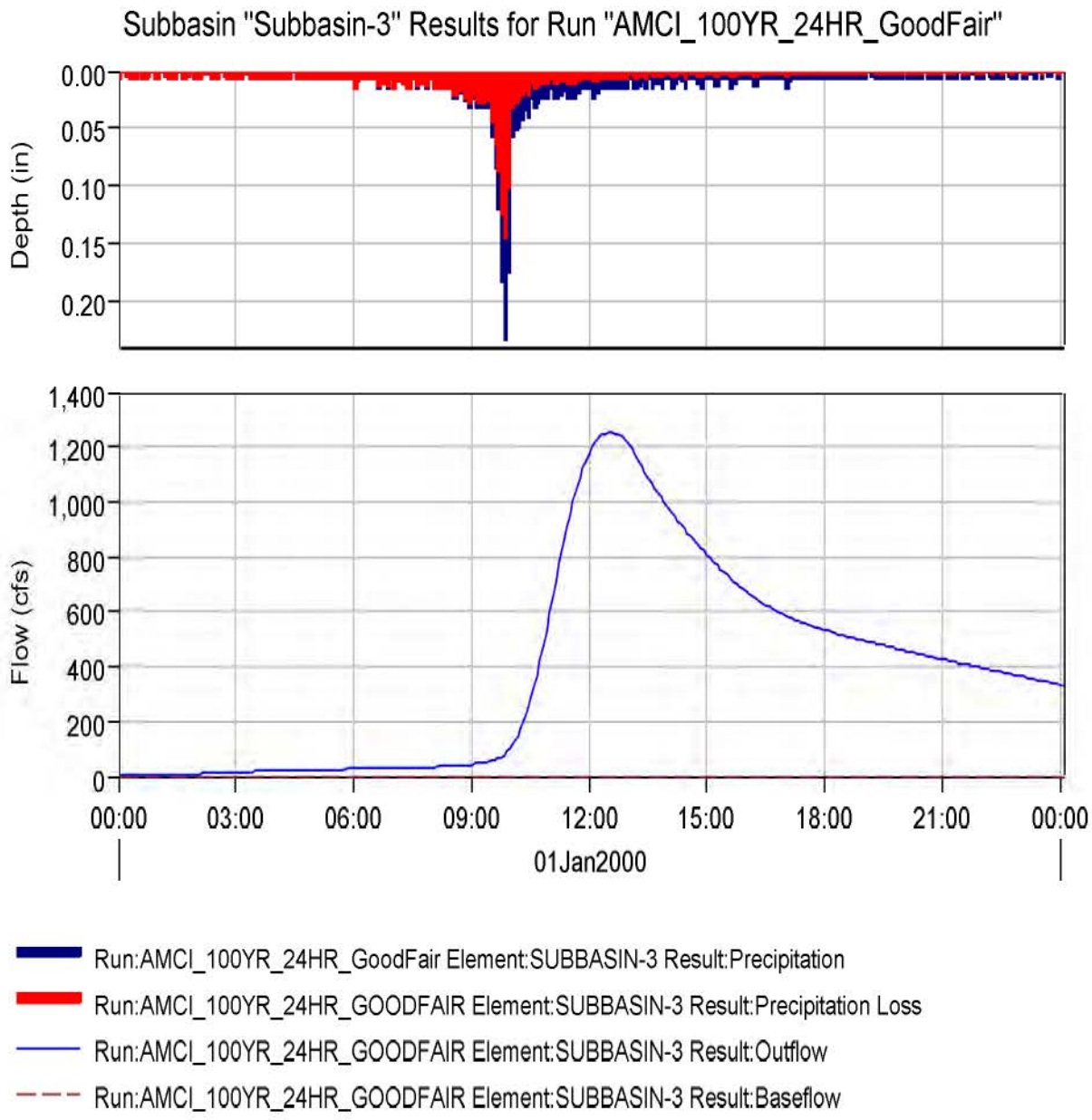
Project: Transform_SCS UH Simulation Run: AMCI_100YR_24HR_GoodFair

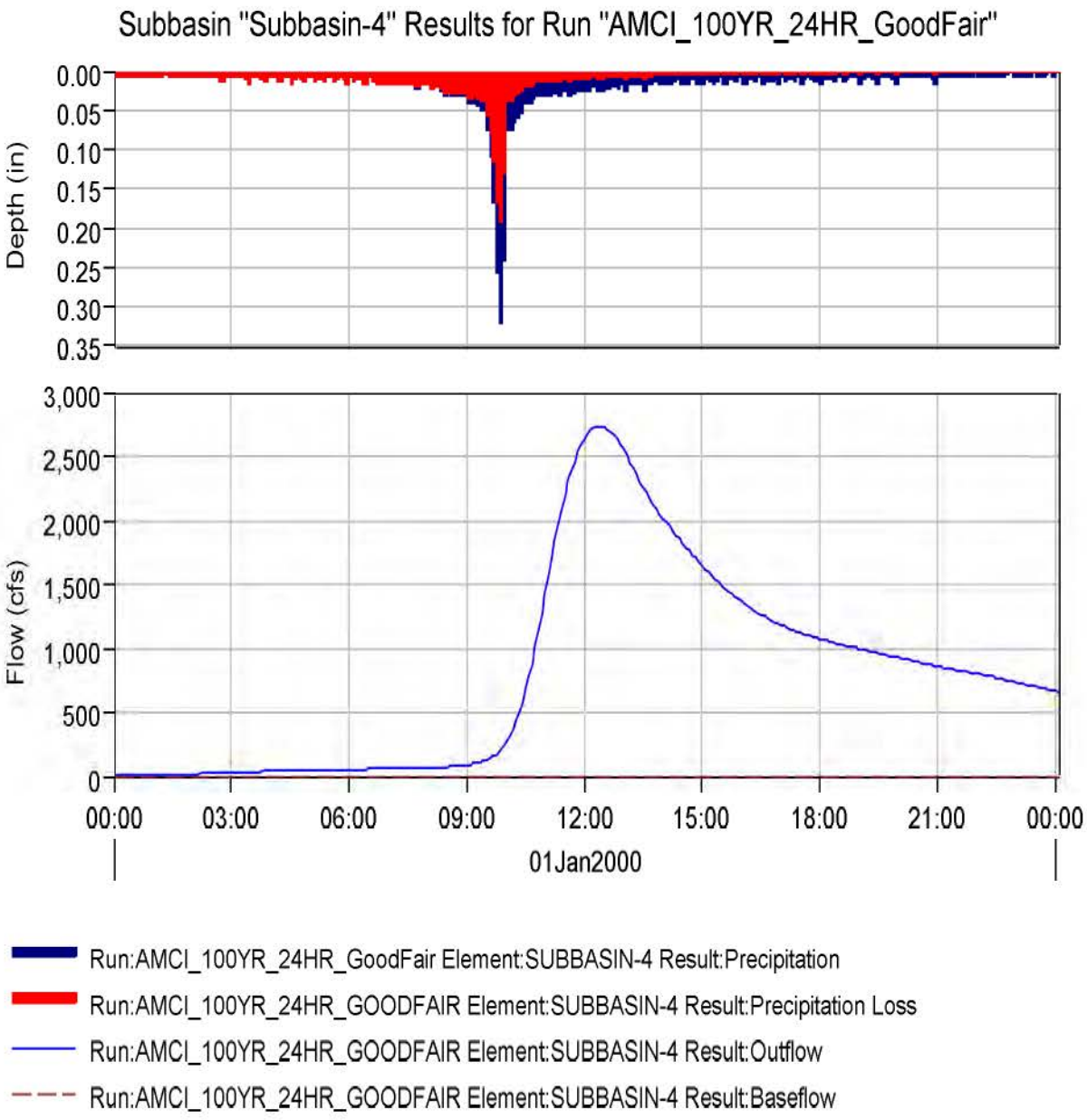
Start of Run: 01Jan2000, 00:00 Basin Model: AMCI_Pasture_Good_
End of Run: 02Jan2000, 00:05 Meteorologic Model: 100YR_24HR
Compute Time: 04Sep2015, 17:24:08 Control Specifications: 24hr

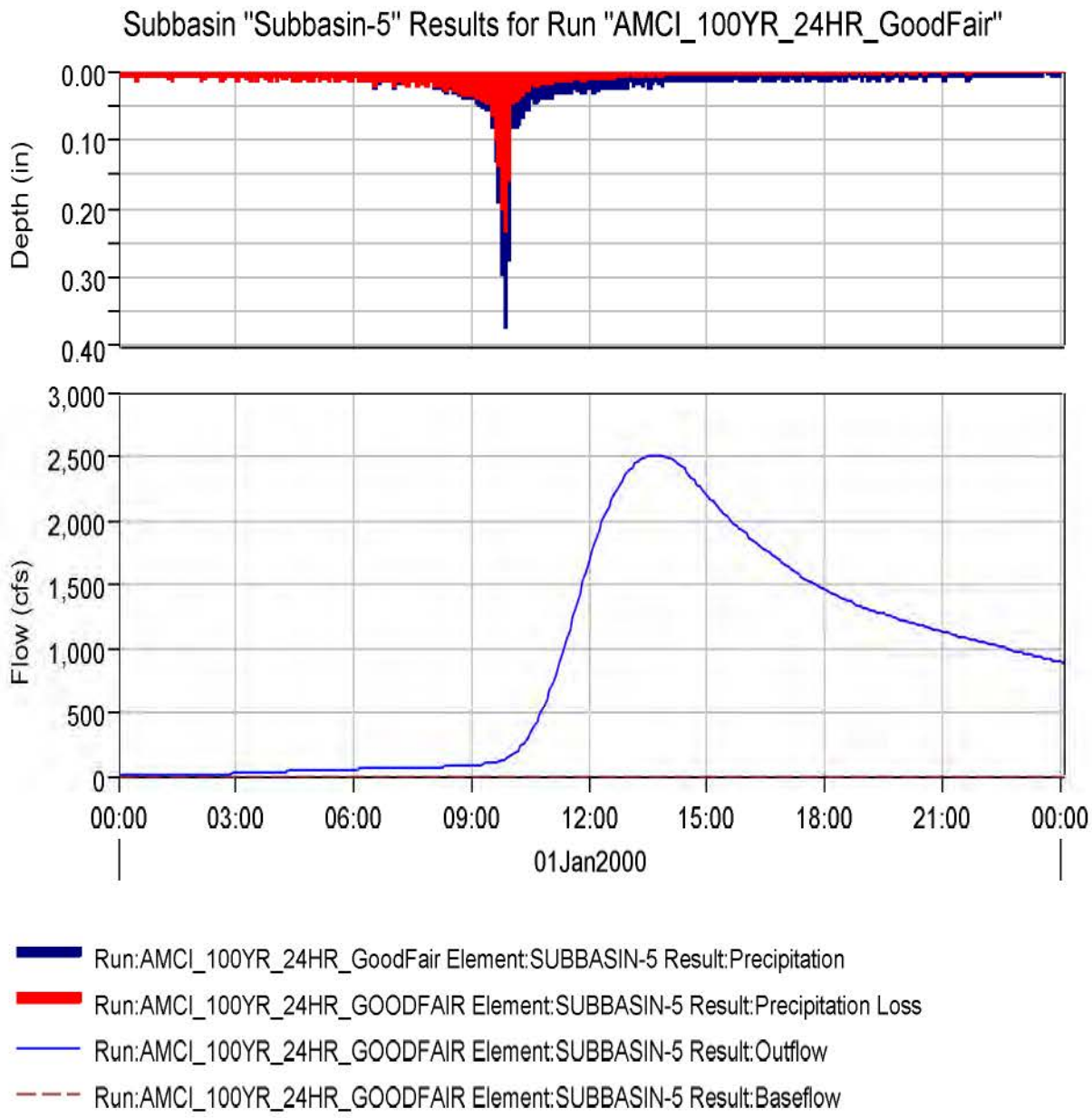
Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Subbasin-5	15.39	2503.6	01Jan2000, 13:45	2.13
Reach-4	15.39	2503.3	01Jan2000, 14:00	2.07
Subbasin-4	14.45	2728.3	01Jan2000, 12:25	2.07
Junction-1	29.84	4790.3	01Jan2000, 13:00	2.07
Reach-3	29.84	4788.0	01Jan2000, 13:15	2.02
Subbasin-3	10.11	1252.7	01Jan2000, 12:30	1.41
Junction-2	39.95	5958.6	01Jan2000, 13:05	1.87
Reach-2	39.95	5957.7	01Jan2000, 13:10	1.85
Subbasin-2	7.16	965.7	01Jan2000, 11:40	1.30
Junction-3	47.11	6614.3	01Jan2000, 13:05	1.77
Subbasin-1	15.22	1226.1	01Jan2000, 14:15	1.11
Junction-4	62.33	7728.5	01Jan2000, 13:15	1.61
Sink-1	62.33	7728.5	01Jan2000, 13:15	1.61

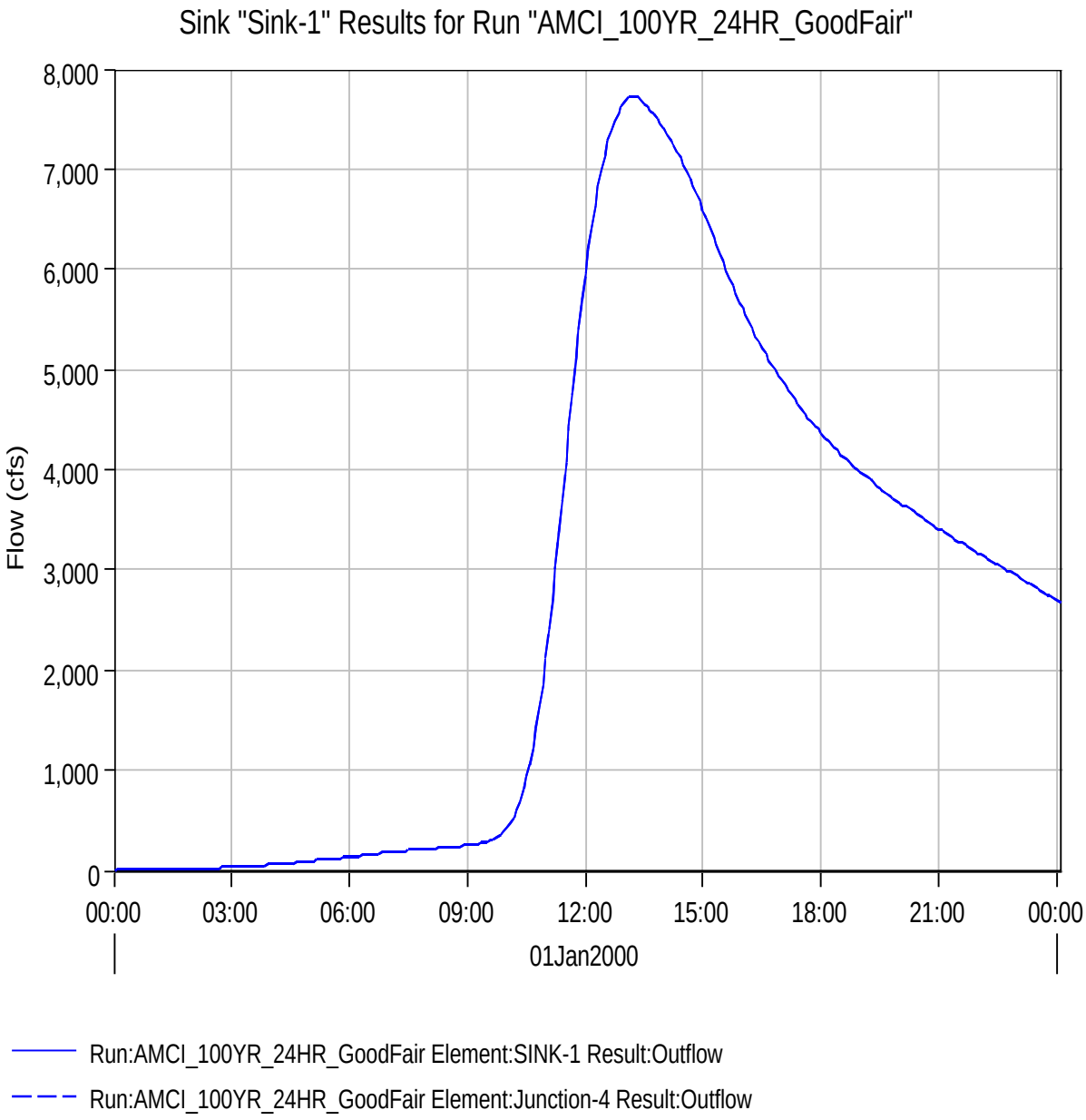

Subbasin "Subbasin-1" Results for Run "AMCI_100YR_24HR_GoodFair"
Depth (in)
0.00
0.05
0.10
0.15
0.20
Flow (cfs)
1,400
1,200
1,000
800
600
400
200
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Jan2000
Run:AMCI_100YR_24HR_GoodFair Element:SUBBASIN-1 Result:Precipitation
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-1 Result:Precipitation Loss
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-1 Result:Outflow
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-1 Result:Baseflow


Subbasin "Subbasin-2" Results for Run "AMCI_100YR_24HR_GoodFair"
Depth (in)
0.00
0.05
0.10
0.15
0.20
Flow (cfs)
1,000
800
600
400
200
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Jan2000
Run:AMCI_100YR_24HR_GoodFair Element:SUBBASIN-2 Result:Precipitation
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-2 Result:Precipitation Loss
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-2 Result:Outflow
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-2 Result:Baseflow


Subbasin "Subbasin-3" Results for Run "AMCI_100YR_24HR_GoodFair"
Depth (in)
0.00
0.05
0.10
0.15
0.20
Flow (cfs)
1,400
1,200
1,000
800
600
400
200
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Jan2000
Run:AMCI_100YR_24HR_GoodFair Element:SUBBASIN-3 Result:Precipitation
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-3 Result:Precipitation Loss
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-3 Result:Outflow
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-3 Result:Baseflow


Subbasin "Subbasin-4" Results for Run "AMCI_100YR_24HR_GoodFair"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
Flow (cfs)
3,000
2,500
2,000
1,500
1,000
500
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Jan2000
Run:AMCI_100YR_24HR_GoodFair Element:SUBBASIN-4 Result:Precipitation
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-4 Result:Precipitation Loss
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-4 Result:Outflow
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-4 Result:Baseflow

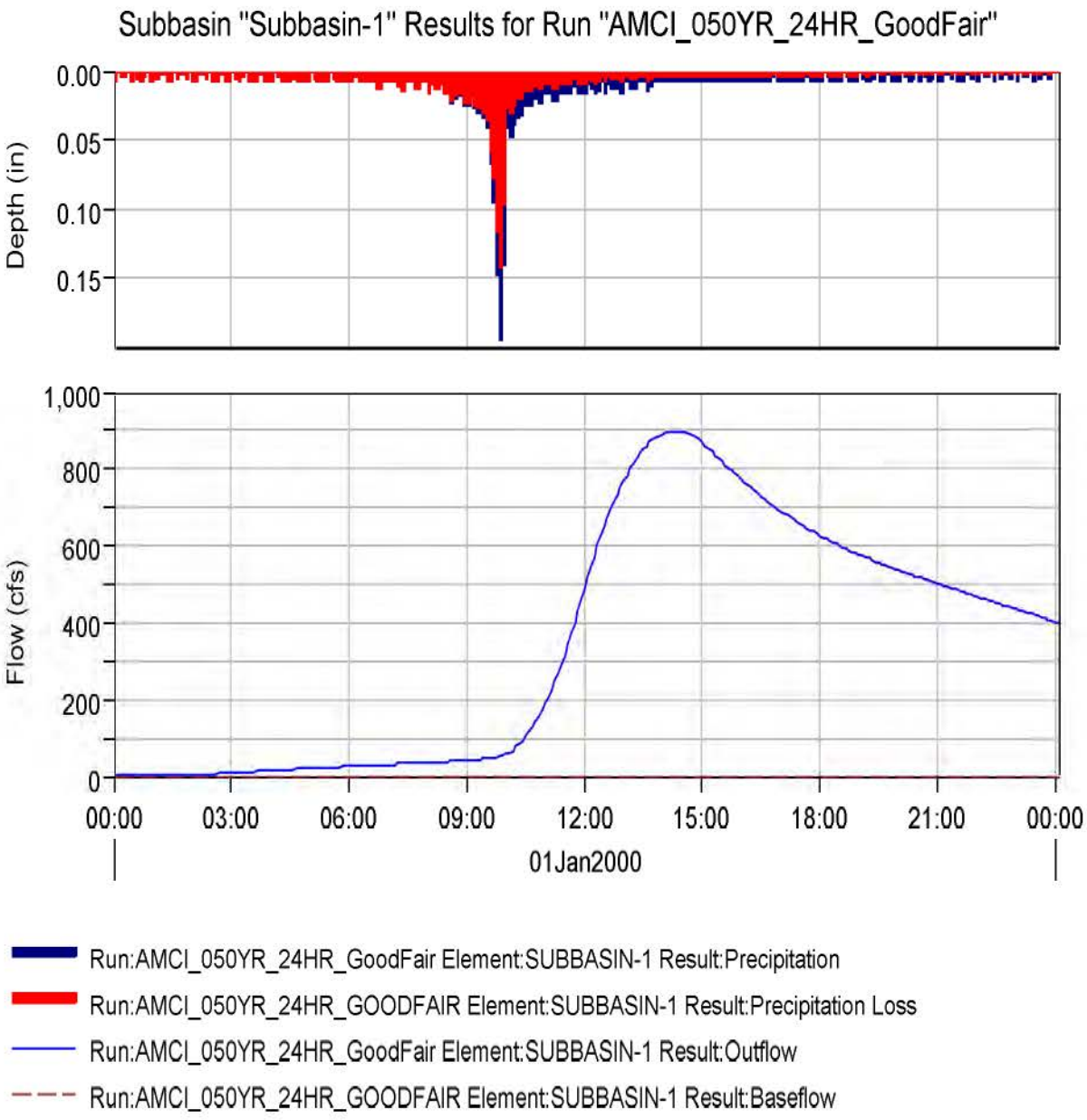

Subbasin "Subbasin-5" Results for Run "AMCI_100YR_24HR_GoodFair"
Depth (in)
0.00
0.10
0.20
0.30
0.40
Flow (cfs)
3,000
2,500
2,000
1,500
1,000
500
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Jan2000
Run:AMCI_100YR_24HR_GoodFair Element:SUBBASIN-5 Result:Precipitation
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-5 Result:Precipitation Loss
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-5 Result:Outflow
Run:AMCI_100YR_24HR_GOODFAIR Element:SUBBASIN-5 Result:Baseflow

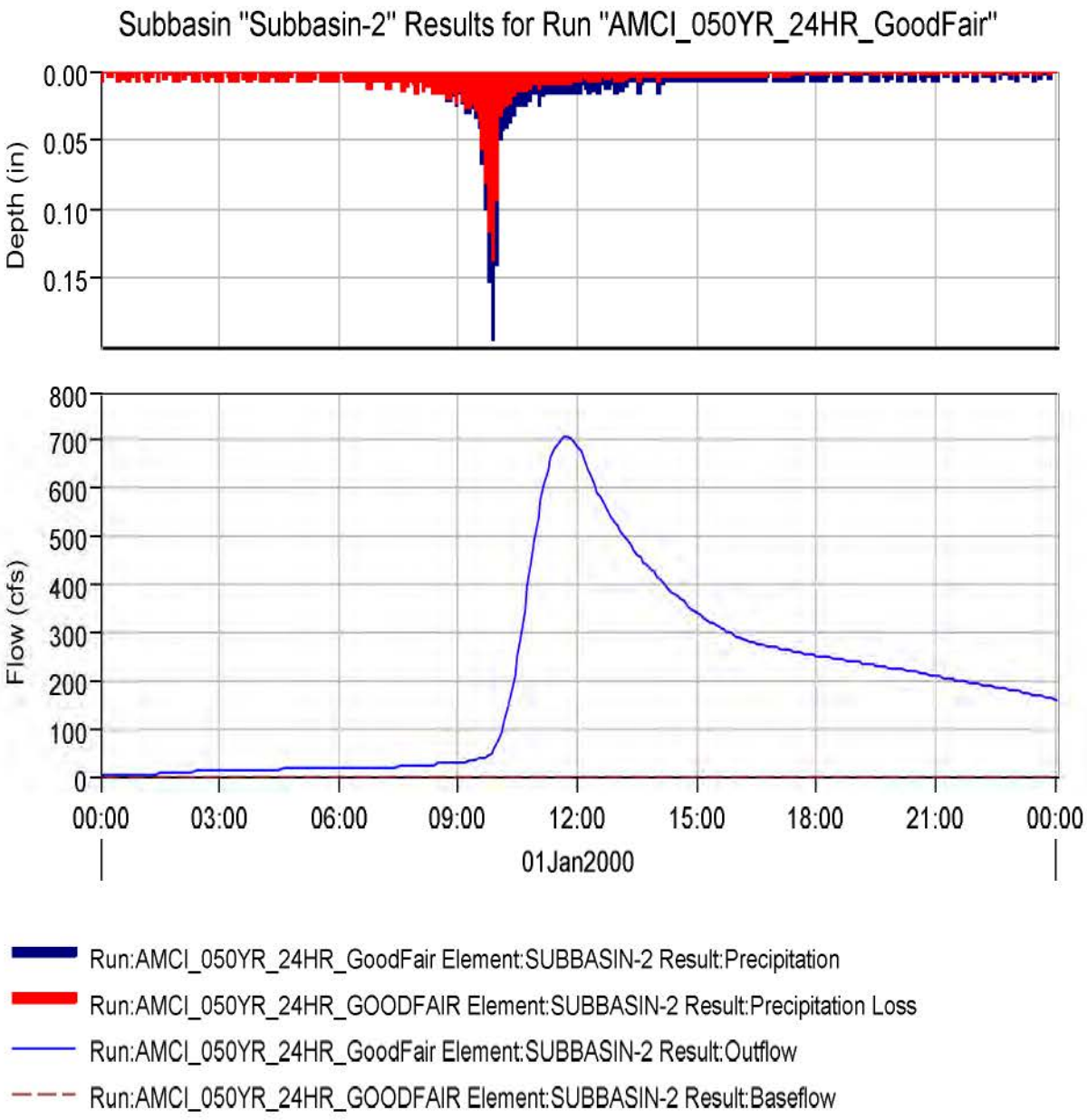

Sink "Sink-1" Results for Run "AMCI_100YR_24HR_GoodFair"
Flow (cfs)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Jan2000
Run:AMCI_100YR_24HR_GoodFair Element:SINK-1 Result:Outflow
Run:AMCI_100YR_24HR_GoodFair Element:Junction-4 Result:Outflow

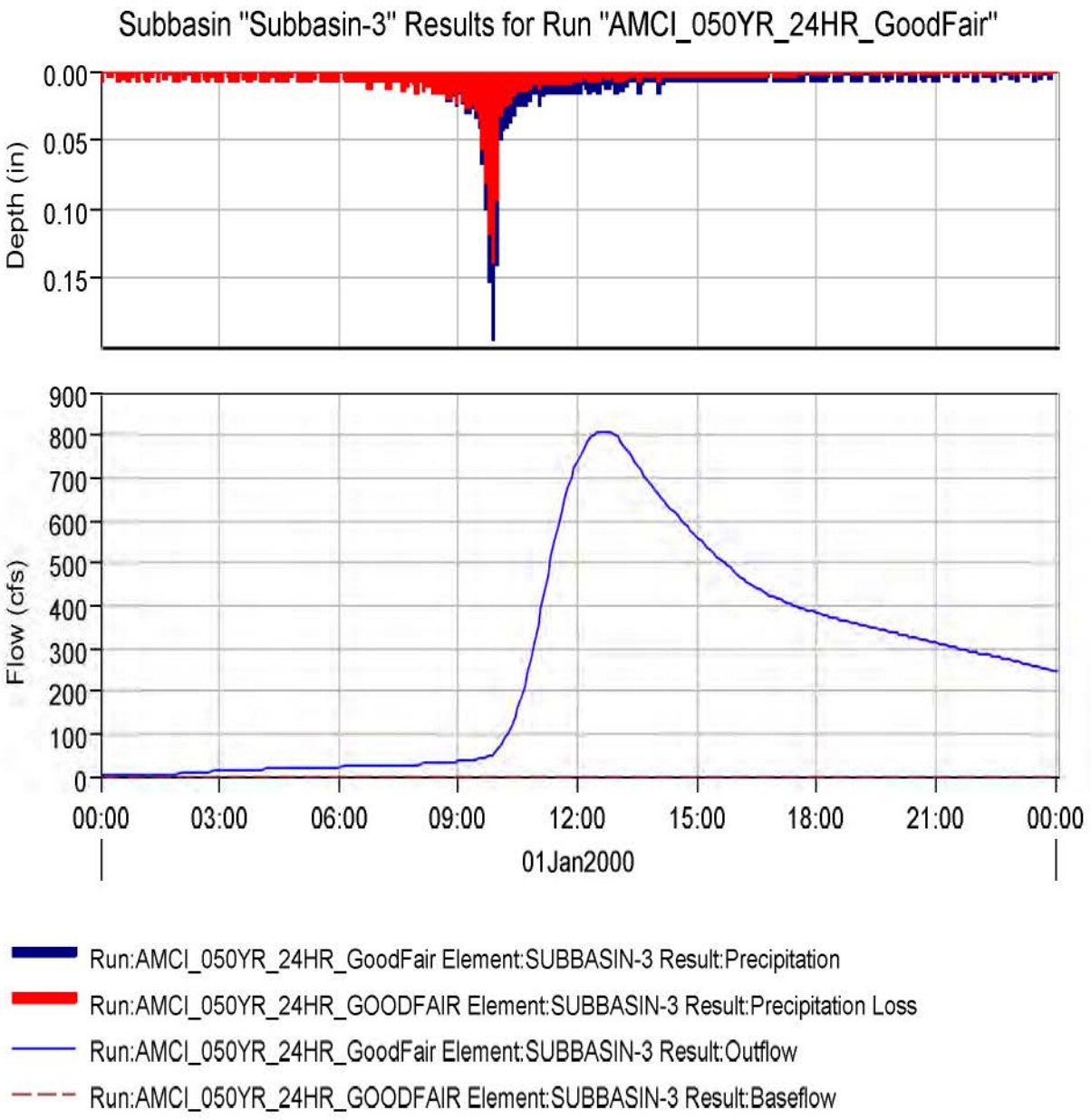
Project: Transform_SCS UH Simulation Run: AMCI_050YR_24HR_GoodFair

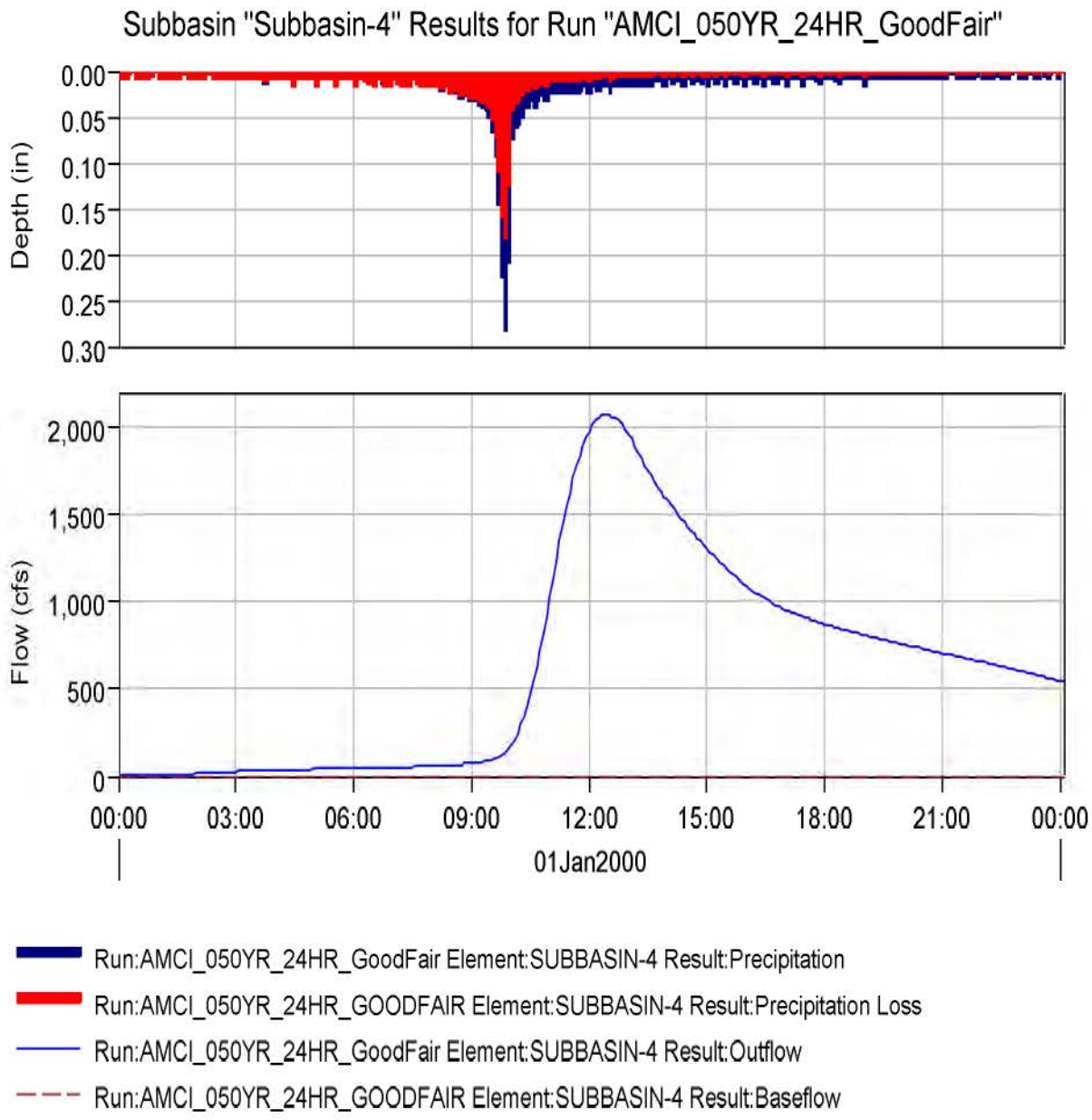
Start of Run: 01Jan2000, 00:00 Basin Model: AMCI_Pasture_Good_
End of Run: 02Jan2000, 00:05 Meteorologic Model: 050YR_24HR
Compute Time: 15Sep2015, 10:37:53 Control Specifications: 24hr

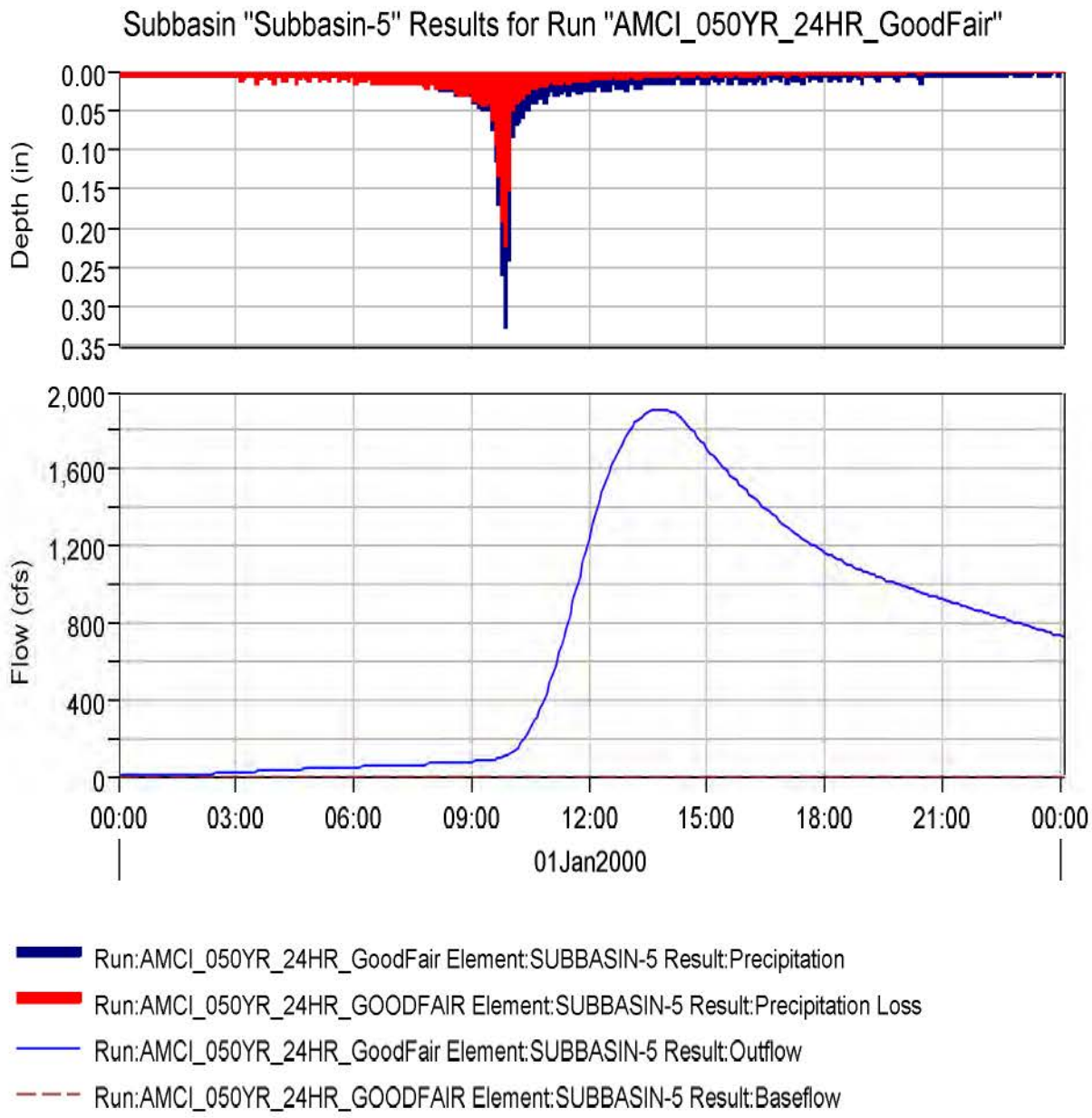
Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Subbasin-5	15.39	1910.4	01Jan2000, 13:50	1.67
Reach-4	15.39	1910.0	01Jan2000, 14:10	1.62
Subbasin-4	14.45	2066.2	01Jan2000, 12:25	1.62
Junction-1	29.84	3622.2	01Jan2000, 13:05	1.62
Reach-3	29.84	3621.5	01Jan2000, 13:25	1.58
Subbasin-3	10.11	807.6	01Jan2000, 12:40	0.97
Junction-2	39.95	4378.2	01Jan2000, 13:15	1.42
Reach-2	39.95	4377.5	01Jan2000, 13:20	1.41
Subbasin-2	7.16	705.8	01Jan2000, 11:45	1.01
Junction-3	47.11	4864.6	01Jan2000, 13:15	1.35
Subbasin-1	15.22	898.6	01Jan2000, 14:20	0.84
Junction-4	62.33	5687.2	01Jan2000, 13:20	1.23
Sink-1	62.33	5687.2	01Jan2000, 13:20	1.23

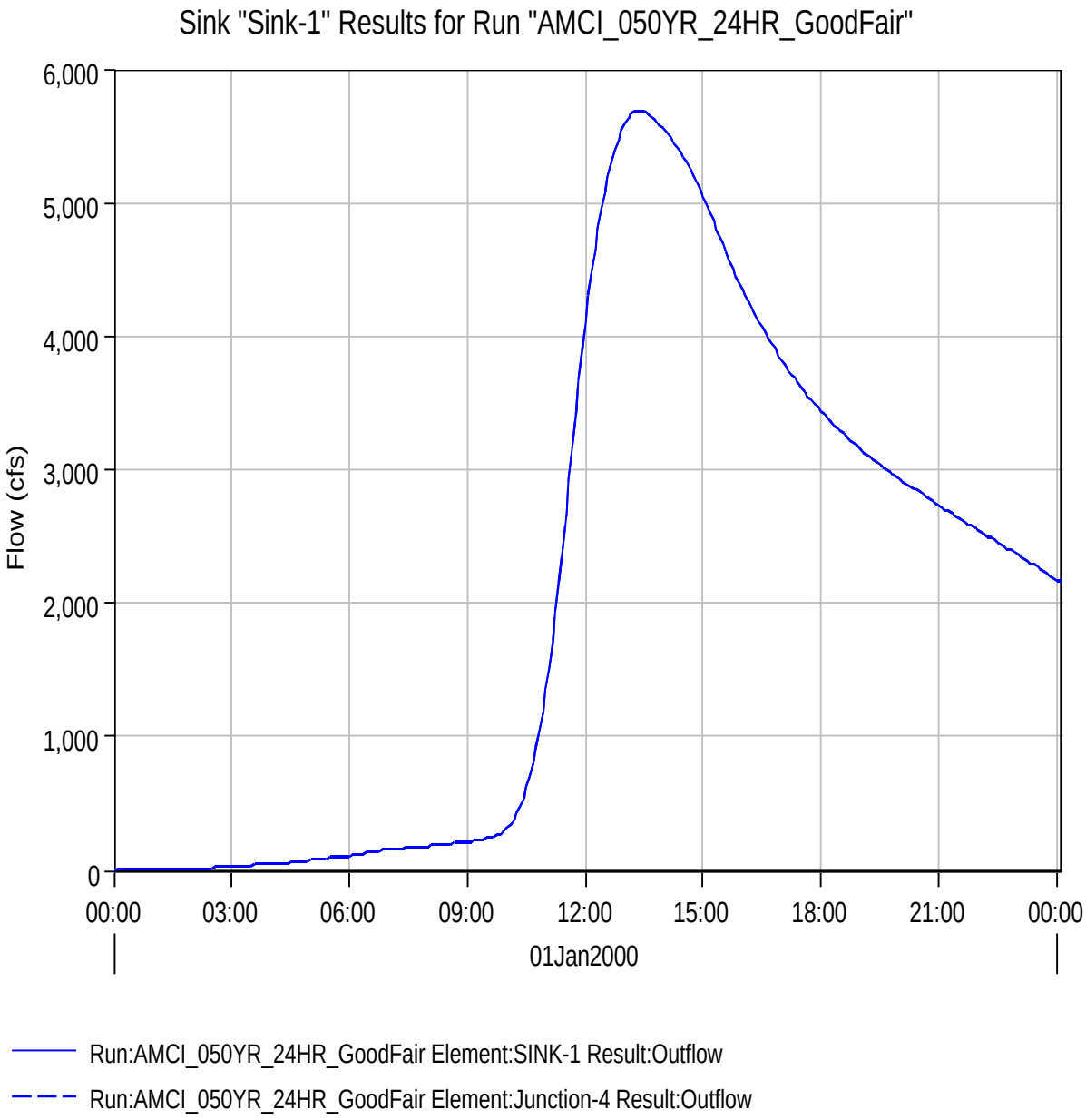

Subbasin "Subbasin-1" Results for Run "AMCI_050YR_24HR_GoodFair"
Depth (in)
0.00
0.05
0.10
0.15
Flow (cfs)
1,000
800
600
400
200
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Jan2000
Run:AMCI_050YR_24HR_GoodFair Element:SUBBASIN-1 Result:Precipitation
Run:AMCI_050YR_24HR_GOODFAIR Element:SUBBASIN-1 Result:Precipitation Loss
Run:AMCI_050YR_24HR_GoodFair Element:SUBBASIN-1 Result:Outflow
Run:AMCI_050YR_24HR_GOODFAIR Element:SUBBASIN-1 Result:Baseflow


Subbasin "Subbasin-2" Results for Run "AMCI_050YR_24HR_GoodFair"
Depth (in)
0.00
0.05
0.10
0.15
Flow (cfs)
800
700
600
500
400
300
200
100
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Jan2000
Run:AMCI_050YR_24HR_GoodFair Element:SUBBASIN-2 Result:Precipitation
Run:AMCI_050YR_24HR_GOODFAIR Element:SUBBASIN-2 Result:Precipitation Loss
Run:AMCI_050YR_24HR_GoodFair Element:SUBBASIN-2 Result:Outflow
Run:AMCI_050YR_24HR_GOODFAIR Element:SUBBASIN-2 Result:Baseflow


Subbasin "Subbasin-3" Results for Run "AMCI_050YR_24HR_GoodFair"
Depth (in)
0.00
0.05
0.10
0.15
Flow (cfs)
900
800
700
600
500
400
300
200
100
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Jan2000
Run:AMCI_050YR_24HR_GoodFair Element:SUBBASIN-3 Result:Precipitation
Run:AMCI_050YR_24HR_GOODFAIR Element:SUBBASIN-3 Result:Precipitation Loss
Run:AMCI_050YR_24HR_GoodFair Element:SUBBASIN-3 Result:Outflow
Run:AMCI_050YR_24HR_GOODFAIR Element:SUBBASIN-3 Result:Baseflow


Subbasin "Subbasin-4" Results for Run "AMCI_050YR_24HR_GoodFair"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Flow (cfs)
2,000
1,500
1,000
500
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Jan2000
Run:AMCI_050YR_24HR_GoodFair Element:SUBBASIN-4 Result:Precipitation
Run:AMCI_050YR_24HR_GOODFAIR Element:SUBBASIN-4 Result:Precipitation Loss
Run:AMCI_050YR_24HR_GoodFair Element:SUBBASIN-4 Result:Outflow
Run:AMCI_050YR_24HR_GOODFAIR Element:SUBBASIN-4 Result:Baseflow


Subbasin "Subbasin-5" Results for Run "AMCI_050YR_24HR_GoodFair"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
Flow (cfs)
2,000
1,600
1,200
800
400
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Jan2000
Run:AMCI_050YR_24HR_GoodFair Element:SUBBASIN-5 Result:Precipitation
Run:AMCI_050YR_24HR_GOODFAIR Element:SUBBASIN-5 Result:Precipitation Loss
Run:AMCI_050YR_24HR_GoodFair Element:SUBBASIN-5 Result:Outflow
Run:AMCI_050YR_24HR_GOODFAIR Element:SUBBASIN-5 Result:Baseflow


Sink "Sink-1" Results for Run "AMCI_050YR_24HR_GoodFair"
6,000
5,000
4,000
3,000
2,000
1,000
0
Flow (cfs)
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Jan2000
Run:AMCI_050YR_24HR_GoodFair Element:SINK-1 Result:Outflow
Run:AMCI_050YR_24HR_GoodFair Element:Junction-4 Result:Outflow

Jacalitos Creek Bridge Replacement on Lost Hills Avenue

Natural Environment Study

FRESNO COUNTY, CALIFORNIA
Kreyenhagen Hills 7.5 minute Quadrangle
Township 21 South, Range 15 East, Section 14
Caltrans District 6
BRLO-5942(234)

June 2017

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Natural Environment Study

JACALITOS CREEK BRIDGE REPLACEMENT ON LOST HILLS AVENUE
FRESNO COUNTY, CALIFORNIA

STATE OF CALIFORNIA
Department of Transportation
and County of Fresno

Prepared By: Jeff Gurule Date: June 30, 2017
Senior Project Manager
(559) 642-4880
Live Oak Associates, Inc.
39930 Sierra Way, Suite B
Oakhurst, CA 93644

Approved By: _____ Date: _____
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(559) 445-6314
District 6
Environmental Analysis, Planning and Local Programs

Approved By: _____ Date: _____
Shane Gunn, Branch Chief
(559) 445-6310
District 6
Environmental Analysis, Planning and Local Programs

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Summary

The County of Fresno, in cooperation with the California Department of Transportation, is proposing to replace the existing bridge on Lost Hills Road over Jacalitos Creek (Project) and make associated improvements that will repair and/or stabilize the creek banks upstream and downstream of the bridge. The Project is necessary to update the bridge to current standards. The proposed Project will occur within an area of approximately 8.0 acres, hereafter referred to as the Biological Study Area or BSA. The project will result in approximately 1.9 acres of permanent impacts, much of which constitutes previously developed land that experiences regular disturbance from vehicle traffic and road shoulder maintenance. The project will result in approximately 5.6 acres of temporary impacts.

The BSA contains ruderal areas consisting of ranch roads and the paved surface and scraped dirt shoulder of Lost Hills Road and Jacalitos Creek Road, valley saltbush scrub, and the Jacalitos Creek channel and floodplain. Although trees are absent from the BSA, it does supports abundant native and non-native grasses, herbs, and shrubs. The BSA provides potential habitat for seven (7) regionally-occurring special-status plant species. These comprise the state and federally endangered California jewelflower (*Caulanthus californicus*), the federally endangered San Joaquin woollythreads (*Monolopia congdonii*), and the following five (5) CNPS-listed 1B species: Lemmon's jewelflower (*Caulanthus coulteri* var. *lemmonii*), Hall's tarplant (*Deinandra halliana*), recurved larkspur (*Delphinium recurvatum*), pale-yellow layia (*Layia heterotricha*), and showy madia (*Madia radiata*). Protocol level surveys were conducted during the appropriate blooming periods for these species during the spring of 2016. None of these special status plant species were observed. Therefore, the Project is not expected to produce direct or indirect effects on special status plants. The BSA provides potential habitat for four (4) of the 28 special status animal species occurring in the Project vicinity. This determination resulted from numerous site surveys, including protocol level blunt-nosed leopard lizard (BNLL) (*Gambelia sila*) surveys yielding negative results and a protocol level small mammal trapping survey; as well as the analysis of the habitat requirements and currently known distributions of regionally occurring special status animal species.

The four (4) special status animal species potentially occurring on the BSA are the California glossy snake (*Arizona elegans occidentalis*), loggerhead shrike (*Lanius ludovicianus*), American badger (*Taxidea taxus*), and San Joaquin kit fox (*Vulpes macrotis mutica*). A combination of preconstruction surveys, relocation, avoidance of active nests and potentially occupied burrows, construction minimization measures, and environmental training of construction personnel are proposed to avoid and/or reduce impacts to these four (4) species.

The BSA provides potential nesting habitat for a number of migratory birds that are protected under the federal Migratory Bird Treaty Act. Preconstruction surveys prior to any work occurring during the nesting season and avoidance of active nests are proposed to minimize Project effects on nesting birds.

A small population of Mexican free-tailed bats (*Tadarida brasiliensis*) was observed under the existing onsite bridge during spring and summer surveys. Preconstruction surveys and appropriate exclusion measures are proposed to avoid construction related bat mortality.

The BSA includes a portion of Jacalitos Creek, which falls under the jurisdiction of the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. The Project will result in temporary and permanent impacts to these jurisdictional areas and will require a Clean Water Act Section 401 Water Quality Certification, Clean Water Act Section 404 Nationwide Permit, and Stream Alteration Agreement prior to construction.

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Chapter 1 – Introduction

This Natural Environment Study (NES) report has been prepared for the Jacalitos Creek Bridge Replacement on Lost Hills Avenue (Project), a collaborative effort by the County of Fresno (County) and the California Department of Transportation (Caltrans) to replace the existing two-lane structure (Bridge No. 42C0078) over Jacalitos Creek. The Project's primary objective is to improve public safety and increase load carrying capacity on the bridge.

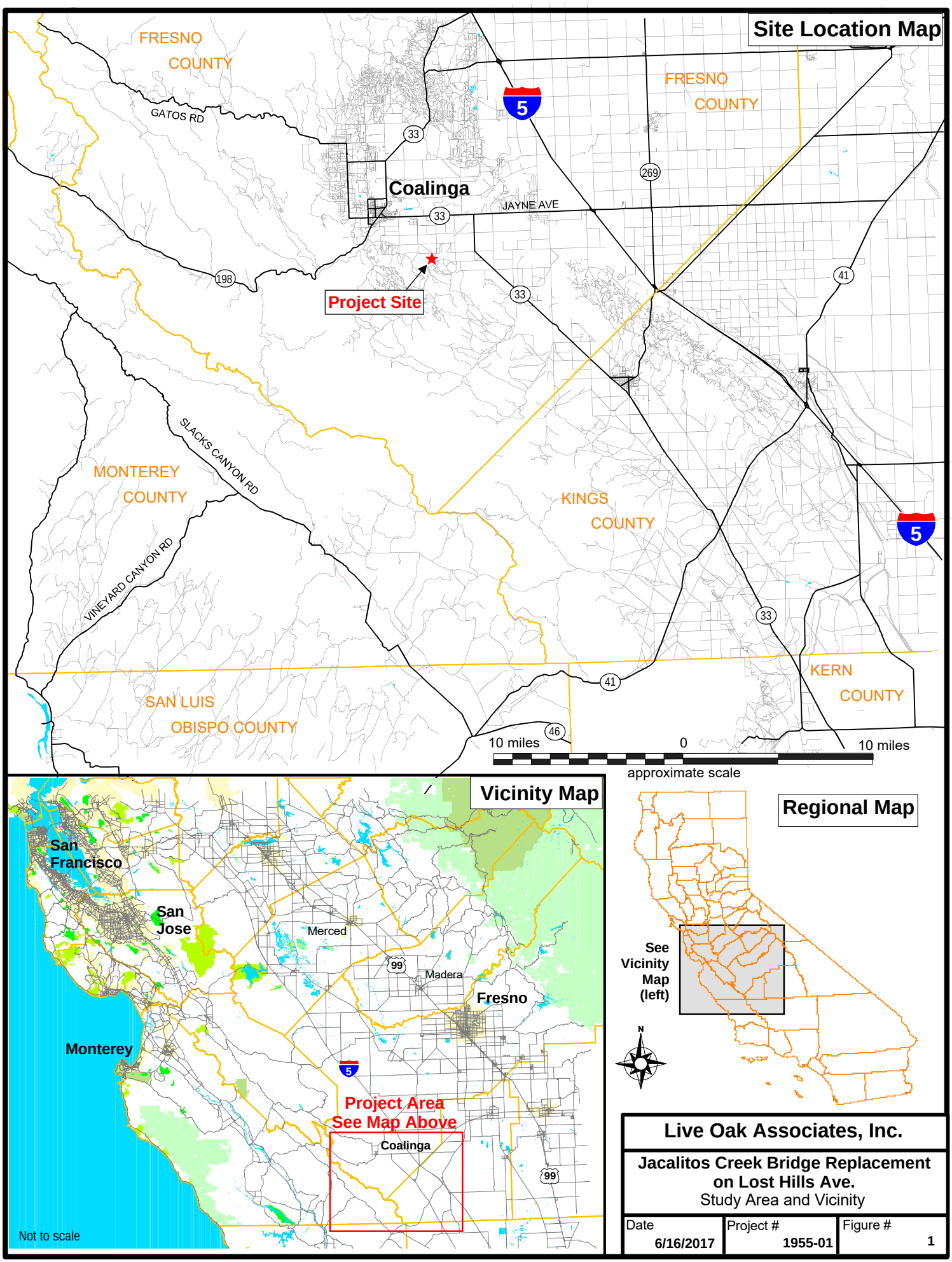
The proposed Project will be funded by the Federal Highway Bridge Program and, therefore, requires compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The lead agency for CEQA compliance is the County; the federal lead agency for NEPA compliance is Caltrans, as authorized under the NEPA Assignment Memorandum of Agreement between Caltrans and Federal Highway Administration. Accordingly, this NES report evaluates the Project's potential impacts on biological resources pursuant to both NEPA and CEQA, and proposes mitigation measures to avoid or reduce the magnitude of these impacts. This NES report generally follows the outline of the October 13, 2014 template found on the Caltrans Standard Environmental Reference web site (http://www.dot.ca.gov/ser).

1.1 Project Location

The Project is located at the West Lost Hills Road crossing of Jacalitos Creek approximately 3.0 miles southeast of the City of Coalinga, Fresno County (Figure 1). The site can be found on the Kreyenhagen Hills U.S. Geological Survey (USGS) 7.5 minute quadrangle in Township 21 South, Range 15 East, Section 14 (Figure 2).

1.2 Project History

The purpose of the Project is to replace the existing bridge with a bridge that meets current engineering standards and to place rock slope protection sufficient to protect the new bridge and existing roadway from floodwaters. This action is necessary to ensure public safety and protect publicly funded infrastructure.



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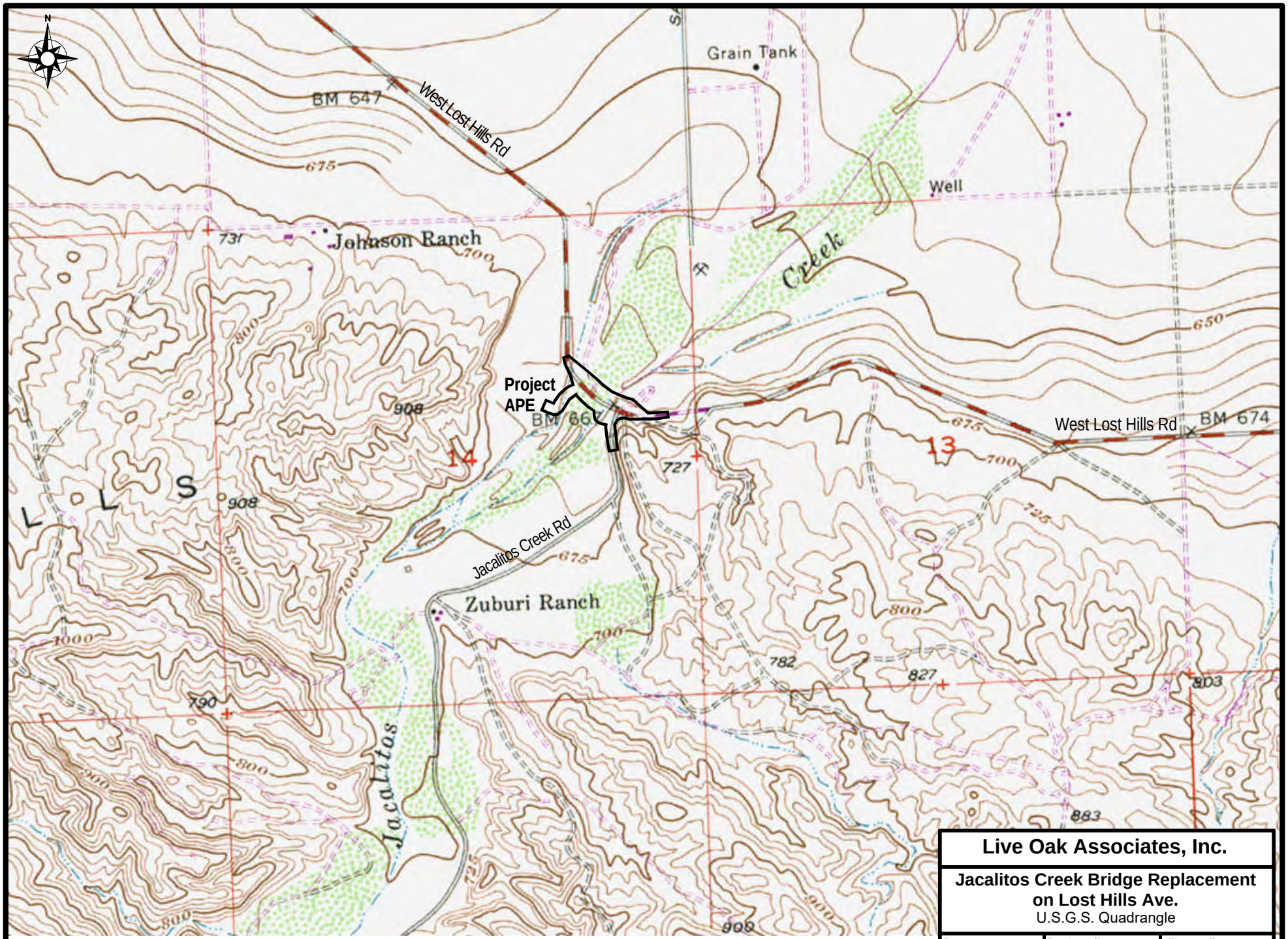
Jacalitos Creek Bridge Replacement on Lost Hills Ave.
Study Area and Vicinity

Date	Project #	Figure #
6/16/2017	1955-01	1



From USGS
Kreyenhagen Hills 7.5' Quadrangle 1971

1/2 mile 0 1/2 mile

approximate scale

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Jacalitos Creek Bridge Replacement on Lost Hills Ave.

U.S.G.S. Quadrangle

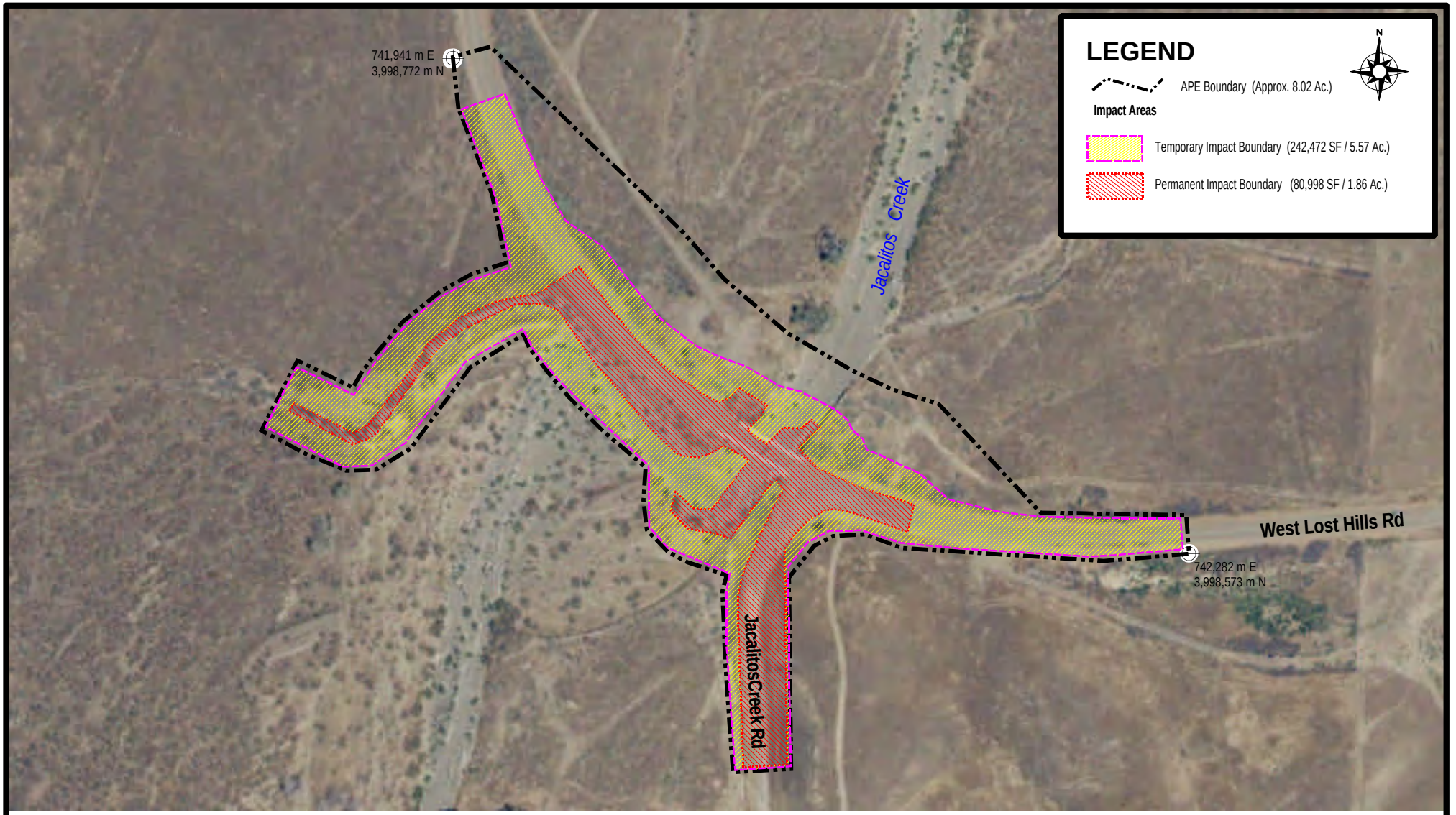
Date	Project #	Figure #
6/13/2017	**1955-01**	**2**

1.3 Project Description

The Project consists of replacing the Jacalitos Creek Bridge on Lost Hills Avenue at Jacalitos Creek Road, near the City of Coalinga. The existing functionally obsolete, 2-lane bridge would be replaced with a new 2-lane bridge that meets current standards. Jacalitos Creek Road may need to shift slightly at the intersection with Lost Hills Avenue to accommodate approach railing. A temporary road is proposed northeast of the existing W Lost Hills Rd and bridge to move traffic through the construction site, crossing Jacalitos Creek at an onsite low water crossing (see Appendix A). A right of way acquisition may be required. Utility relocation is not anticipated. Further investigation is required to determine the bridge design; however, a conceptual design is presented in Appendix A. The five-span timber structure was originally built in 1940 and two spans were reconstructed of reinforced concrete slab in 1962. It is approximately 28' in width and 98' in length with two 11' wide travel lanes and 2' wide shoulders. The proposed structure could be approximately 140' in length and approximately 32' in width. Further investigation is required.

The Project will occur within an area of approximately 8.0 acres, hereafter referred to as the Biological Study Area or BSA. Project activities will result in approximately 5.6 acres of temporary impact and approximately 1.9 acres of permanent impacts (see Figure 3).

The Project is scheduled to commence during the summer of 2018.



500' 0 500 feet

Approximate Scale
1' = 200'

Source:
Aerial Photograph Courtesy of USDA-FSA Aerial Photography Field Office, 11/4/2014
Universal Transverse Mercator Coordinate System Zone 10, NAD83 / NAVD 1988

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Jacalitos Creek Bridge Replacement on Lost Hills Ave.
Impact Areas

Date	Project #	Figure #
6/16/2017	1955-01	3

Chapter 2 – Study Methods

2.1 Regulatory Requirements

2.1.1 THREATENED AND ENDANGERED SPECIES

State and federal "endangered species" legislation has provided the California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Permits may be required from both the CDFW and USFWS if activities associated with a proposed Project will result in the "take" of a species listed under the state or federal Endangered Species Acts. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3).

2.1.2 CRITICAL HABITAT

The USFWS often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is defined by section 3(5)(A) of the federal Endangered Species Act as "(i) The specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species." The Act goes on to define "conservation" as "the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which listing under the Act is no longer necessary."

The designation of a specific area as critical habitat does not directly affect its ownership. Federal actions that result in destruction or adverse modification of critical habitat are, however, prohibited in the absence of prior consultation with the USFWS according to provisions of the act. Furthermore, recent appellate court cases require that federal

actions affecting critical habitat promote the recovery of the listed species protected by the critical habitat designation.

2.1.3 MIGRATORY BIRDS

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all birds native to the United States, even those that are non-migratory. The only native birds occurring in California that are exempt from the FMBTA are the wrentit (*Chamaea fasciata*) and certain game species such as quail and grouse. The FMBTA encompasses whole birds, parts of birds, and bird nests and eggs. Additionally, California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the FMBTA (Section 3513), as well as any other native non-game bird (Section 3800).

2.1.4 BIRDS OF PREY

Birds of prey are protected in California under provisions of the Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

2.1.5 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages with a defined bed and bank that may carry at most ephemeral flows, lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), CDFW, and the California Regional Water Quality Control Board (RWQCB).

The USACE regulates the filling or grading of jurisdictional waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by “ordinary high water marks” on opposing channel banks. All activities that

involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 certification (or waiver of such certification) that the proposed activity will meet state water quality standards.

The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction, is regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit. All Projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code (2003). Activities that would disturb these waters are regulated by the CDFW via a Stream Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question.

2.2 Studies Required and/or Completed

Potential biological resource issues associated with the proposed Project were identified through a review of existing information and field surveys. Information sources used in the preparation of this analysis included: *USFWS List of Endangered, Threatened, and Proposed Species* (USFWS 2016), the *California Natural Diversity Database* (CNDDB) (CDFW 2017a); the *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2016); current listings from *Special Animals List* (CDFW 2017b) and *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2017c); and manuals and references related to plants and animals of California's Central Valley.

Field surveys consisted of a wetland delineation, protocol level BNLL surveys, protocol level small mammal trapping surveys, protocol level rare plant surveys, and habitat suitability assessment surveys for plant and animal species that are listed under the state

or federal Endangered Species Acts, subject to California Environmental Quality Act (CEQA) analysis, and/or protected by law. A list of terrestrial vertebrates observed and/or expected to use the site are presented in Appendix B.

2.2.1 WETLAND DELINEATION

A walking survey of the BSA was conducted for jurisdictional waters. LOA field investigators used aerial photography, a USGS topographic map, and Project disturbance boundaries to guide the survey effort. The boundaries of likely jurisdictional waters were mapped using a Trimble Geo XT GPS unit. LOA prepared the maps depicting likely jurisdictional waters using information collected in the field overlaid on a recent Google Earth aerial image.

The survey was consistent with guidelines found in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987), *Minimum Standards for Acceptance of Preliminary Wetland Delineations* (USACE 2001), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008).

2.2.3 BNLL SURVEYS

LOA conducted BNLL surveys in accordance with CDFW's *Approved Survey Methodology For The Blunt-Nosed Leopard Lizard* (May 2009). The surveys were conducted over the course of a year, with 12 adult BNLL surveys and 5 juvenile BNLL surveys conducted in 2015, and 4 adult BNLL surveys conducted in 2016. The first four adult surveys in 2015 didn't cover approximately 1.1 acres of the current BSA, and the remaining 2015 surveys excluded approximately 0.4 acres of the current BSA. The 2016 surveys covered a 0.7-acre area excluded from the first four 2015 surveys. In 2017 a new APE was developed that included approximately 0.4 acres of additional impact area to the BSA that were not targeted in either the 2015 or 2016 BNLL survey efforts. However, this small area consists of a steep hillside, the paved surface of Jacalitos Creek Rd, and unpaved road shoulders; much of which constituted unsuitable habitat for BNLL.

All BNLL surveys were conducted by two LOA field investigators, at least one of which was a Level II surveyor. The field investigators walked transects spaced approximately

50 feet apart and recorded all reptile species observed on field datasheets. A copy of the master datasheet compiling the results of all the BNLL surveys is presented in Appendix C.

2.2.4 SMALL MAMMAL TRAPPING SURVEYS

LOA biologist Geoff Cline (USFWS Permit #50510A-3 and CDFW SCP #5981) conducted a five-day trapping survey for giant kangaroo rat (*Dipodomys ingens*) from May 7 to 12, 2017. The survey was authorized by the USFWS via email on May 4, 2017 and followed the USFWS's *Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats* (March 2013). Sixty-three traps were set and checked over the five night period and no special status species were captured. The species that were captured included California pocket mouse (*Chaetodipus californicus*), San Joaquin pocket mouse (*Perognathus inornatus*), deer mouse (*Peromyscus maniculatus*), and Heermann's kangaroo rat (*Dipodomys heermanni*). A copy of the master datasheet compiling the results of all the small mammal trapping surveys is presented in Appendix D.

2.2.5 BOTANICAL SURVEYS

Surveys for special status plant species were conducted by an LOA botanist during the blooming period of seven (7) target species that are known to occur within similar habitats within the region. These species are the state and federally endangered California jewelflower (*Caulanthus californicus*), the federally endangered San Joaquin woollythreads (*Monolopia congdonii*), and the following five (5) CNPS-listed 1B species: Lemmon's jewelflower (*Caulanthus coulteri* var. *lemmonii*), Hall's tarplant (*Deinandra halliana*), recurved larkspur (*Delphinium recurvatum*), pale-yellow layia (*Layia heterotricha*), and showy madia (*Madia radiata*). The botanical surveys were conducted in accordance with CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (2009). The surveys focused on identifying suitable habitat for the target species, and identifying plants based on flower, leaf and/or fruit morphology. A comprehensive list of vascular plants identified on the BSA is presented in Appendix E.

2.3 Project Work Limits and the Biological Study Area

The Project work limit includes all areas of potential permanent and temporary impacts where ground disturbance will occur, including temporary construction and staging areas for the proposed Project. The BSA includes the Project work limits as well as an asymmetrical buffer area around the Project work limits to accommodate any changes to Project limits that may occur during Project development and to account for potential indirect effects to sensitive resources (Figure 3).

2.4 Personnel and Survey Dates

2.4.1 WETLAND DELINEATION

Surveys were conducted in June and July of 2015 by LOA wildlife/plant/wetland ecologist Jeff Gurule assisted by LOA ecologist Rebekah Jensen. Mr. Gurule has 10 years of experience delineating wetlands. During this time he has completed numerous wetland delineations across central California that have been verified by the USACE.

2.4.2 BNLL SURVEYS

LOA ecologists Jeff Gurule (Level II Surveyor), Katrina Krakow (Level II Surveyor), Rebekah Jensen (Level I Surveyor), Austin Pearson (Level I Surveyor), Wendy Fisher (Level I Surveyor), and LOA associate Mark Jennings (Level II Surveyor) conducted BNLL surveys of the BSA in 2015 on June 8, 9, 10, 11, 23, 24, 29, & 30; July 10, 13, 14, & 15; August 25, 26, & 31; and September 1 & 2. Four surveys were also conducted on June 1 & 17 and July 6 & 13, 2016 across a small 0.7 acre area not included in the first four surveys of 2015. Prior to the initiation of the surveys, all Level II surveyors had completed more than 50 survey days and had identified both adult and juvenile BNLLs in the wild. All Level I surveyors had demonstrated the ability to distinguish BNLL from other common lizards.

2.4.3 SMALL MAMMAL TRAPPING SURVEYS

Small mammal trapping surveys were conducted by LOA wildlife ecologist Geoff Cline (USFWS Recovery Permit #50510A-3 and CDFW SCP #5981) from May 7 to 12, 2017. Mr. Cline has conducted numerous small mammal trapping surveys throughout central California and has identified and handled many special status small mammal species

including the giant kangaroo rat and short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus*).

2.4.4 BOTANICAL SURVEYS

Rare plant surveys were conducted by LOA wildlife/plant/wetland ecologist Jeff Gurule on February 25, March 18, and April 20, 2016. Mr. Gurule has conducted numerous rare plant surveys in Central California as well as many wetland delineations and reconnaissance surveys in which plant species were identified and recorded. During these experiences, Mr. Gurule has become familiar with many plant communities including the plant communities occurring on the BSA.

2.5 Agency Coordination and Professional Contacts

As follows is a summary of agency consultation and coordination to date for the proposed Project.

- March, 2016. LOA coordinated with Caltrans biologist Elmer Llamas to determine who will be responsible for submitting the wetland delineation map and report to the USACE. Mr. Llamas indicated that Caltrans would submit the delineation to the USACE for verification.

- May 4, 2017. The USFWS authorized small mammal trapping surveys on the site.

2.6 Limitations That May Influence Results

No limitations that would influence the results of this NES were encountered.

Chapter 3 – Results: Environmental Setting

This chapter describes the existing conditions of the BSA and surrounding lands. The BSA is here defined as the 8.0-acre area within which all biological investigations occurred and all proposed Project impacts will be contained within.

3.1 Description of the Existing Biological and Physical Conditions

3.1.1 STUDY AREA

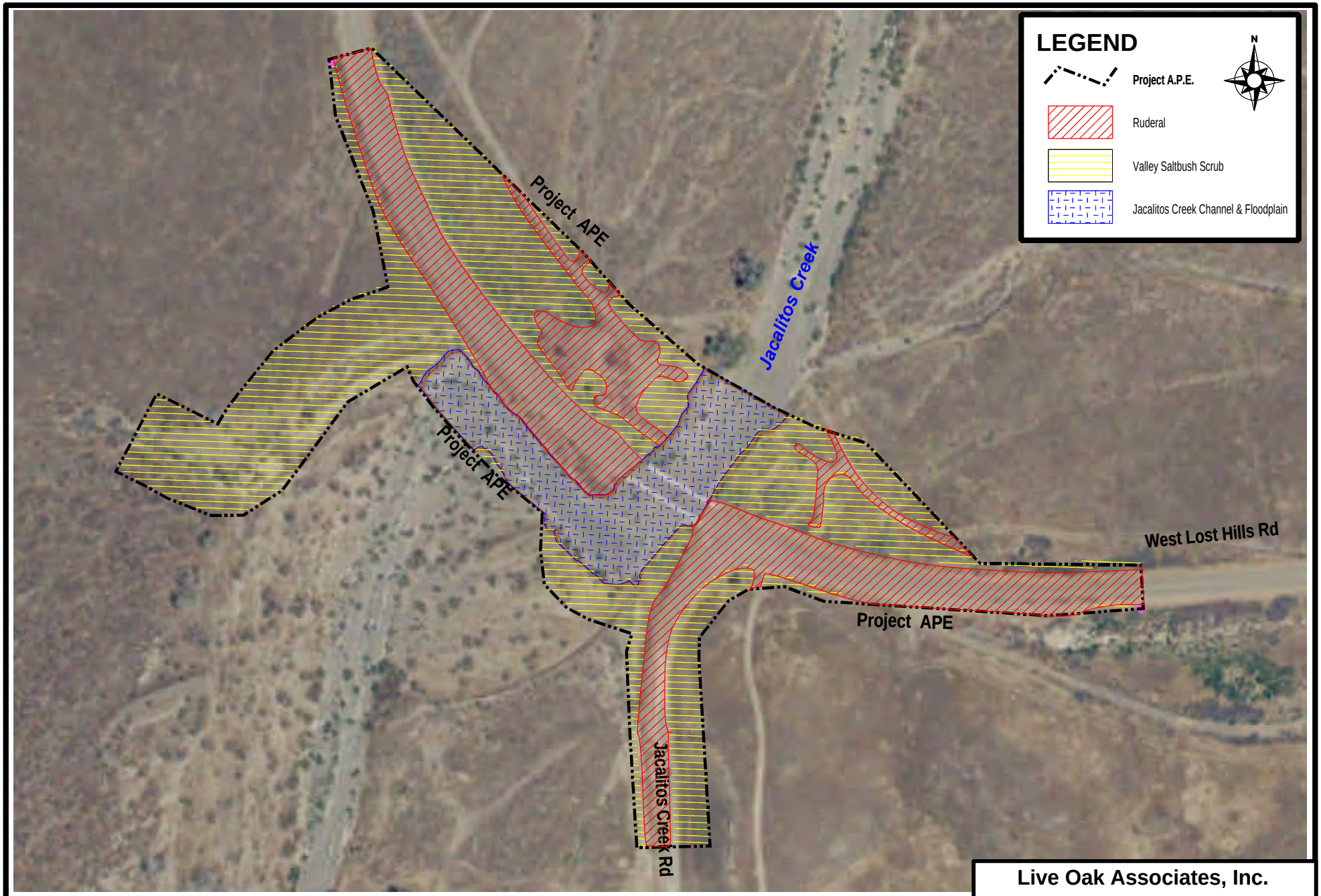
The BSA is located on the western edge of the San Joaquin Valley, which is in the southernmost basin of the Central Valley of California. The BSA comprises approximately 1,379 feet of West Lost Hills Road including the Jacalitos Creek Bridge, approximately 446 feet of Jacalitos Creek Road, a portion of the Jacalitos Creek channel, and surrounding valley saltbush scrub (see Figure 4 and Appendix F for photos). A portion of the BSA is regularly disturbed by road maintenance activities and regular vehicular traffic. Surrounding land uses consist of non-native grassland, valley saltbush scrub, the continuing roads, and the continuing Jacalitos Creek channel.

3.1.2 PHYSICAL CONDITIONS

With the exception of the incision of the Jacalitos Creek channel and a section of steep hillside east of Jacalitos Creek Rd, the BSA is relatively flat. The elevation of the study area is approximately 667 feet National Geodetic Vertical Datum (NGVD) (see Figure 2). The BSA, like most of California, has a Mediterranean climate with cool somewhat moist winters and hot dry summers. Precipitation falls in the form of rain between October and May, with the heaviest amounts in December, January, February, and March. Annual precipitation is approximately 8.25 inches.

The site is dominated by the drainage channel of Jacalitos Creek, which functions as a desert wash with only seasonal flows occurring during the winter months after heavy rains. During especially heavy rains, flood flows can occur within the flood plain of the channel.

The following four soil mapping units are located within the BSA: Excelsior, sandy



500 feet 0 500 feet

approximate scale

Source:
Aerial Photograph Courtesy of USDA-FSA Aerial Photography Field Office, 9/29/2016
Universal Transverse Mercator Coordinate System Zone 10, NAD83 / NAVD 1988

Live Oak Associates, Inc.

Jacalitos Creek Bridge Replacement on Lost Hills Ave.
Biotic Habitats

Date	Project #	Figure #
6/16/2017	1955-01	4

substratum-westhaven association, flooded, 0 to 2 percent slopes; Excelsior sandy loam, sandy substratum, 0 to 2 percent slopes; Excelsior sandy loam, 0 to 2 percent slopes, MLRA 17; and Milham-Guijarral association, 5 to 15 percent slopes (California Soil Resource Lab 2008). These soils are well drained and are not classified as hydric and, therefore, not prone to wetland formation.

3.1.3 BIOLOGICAL CONDITIONS IN THE BIOLOGICAL STUDY AREA

3.1.3.1 Valley Saltbush Scrub

Valley saltbush scrub generally occurs in areas of undeveloped land within the San Joaquin Valley. This vegetation community is characterized by plants adapted to limited rainfall and mostly sandy to sandy loam soils. Shrubs observed in this vegetation community within the BSA included allscale (*Atriplex polycarpa*), California matchstick (*Gutierrezia californica*), and Russian thistle (*Salsola tragus*). Annual grasses and forbs included red brome (*Bromus madritensis* ssp. *rubens*), red-stemmed filaree (*Erodium cicutarium*), common fireweed (*Ansinckia intermedia*), Hoover's eriastrum (*Eriastrum hooveri*), California mustard (*Caulanthus lasiophyllus*), and winged comb seed (*Pectocarya penicillata*).

The valley saltbush scrub observed on the site provides habitat for many native terrestrial vertebrate species; however, the degree to which this habitat is used by these species has probably been adversely affected by the proximity of Lost Hills Road and past soil disturbance and dumping on the site. Amphibians are expected to be absent from the BSA due to the lack of sufficient surface water to support the aquatic phase of these animals. Reptiles observed in this habitat included side-blotched lizards (*Uta stansburiana*) and western whiptails (*Cnemidophorus tigris mundus*). Other reptiles expected in this habitat of the site include northern Pacific rattlesnake (*Crotalus oreganus oreganus*), gopher snake (*Pituophis melanoleucus*), and common kingsnake (*Lampropeltis getulus*). Birds observed within the onsite valley saltbush scrub included the horned lark (*Eremophila alpestris*), common raven (*Corvus corax*), yellow-rumped warbler (*Dendroica coronata*), western meadowlark (*Sturnella neglecta*), house finch (*Haemorhous mexicanus*), white-crowned sparrow (*Zonotrichia leucophrys*), and sage thrasher (*Oreoscoptes montanus*). Small mammal species potentially occurring in valley

saltbush scrub habitat of the BSA include the Heermann's kangaroo rat, western harvest mouse (*Reithrodontomys megalotis*), deer mouse, and southern grasshopper mouse (*Onychomys torridus*). Rodent burrows were observed in some portions of this habitat at the time of the field survey. Mammalian predators likely to utilize this onsite habitat include the coyote (*Canis latrans*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*).

3.1.3.2 Jacalitos Creek Channel and Flood Plain

An approximately 600-foot reach of Jacalitos Creek and its adjoining flood plain occupy a sizable portion of the BSA. The bottom and lower sides of the channel below the ordinary high water mark were sparsely vegetated with mostly native upland forbs and shrubs. Forbs in this area included annual bursage (*Ambrosia acanthicarpa*), anglestem buckwheat (*Eriogonum angulosum*), redstem filaree (*Erodium cicutarium*), and valley spurge (*Euphorbia ocellata ssp. ocellata*). Shrubs in this area included California broomshrub (*Lepidospartum squamatum*), California matchweed (*Gutierrezia californica*), and mule fat (*Baccharis salicifolia*).

The vegetation found in this habitat provides cover for several vertebrate species. Amphibians are expected to be absent from this area due to the ephemeral nature of flows within the channel and the otherwise dry desert-like conditions of the site. Reptiles observed in this area during blunt-nosed leopard lizard surveys included side-blotch lizards, desert spiny lizards (*Sceloporus magister*), and western whiptails. Reptiles such as the northern Pacific rattlesnake, gopher snake, and common kingsnake could also use this habitat as well.

The various shrubs found here provide cover and foraging habitat for several bird species. Some of the birds observed in this habitat included Anna’s hummingbird (*Calypte anna*), white crowned sparrow, greater roadrunner (*Geococcyx californianus*), and nesting lesser nighthawks (*Chordeiles acutipennis*). Raptors observed in this habitat include American kestrel (*Falco sparverius*) and red-tailed hawk (*Buteo jamaicensis*).

Understory vegetation occurring on the channel banks and in the flood plain provide cover for various small mammal species. Rodents expected in the valley saltbush scrub habitat are likely to occur within the creek channel when dry. Various predators such as

the striped skunk, raccoon, and coyote are expected to occasionally forage in the channel. Various bat species could forage over this habitat and other areas of the BSA. In fact, Mexican free-tailed bats (*Tadarida brasiliensis*) were observed roosting in cracks beneath the existing onsite bridge.

3.1.3.3 Ruderal

Ruderal land use on the site consists of paved roads and their unpaved shoulders, as well as areas of rock-slope protection. The term "ruderal" refers to areas that are disturbed by anthropogenic influences, in this case by vehicular traffic, littering, road maintenance, and placement of artificial substrates (i.e. rock-slope protection). This onsite land use is characterized by low plant and animal species diversity. At the time of the field surveys, ruderal areas of the BSA contained little to no vegetation cover. What vegetation that did occur in this area consisted of grasses and forbs found on adjacent valley saltbush scrub habitat, including wire lettuce (*Stephanomeria pauciflora*), Indian hedge mustard (*Sisymbrium orientale*), Russian thistle, and red brome.

Similarly, animal species associated with this land use would be limited due to ongoing disturbance and general lack of vegetation. Use of this area by amphibians is expected to be absent due to a paucity of water in this region. Reptile species likely occurring in this area would be much the same as those occurring on the adjacent scrubland, with side-blotched lizards frequenting this area of the BSA the most. For the most part, bird species from surrounding scrubland and Jacalitos Creek channel would mostly just move through onsite ruderal lands on their way to more suitable habitats. Evidence of small mammal use of this area was not observed. Like the bird species in the area, small mammals are expected to make little use of onsite ruderal areas, due to the absence of vegetation for cover and food, and would likely pass through this area en route to more suitable habitat. Likewise, larger mammalian species are expected to only pass through this area of the BSA.

3.1.4 HABITAT CONNECTIVITY

The Jacalitos Creek channel is expected to function as a movement corridor for common resident terrestrial wildlife species. The channel provides a corridor between natural habitats of the Kreyenhagen Hills and Anticline Ridge via Pleasant Valley. The BSA

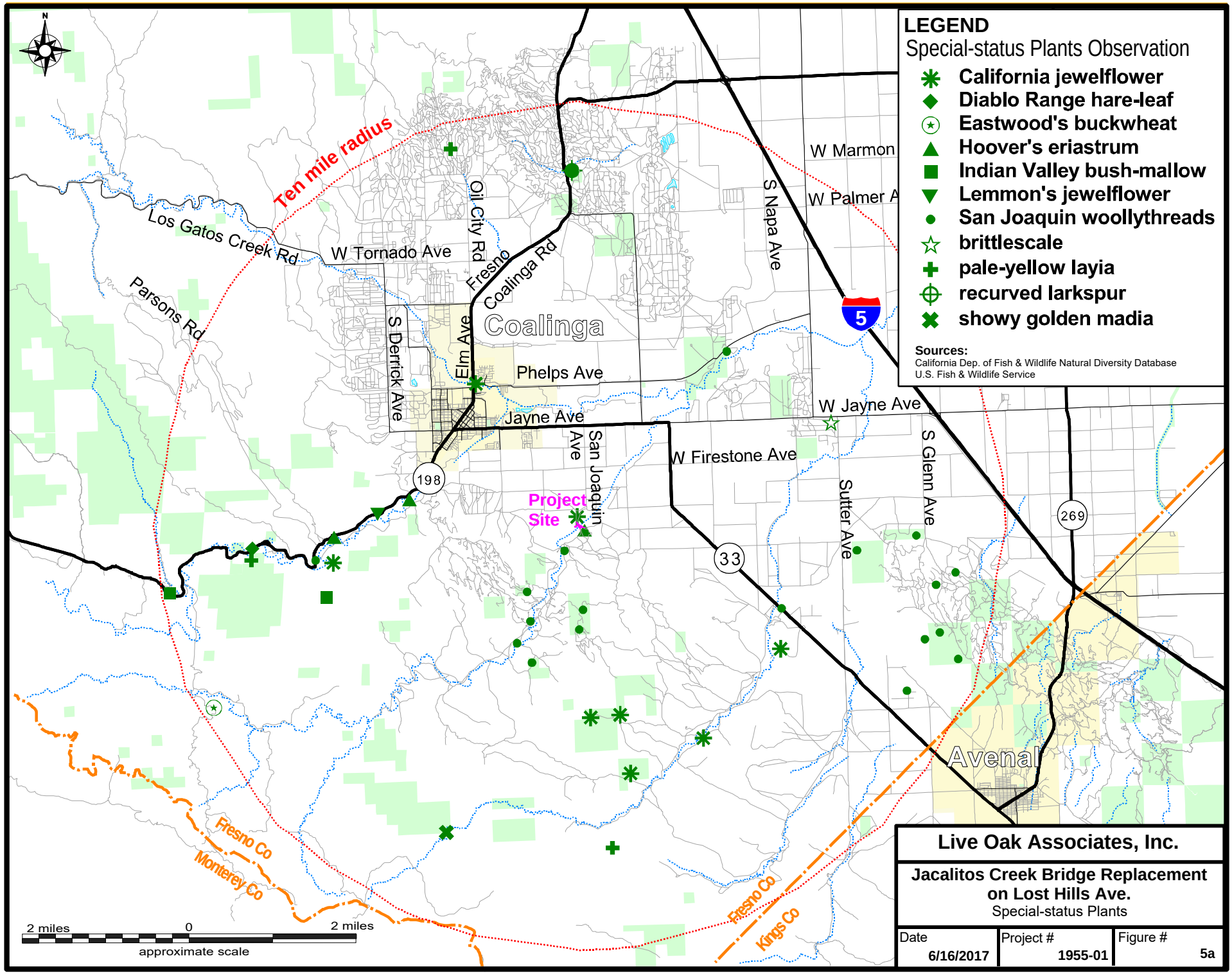
provides no opportunity for fish passage since ephemeral flows within the Jacalitos Creek channel do not support any fish populations.

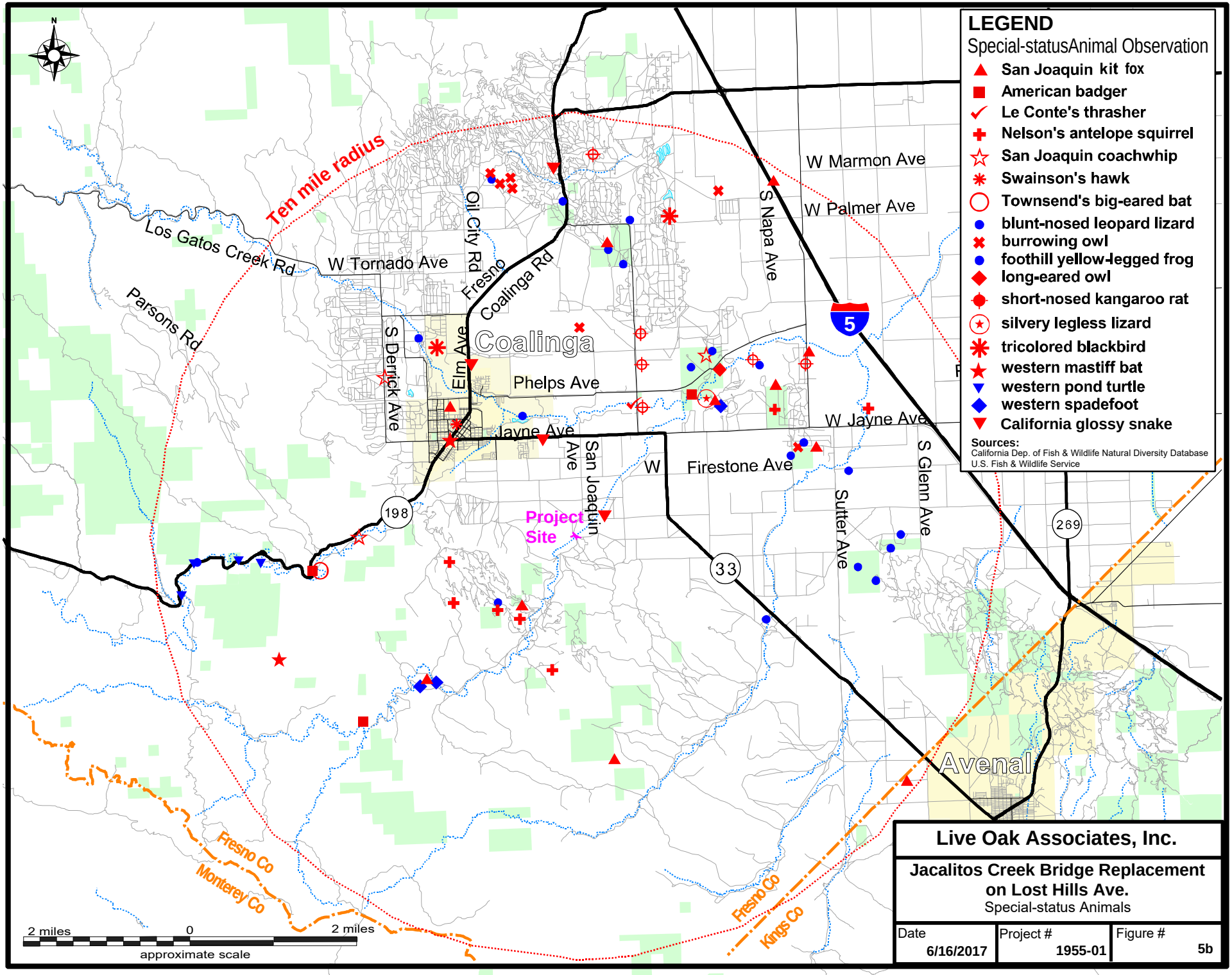
3.2 Regional Species and Habitats and Natural Communities of Concern

A number of species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2016). Collectively, these plants and animals are referred to as "special status species."

The *California Natural Diversity Data Base* (CNDDB; CDFW 2017a) was queried for special status species occurrences in the nine USGS 7.5-minute quadrangles containing and surrounding the BSA (*Kreyenhagen Hills, Alcalde Hills, Avenal, Coalinga, Curry Mountain, Garza Peak, Guijarral Hills, Parkfield, and The Dark Hole*) (see Appendix G). An official species list was obtained using the USFWS Information for Planning and Conservation (IPaC) system for federally listed species with the potential to be affected by the Project (USFWS 2016) (see Appendix H). These species, and their potential to occur within the BSA, are listed in Table 1 on the following pages. Sources of information for this table included the CNDDB, LOA survey results, *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988-1990), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2016).

Special status species occurrences within 10 miles of the BSA are depicted in Figure 5a and Figure 5b.


LEGEND
Special-status Plants Observation
California jewelflower
Diablo Range hare-leaf
Eastwood's buckwheat
Hoover's eriastrum
Indian Valley bush-mallow
Lemmon's jewelflower
San Joaquin woollythreads
brittlescale
pale-yellow layia
recurved larkspur
showy golden madia
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
Ten mile radius
Project Site
Coalinga
Avenal
Los Gatos Creek Rd
W Tornado Ave
Parsons Rd
Oil City Rd
Fresno
Coalinga Rd
S Derrick Ave
Elm Ave
Phelps Ave
Jayne Ave
San Joaquin Ave
W Firestone Ave
W Marmon
W Palmer A
S Napa Ave
W Jayne Ave
S Glenn Ave
Sutter Ave
198
33
5
269
Fresno Co
Monterey Co
Fresno Co
Kings Co
2 miles
0
2 miles
approximate scale
Live Oak Associates, Inc.
Jacalitos Creek Bridge Replacement on Lost Hills Ave.
Special-status Plants
Date 6/16/2017
Project # 1955-01
Figure # 5a


LEGEND
Special-statusAnimal Observation
San Joaquin kit fox
American badger
Le Conte's thrasher
Nelson's antelope squirrel
San Joaquin coachwhip
Swainson's hawk
Townsend's big-eared bat
blunt-nosed leopard lizard
burrowing owl
foothill yellow-legged frog
long-eared owl
short-nosed kangaroo rat
silvery legless lizard
tricolored blackbird
western mastiff bat
western pond turtle
western spadefoot
California glossy snake
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
Ten mile radius
Project Site
Coalinga
Avenal
W Marmon Ave
W Palmer Ave
W Tornado Ave
W Jayne Ave
W Firestone Ave
Phelps Ave
Jayne Ave
Los Gatos Creek Rd
Parsons Rd
Oil City Rd
Fresno Coalinga Rd
S Napa Ave
S Derrick Ave
Elm Ave
San Joaquin Ave
Sutter Ave
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approximate scale
Live Oak Associates, Inc.
Jacalitos Creek Bridge Replacement on Lost Hills Ave.
Special-status Animals
Date 6/16/2017
Project # 1955-01
Figure # 5b

Table 1: Listed, Proposed Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area.

Special Status Plant Species

Species	Status	Habitat	Occurrence in the BSA/Rationale
California Jewel-Flower (*Caulanthus californicus*)	FE, CE, CNPS 1B.1	Chenopod scrub, valley and foothill grassland. Blooms February-May.	**A.** Although the CNDDB lists a 1931 occurrence of this species in the BSA, subsequent surveys determined that that the population may have been extirpated. Protocol level botanical surveys found no evidence of this species on the BSA.
San Joaquin Woollythreads (*Monolopia congdonii*)	FE, CNPS 1B.2	Chenopod scrub, valley and foothill grassland that have alkaline loamy to sandy soils. Blooms February-May.	**A.** Protocol level botanical surveys found no evidence of this species on the BSA.
Brittlescale (*Atriplex depressa*)	CNPS 1B.2	Chenopod scrub, meadows, playas, valley and foothill grasslands, and vernal pools. Blooms May-October.	**A.** Suitable habitat is marginal for this species due to the absence of vernally moist areas. Additionally, the BSA is outside the known range of this species. Only one occurrence of this species is documented west of Interstate 5, approximately 6.5 miles northeast of the BSA (CDFW 2017a).
Round-Leaved Filaree (*California macrophylla*)	CNPS 1B.2	Clay soils within cismontane woodland, valley and foothill grassland. Blooms March-May.	**A.** Clay soils required by this species are absent from the BSA.
Lemmon's Jewelflower (*Caulanthus coulteri* var. *lemmonii*)	CNPS 1B.2	Pinyon and juniper woodland, valley and foothill grasslands. Blooms March-May.	**A.** Protocol level botanical surveys found no evidence of this species on the BSA.
Hall's Tarplant (*Deinandra halliana*)	CNPS 1B.1	Chenopod scrub, valley and foothill grassland. Blooms April-May.	**A.** Protocol level botanical surveys found no evidence of this species on the BSA.
Recurved Larkspur (*Delphinium recurvatum*)	CNPS 1B.2	Chenopod scrub, valley and foothill grassland. Blooms March-May.	**A.** Protocol level botanical surveys found no evidence of this species on the BSA.
Eastwood's Buckwheat (*Eriogonum eastwoodianum*)	CNPS 1B.3	Shale, including diatomaceous shale in cismontane woodland. Blooms May - September.	**A.** Suitable habitat for this species is absent from the BSA.
Temblor Buckwheat (*Eriogonum temblorense*)	CNPS 1B.2	Clay or sandstone substratum in valley and foothill grassland. Blooms May-September.	**A.** Suitable soils for this species is absent from the BSA.
Diablo Range Hare-Leaf (*Lagophylla diabolensis*)	CNPS 1B.2	Clay soils within cismontane woodland, valley and foothill grassland. Blooms April - August.	**A.** Clay soils required by this species are absent from the BSA.
Pale-Yellow Layia (*Layia heterotricha*)	CNPS 1B.1	Valley and foothill grassland. Blooms March-June.	**A.** Protocol level botanical surveys found no evidence of this species on the BSA.
Showy Madia (*Madia radiata*)	CNPS 1B.1	Grasslands of California's San Joaquin Valley and Inner Coast Range. Blooms March-May.	**A.** Protocol level botanical surveys found no evidence of this species on the BSA.
Indian Valley Bush Mallow (*Malacothamnus aboriginum*)	CNPS 1B.2	Chaparral and rocky cismontane woodland. Blooms April-October.	**A.** Suitable habitat for this species is absent from the BSA.
Shining Navarretia (*Navarretia nigelliformis* ssp. *radians*)	CNPS 1B.2	Cismontane woodland, valley and foothill grassland, vernal pools. Blooms May-July.	**A.** Suitable habitat for this species in the form of vernal pools is absent from the BSA.

State and Federally Listed Animal Species

Species	Status	Habitat	Occurrence in the BSA/Rationale
Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	FT	Found in vernal pools of California's Central Valley.	**A.** Vernal pools required by this species are absent from the BSA.
Delta Smelt (*Hypomesus transpacificus*)	FT	This slender-bodied fish is endemic to the San Francisco Bay and Sacramento-San Joaquin Delta upstream through Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties.	**A.** Suitable habitat is absent from the BSA. Furthermore, the BSA is situated well outside of the known distribution of this species.
California Red-Legged Frog (*Rana aurora draytonii*)	FT, CSC	Perennial rivers, creeks and stock ponds of the Coast Range and northern Sierra foothills with overhanging vegetation.	**A.** Suitable habitat for this species is absent from the BSA.
California Tiger Salamander (*Ambystoma californiense*)	FT	Requires vernal pools for breeding and rodent burrows in annual grasslands for refuge.	**A.** Suitable breeding habitat for this species is absent from the region, including the BSA.
Blunt-Nosed Leopard Lizard (*Gambelia silus*)	FE, CE, CFP	Frequents grasslands, alkali meadows and chenopod scrub of the San Joaquin Valley from Merced County south to Kern County.	**A.** Protocol level BNLL surveys found no evidence of this species on the BSA.
Swainson's Hawk (*Buteo swainsoni*)	CT	Summer migrant in the Central Valley. Forages in grasslands and fields close to riparian areas. Prefers to nest in larger riparian trees with abundant foliage but known to nest in eucalyptus and other non-riparian trees.	**A.** This species was not observed during numerous field surveys of the site. Swainson's hawks have not been documented in the vicinity of the BSA. The nearest documented occurrence in Coalinga is from 1941 (CDFW 2017a). Habitat in Coalinga has long been rendered unsuitable due to the urban development. Suitable nesting habitat is absent from the BSA and foraging habitat is marginal due to the proximity of Lost Hills Avenue and shrubby vegetation.
California condor (*Gymnogyps californianus*)	FE, CE, CFP	Vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Nests in deep canyons that contain clefts in rocky walls.	**A.** Nesting habitat is absent from the BSA. No documented occurrences of California condor are known in the region.
Giant kangaroo rat (*Dipodomys ingens*)	FE, CE	Inhabits grasslands on gentle slopes generally less than 10°, with friable, sandy-loam soils within the west side of the southern San Joaquin Valley and adjacent coastal foothills.	**A**. Protocol level trapping surveys found this species absent from the BSA. Furthermore, there are no known populations of this species in the vicinity of the BSA. The nearest documented observations of this species occur approximately 25 miles to the northwest and 26 miles to the southeast of the BSA (CDFW 2017a).
San Joaquin Antelope Ground Squirrel (*Ammospermophilus nelsoni*)	CT	Occurs in the southwest portion of the valley in arid grassland and shrubland communities. Lives in burrows of its own construction or dug by kangaroo rats. Diurnal.	**A.** No evidence of this species was observed during approximately 24 field surveys of the site conducted in the spring and summer months during times of the day in which this species is most active.
San Joaquin Kit Fox (*Vulpes macrotis mutica*)	FE, CT	Frequents desert alkali scrub and annual grasslands and may forage in adjacent agricultural habitats. Utilizes enlarged (4 to 10 inches in diameter) ground squirrel burrows as denning habitat.	**HP.** Burrows of suitable size were not observed during numerous field surveys of the site. However, there have been 11 documented occurrences within ten miles of the site. Therefore, a kit fox may pass through the site during foraging or dispersal movements.

State Species Of Special Concern

Species	Status	Habitat	Occurrence in the BSA/Rationale
Western Spadefoot (*Scaphiopus hammondii*)	CSC	Primarily occurs in grasslands, but also occurs in valley and foothill hardwood woodlands. Requires vernal pools or other temporary wetlands for breeding.	**A.** There is no suitable breeding habitat on the BSA or surrounding lands.
Foothill Yellow-legged Frog (*Rana boylii*)	CSC	Frequents partly shaded, shallow streams and riffles with rocky substrate in a variety of habitats.	**A.** Suitable aquatic habitat for this species is absent from the BSA.
Western Pond Turtle (*Clemmys marmorata*)	CSC	An aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Needs basking sites and sandy banks or grassy open fields for egg laying.	**A.** Suitable aquatic habitat for this species is absent from the BSA.
California Horned Lizard (*Phrynosoma coronatum frontale*)	CSC	Grasslands, scrublands, oak woodlands, etc. of central California. Common in sandy washes with scattered shrubs.	**A.** Protocol level BNLL surveys found no evidence of this species on the BSA.
Silvery Legless Lizard (*Anniella pulchra pulchra*)	CSC	Occurs in loose sandy soils where overhanging plants, logs and rocks provide cover. There are sporadic occurrences on the floor of San Joaquin Valley.	**A.** Protocol level BNLL surveys found no evidence of this species on the BSA.
California Glossy Snake (*Arizona elegans occidentalis*)	CSC	This species occurs sporadically in a range of scrub and grassland habitats, often with loose sandy soils.	**P.** A 2000 and 2004 collection of this species has been documented as occurring at the location of the West Lost Hills Road crossing of Jacalitos Creek (CDFW 2017a).
San Joaquin Coachwhip (*Masticophis flagellum ruddocki*)	CSC	This species occurs in a variety of arid lowland environments in sandy soils of the San Joaquin Valley.	**A.** Protocol level BNLL surveys found no evidence of this species on the BSA. This diurnal snake is most active during the time of day in which the BNLL surveys were conducted.
Burrowing Owl (*Athene cunicularia*)	CSC	Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. This species is dependent upon burrowing mammals, most notably the California ground squirrel, for nest burrows.	**A.** Numerous surveys of the site found no evidence of burrowing owl occupation of the BSA and surrounding lands. Suitably sized burrows required by this species were absent from the BSA. The nearest documented occurrences of this species are approximately 5.0 miles to the north and northeast of the BSA (CDFW 2017a).
Long-eared Owl (*Asio otus*)	CSC	Frequents dense, riparian and live oak thickets near meadow edges and nearby woodland and forest habitats. Breeds from valley foothill hardwood up to ponderosa pine habitats.	**A.** Suitable habitats for this species are absent from the BSA.
Loggerhead Shrike (*Lanius ludovicianus*)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover.	**P.** This species was observed foraging on the BSA. The BSA contains marginal nesting habitat for this species.
Le Conte's Thrasher (*Toxostoma lecontei*)	CSC	Found in desert shrub and alkali scrub habitats.	**A.** There is only one documented occurrence of this species in Fresno County from 1934 (CDFW 2017a). This historic occurrence is far north of the current known range of the species. No evidence of this species was observed during numerous surveys on the BSA.
Tricolored Blackbird (*Agelaius tricolor*)	CSC	Breeds near fresh water, primarily emergent wetlands, with tall thickets. Forages in grassland and cropland habitats.	**A.** Breeding habitat is absent from the BSA and surrounding lands. Tricolored blackbird foraging habitat is marginal on the BSA. No evidence of this species was observed during numerous surveys on the BSA.

State Species Of Special Concern (con't)

Species	Status	Habitat	Occurrence in the BSA/Rationale
Short-Nosed Kangaroo Rat (*Dipodomys nitratoides brevinasus*)	CSC	Found mostly in chaparral and desert shrub communities.	**A.** Protocol level trapping surveys found this species absent from the BSA.
Tulare Grasshopper Mouse (*Onychomys torridus tularensis*)	CSC	Desert regions of the southern half of the state including parts of the San Joaquin Valley. Usually found in sandy areas or those with friable soils. Predatory on insects and small mice.	**A.** Protocol level trapping surveys found this species absent from the BSA. Furthermore, none have been documented in the immediate vicinity of the site.
Townsend's Western Big-Eared Bat (*Corynorhinus townsendii townsendii*)	CSC	Primarily a cave-dwelling bat that may also roost in buildings. Occurs in a variety of habitats.	**A.** This species may forage over the site, but roosting and breeding habitat are absent. Documented regional occurrences of this species are restricted to mountainous terrain. Bats observed roosting under the Jacalitos Creek Bridge throughout the spring and summer of 2015 and the summer of 2016 were identified as Mexican free-tailed bats. These bats occupied the only available cracks and crevices beneath the bridge.
Pallid Bat (*Antrozous pallidus*)	CSC	Roosts in rocky outcrops, cliffs, and crevices with access to open habitats for foraging. May also roost in caves, mines, hollow trees and buildings.	**A.** This species may forage over the site, but roosting and breeding habitat are absent. Documented regional occurrences of this species are restricted to mountainous terrain. Bats observed roosting under the Jacalitos Creek Bridge throughout the spring and summer of 2015 and the summer of 2016 were identified as Mexican free-tailed bats. These bats occupied the only available cracks and crevices beneath the bridge.
California Mastiff Bat (*Eumops perotis* ssp. *californicus*)	CSC	Frequents open, semi-arid to arid habitats, including conifer, and deciduous woodlands, coastal scrub, grasslands, palm oasis, chaparral and urban. Roosts in cliff faces, high buildings, trees and tunnels.	**A.** This species may forage over the site, but roosting and breeding habitat are absent. Bats found roosting under the Jacalitos Creek Bridge were identified as Mexican free-tailed bats.
American Badger (*Taxidea taxus*)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	**HP.** Twenty four surveys of the site found no evidence of American badger occupation of the BSA. Suitably sized burrows required by this species were absent from the BSA. However, there is a documented occurrence of this species approximately 4.0 miles downstream of the BSA (CDFW 2017a). Give the sizeable home range of male badgers; it is conceivable that a badger from outside the BSA may occur on the BSA prior to construction.

Absent [A] - No habitat present and no further work needed.

Habitat Present [HP] - Habitat is, or may be present. The species may be present.

Present [P] - Species is present

Critical Habitat [CH] - Project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

Status: - Federal Endangered (FE); Federal Threatened (FT); State Endangered (SE); State Threatened (ST); State Fully Protected (SFP); State Rare (SR); State Species of Special Concern (SSC); California Native Plant Society (CNPS)

Chapter 4 – Results: Biological Resources, Discussion of Impacts and Mitigation

4.1 Habitats and Natural Communities of Special Concern

One natural community of special concern, Great Valley Mesquite Scrub, has been documented on lands within the nine USGS 7.5-minute quadrangles most proximate to the BSA. However, this community is absent from the BSA and immediately surrounding lands. The Jacalitos Creek channel contains areas within the jurisdiction of the USACE, RWQCB, and CDFW. A table summarizing Project impacts on jurisdictional waters is presented below (see Table 1). Jurisdictional water issues are addressed in further detail below.

4.1.1 USACE AND RWQCB JURISDICTIONAL AREA

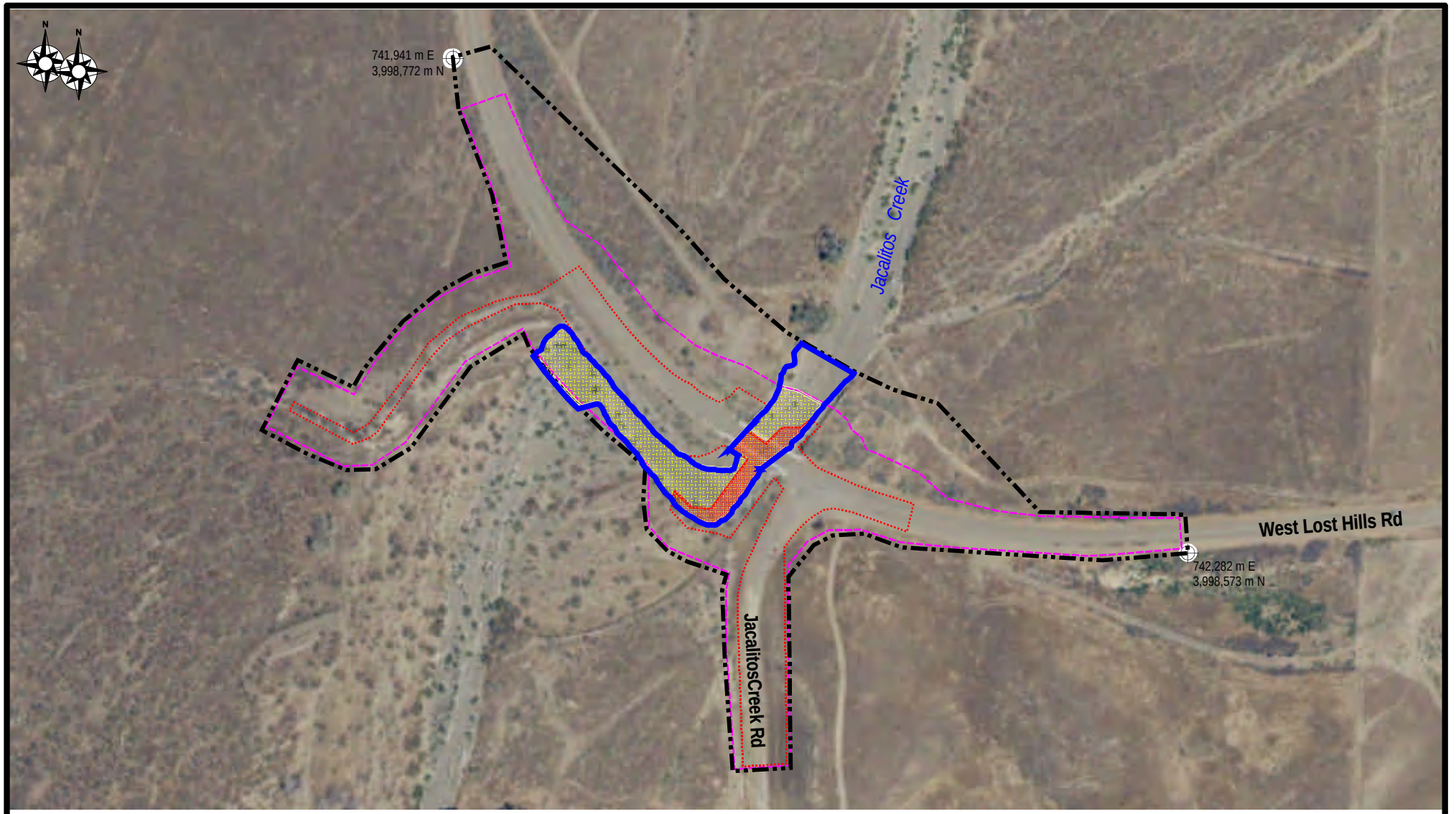
A jurisdictional waters investigation conducted by LOA during the summer of 2015 found that the BSA contains one jurisdictional water feature, Jacalitos Creek. The biotic characteristics of this area are described in detail in Chapter 3 of this document. The areas within the channel below ordinary high water (OHW) would fall under the jurisdiction of the USACE and RWCQB.

4.1.1.1 Survey Results

The limits of jurisdiction were delineated to the extent of OHW, which was determined by the presence of water marks, benching, and vegetation. Wetland areas were determined absent from the creek channel and elsewhere within the BSA. The total area of waters of the U.S./State within the BSA is 0.80 acres (see Figure 6).

4.1.1.2 Project Impacts

Approximately 0.15 acres of permanent impact and 0.51 acres of temporary impact to waters of the U.S./State will result from Project construction (Figure 6). This small area of impact is expected to include a very small amount of vegetation removal and the placement of fill consisting of rock slope protection. Riparian vegetation is absent from the BSA; therefore there will be no loss of riparian vegetation.



LEGEND

Potential Jurisdictional Waters

OHW of Intermittent Tributary Water (34,983 SF / 0.8 Ac.)

Other Features

APE Boundary (Approx. 8.02 Ac.)

Impact Areas

Temporary Impact Boundary (242,472 SF / 5.57 Ac.)

Permanent Impact Boundary (80,998 SF / 1.86 Ac.)

Impacts to Potential Jurisdictional Waters

Temporary Impact (29,327 SF / 0.67 Ac.)

Permanent Impact (7,275 SF / 0.17 Ac.)

500' 0 500 feet

Approximate Scale
1' = 200'

Source:
Aerial Photograph Courtesy of USDA-FSA Aerial Photography Field Office, 11/4/2014
Universal Transverse Mercator Coordinate System Zone 10, NAD83 / NAVD 1988

Live Oak Associates, Inc.

Jacalitos Creek Bridge Replacement on Lost Hills Ave.
Waters of the U.S. Impacts

Date	Project #	Figure #
6/16/2017	1955-01	6

4.1.1.3 Avoidance and Minimization Efforts

The Project will improve water quality through prevention of scouring from flood events through the bolstering of rock slope protection.

The County will attain a Nationwide Permit from the USACE and comply with all conditions of this permit.

4.1.1.4 Compensatory Mitigation

If required, the County will pay in-lieu fees to the USACE in-lieu fee fund as a condition of their Nationwide Permit and fees associated with their Water Quality Certification.

4.1.1.5 Cumulative Impacts

Permanent impacts of 0.15 acres of waters of the U.S. are sufficiently small as to have an insignificant contribution to cumulative impacts to local waters of the U.S.

4.1.2 CDFW 1602 JURISDICTIONAL AREA

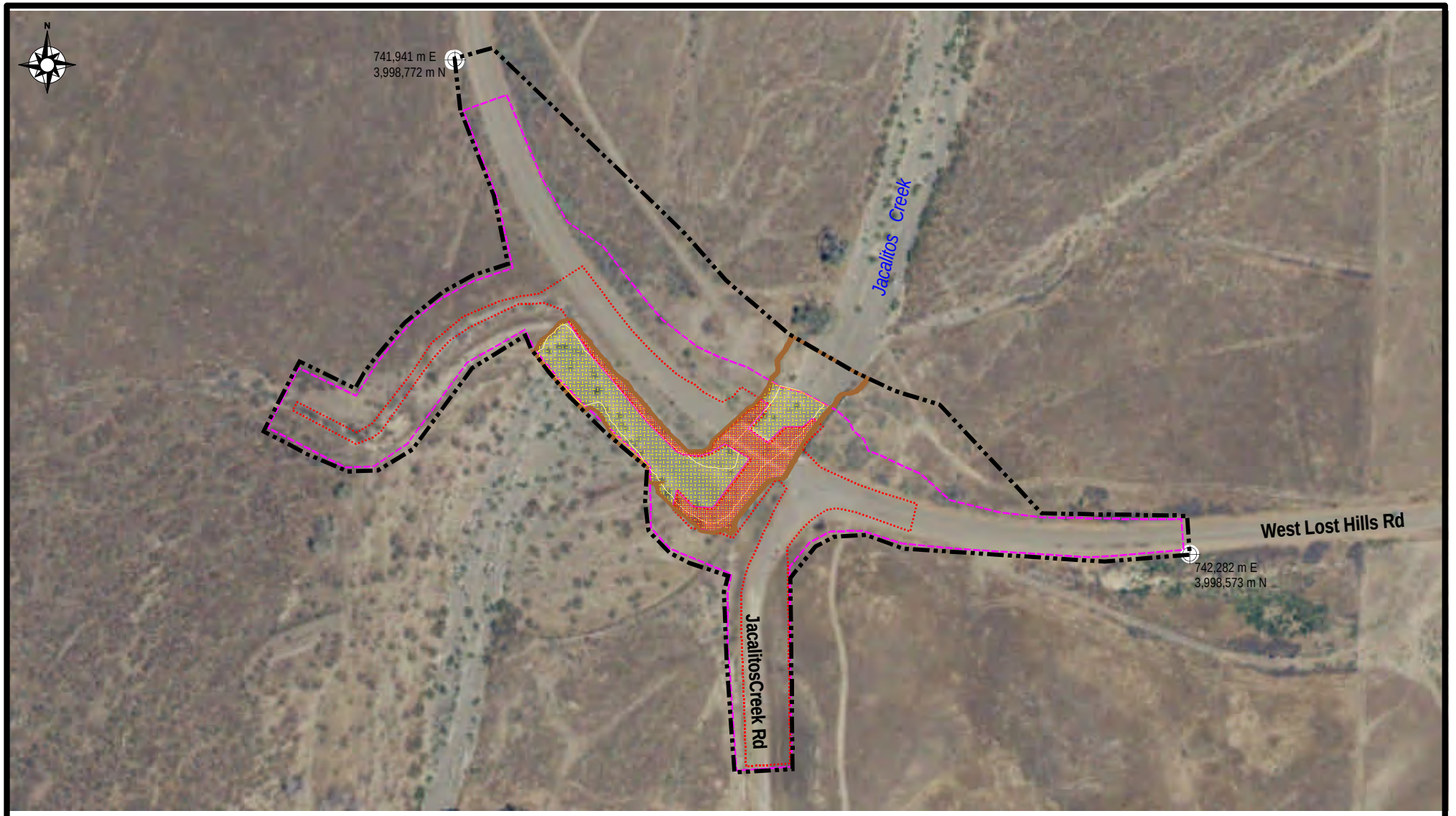
A jurisdictional waters investigation conducted by LOA during the summer of 2015 found that the BSA contains one CDFW 1602 jurisdictional water feature, Jacalitos Creek. The biotic characteristics of this area are described in detail in Chapter 3 of this document. The areas within the channel below the top of bank (TOB) would fall under CDFW jurisdiction.

4.1.2.1 Survey Results

The limits of jurisdiction were delineated to the extent of the TOB of the flood plain of the creek channel, which was determined by the presence of benching. The total area of CDFW 1602 jurisdiction within the BSA is 1.17 acres (see Figure 7).

4.1.2.2 Project Impacts

Approximately 0.35 acres of permanent impact and 0.60 acres of temporary impact to CDFW 1602 jurisdiction will result from Project construction (Figure 7). This small area of impact is expected to include a very small amount of vegetation removal, and the placement of fill consisting of rock slope protection.



LEGEND

Potential Jurisdictional Waters

TOB of Jacalitos Creek (50,861 SF / 1.17 Ac.)

Other Features

APE Boundary (Approx. 8.02 Ac.)

Impact Areas

Temporary Impact Boundary (242,472 SF / 5.57 Ac.)

Permanent Impact Boundary (80,998 SF / 1.86 Ac.)

Impacts to Potential Jurisdictional Waters at TOB

Temporary Impact (42,628 SF / 0.98 Ac.)

Permanent Impact (15,749 SF / 0.36 Ac.)

500' 0 500 feet

Approximate Scale
1' = 200'

Source:
Aerial Photograph Courtesy of USDA-FSA Aerial Photography Field Office, 9/29/2016
Universal Transverse Mercator Coordinate System Zone 10, NAD83 / NAVD 1988

Live Oak Associates, Inc.

Jacalitos Creek Bridge Replacement on Lost Hills Ave.
CDFW Waters Impacts

Date	Project #	Figure #
6/16/2017	1955-01	7

4.1.2.3 Avoidance and Minimization Efforts

The County will obtain a Stream Alteration Agreement from CDFW and comply with all conditions of this agreement, including a revegetation plan.

4.1.2.4 Compensatory Mitigation

Permanent impacts are sufficiently small such that compensatory mitigation is not required.

4.1.2.5 Cumulative Impacts

Permanent impacts of 0.35 acres of CDFW jurisdictional waters are sufficiently small as to have an insignificant contribution to cumulative impacts to local CDFW jurisdictional waters.

4.2 Special Status Plant Species

A total of 14 special-status plant species were identified as potentially occurring in the vicinity of the BSA (Table 1; Appendix G and H). Based on the lack of suitable habitat (i.e., vernal pools; clay, sandstone, or shale soils; chaparral; and cismontane woodland) only 7 of the 14 special-status plant species listed in Table 1 could potentially occur within the BSA; these species are the state and federally endangered California jewelflower, the federally endangered San Joaquin woollythreads, and 5 listed CNPS 1B plant species, Lemmon's jewelflower, Hall's tarplant, recurved larkspur, pale-yellow layia, and showy madia. None of these species were observed during 2016 protocol level botanical surveys conducted during the species' bloom periods, when they would have been most identifiable.

Since protocol level botanical surveys found special status plant species absent from the BSA, the Project will have no effect on special status plant species.

4.3 Special Status Animal Species Occurrences

A total of 27 special-status animal species were identified as potentially occurring in the vicinity of the BSA (Table 1; Appendix F and G). Based on the lack of suitable habitat, the absence of these species determined through surveys conducted on the BSA, and/or significant distance between the BSA and known populations, only four (4) of the 27 special-status animal species listed in Table 1 could potentially occur within the BSA;

these species are the California glossy snake (*Arizona elegans occidentalis*), loggerhead shrike (*Lanius ludovicianus*), American badger, and San Joaquin kit fox. An analysis of potential Project impacts and avoidance and minimization measures for each of these species follows.

4.3.1 CALIFORNIA GLOSSY SNAKE

The California glossy snake is a member of the Colubridae family that sporadically inhabits arid scrub, rocky washes, grasslands, and chaparral from the eastern part of the San Francisco Bay Area south to northwestern Baja California, excluding California's central coast. There are also old reports of this snake from the Santa Monica Mountains. These nocturnal snakes prey primarily on sleeping diurnal lizards. They spend daylight hours in underground burrows.

4.3.1.1 Survey Results

Nocturnal surveys required to detect this species were not conducted.

4.3.1.2 Project Impacts

A large area of permanent impacts from the Project will occur in areas consisting of existing paved roads and maintained road shoulders. These areas provide little to no habitat for the California glossy snake. Furthermore, daytime movements of equipment and vehicles are expected to have little to no impact on this nocturnal species that spends daylight hours in underground burrows. Temporary impact areas are expected to revert to a naturalized state and quickly provide the same quality of habitat as before construction. Areas slated for the placement of additional rock-slope protection will provide expanded areas of daytime refugia for this snake. As a result, the amount of available habitat for this species will remain nearly the same after Project completion. While Project buildout would not result in a significant loss of habitat, impacts from ground disturbance activities such as grading, excavation, and movement of existing rock-slope protection could result in harm to individual glossy snakes. Due to the small area of ground disturbance activities in potentially suitable glossy snake habitat, Project impacts are not expected to significantly impact local populations of this species from either habitat loss or direct injury/mortality.

4.3.1.3 Avoidance and Minimization Efforts

Pre-construction Surveys. Pre-construction nocturnal surveys shall be conducted by a qualified biologist 24hrs prior to the beginning of ground disturbance, construction activities, and/or any Project activity likely to impact the California glossy snake. The primary objective of the survey is to capture and relocate any California glossy snakes encountered.

Relocation. All glossy snakes encountered will be captured (to the extent feasible), placed in a ventilated container that is sufficiently sealed to prevent escape, and relocated approximately 3.0 miles northeast to the Jacalitos Creek floodplain immediately north of Jayne Avenue (a location where this species has been previously observed and habitat conditions are similar to those at the project site).

4.3.1.4 Compensatory Mitigation

Since the Project will result in only temporary and minor potential impacts to this species and its habitat, no compensatory mitigation is warranted.

4.3.1.5 Cumulative Impacts

Since the Project will result in only temporary and minor potential impacts to this species and its habitat, cumulative impacts are absent.

4.3.2 LOGGERHEAD SHRIKE

The loggerhead shrike is a medium sized North American passerine bird and a resident bird in the region of the BSA. In California this species is generally found in arid open habitats. The loggerhead shrike nests in shrubs and trees. Loggerhead shrike populations have been decreasing in North America since the 1960s. This species is considered a species of special concern by the CDFW, and is protected under the federal Migratory Bird Treaty Act.

4.3.2.1 Survey Results

This species was incidentally observed foraging on and adjacent to the BSA during BNLL surveys conducted on the site. Nesting status on the site is unknown.

4.3.2.2 Project Impacts

Permanent impacts from the Project will occur almost exclusively in ruderal areas consisting of existing paved roads, maintained road shoulders, and areas of existing rock-

slope protection. As a result, the amount of available foraging habitat for this species will remain nearly the same after Project completion. Permanent impact areas of the site provide no suitable nesting habitat due to the lack of well-developed shrubs and trees. Temporary impact areas contain unlikely nesting habitat due to the small size of existing shrubs and the absence of trees. In the unlikely event that loggerhead shrikes were to nest on the site, the Project could result in direct impacts to eggs or nestlings. The Project may also temporarily alter the foraging patterns of local loggerhead shrikes. Many square miles of suitable foraging and nesting habitat will remain available during and after the Project. Therefore the Project would result in no significant loss of habitat, both permanently and temporarily.

4.3.2.3 Avoidance and Minimization Efforts

Avoidance. In order to avoid impacts to loggerhead shrikes, initial ground disturbance activities such as grading, scraping, material stockpiling, etc. will be initiated between September 1 and January 31. This will ensure that Project activities potentially impacting nesting shrikes will not coincide with their nesting season (February 1 to August 31).

Pre-construction Surveys. If ground disturbance must be initiated between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active shrike nests within 15 days of the onset of these activities.

Establish Buffers. Should any active shrike nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.

4.3.2.4 Compensatory Mitigation

Since the Project will result in no significant loss of foraging or nesting habitat, no compensatory mitigation is warranted.

4.3.2.5 Cumulative Impacts

Since the Project will result in only a temporary potential impact on this species and its habitat, cumulative impacts are absent.

4.3.3 AMERICAN BADGER

The American badger is a burrowing member of the mink family that resides in grasslands, savannahs and prairies throughout much of the western United States.

Badgers prey primarily on small mammals including ground squirrels, pocket gophers, and mice, which they capture by digging out the animals' burrows. Adult badgers are primarily nocturnal, foraging at night and remaining underground in sleeping dens during the day. Badgers may reuse sleeping dens, or dig a new sleeping den each day. Both sleeping dens and natal dens are dug in dry, friable soils with sparse overstory cover. While badgers rarely remain in a sleeping den for more than a day, natal dens may be used for a period of 4-8 weeks as the female gives birth to and raises her young. Badgers mate in late summer to early fall, and the young are born in natal dens in March and April. Male badgers can maintain a home range of up to 1,500 acres.

4.3.3.1 Survey Results

Various transect surveys of the BSA found no habitat features suitable for denning by this species. Foraging habitat occurs across the BSA outside of ruderal areas. The nearest known occurrence of this species was documented approximately 4.0 miles to the northeast in 2005.

4.3.3.2 Project Impacts

Permanent impacts from the Project will occur almost exclusively in ruderal areas consisting of existing paved roads, maintained road shoulders, and areas of existing rock-slope protection. Ruderal areas provide unsuitable habitat for this species. As a result, the amount of available habitat for this species will remain nearly the same after Project completion. While Project buildout would not result in a significant loss of habitat, temporary impacts from ground disturbance and construction activities could result in harm to individual badgers should they take up residence on the BSA prior to construction or pass through the BSA during construction. Project impacts are not expected to significantly impact local populations of this species from either habitat loss or direct injury/mortality.

4.3.3.3 Avoidance and Minimization Efforts

> ***Pre-construction Surveys.*** Pre-construction surveys shall be conducted 30 days prior to the beginning of ground disturbance, construction activities, and/or any Project activity likely to impact the American Badger. The primary objective is to identify badger habitat features (e.g. potential dens and refugia) on the study area and evaluate their use by badgers.

Avoidance. Should an active badger den be detected within or immediately adjacent to the area of work, a disturbance-free buffer will be established around the den until a qualified biologist has determined that the den is vacated or until the animal has been humanely evicted by a qualified biologist and the den collapsed. Should an active natal den be identified during the preconstruction surveys, a suitable disturbance-free buffer will be established around the den and maintained until a qualified biologist has determined that the cubs have dispersed or the den has been abandoned..

4.3.3.4 Compensatory Mitigation

Since the Project will result in only temporary and minor potential impacts to this species and its habitat, no compensatory mitigation is warranted.

4.3.3.5 Cumulative Impacts

Since the Project will result in only temporary and minor potential impacts to this species and its habitat, cumulative impacts are absent.

4.3.4 SAN JOAQUIN KIT FOX

The San Joaquin kit fox (SJKF), a subspecies of the kit fox, is a small canid endemic to California. It occurs in arid shrubland and grassland areas of the Central Valley. This species usually spends daylight hours in underground burrows and, sometimes, artificial ground structures. SJKF are primarily active at night, when they prey upon a variety of small vertebrates and arthropods, and at times vegetation. This species is listed as Endangered under the federal Endangered Species Act and Threatened under the California Endangered Species Act.

4.3.4.1 Survey Results

Various transect surveys of the BSA found no habitat features suitable for denning by this species. Foraging habitat occurs across the BSA outside of ruderal areas. The nearest known occurrence of this species was documented approximately 2.0 miles to the southwest in 1980.

4.3.4.2 Project Impacts

Permanent impacts from the Project will occur almost exclusively in ruderal areas consisting of existing paved roads, maintained road shoulders, and areas of existing rock-slope protection. Ruderal areas provide unsuitable habitat for this species. As a result,

the amount of available habitat for this species will remain nearly the same after Project completion. While Project buildout would not result in a significant loss of habitat, temporary impacts from ground disturbance and construction activities could result in harm to individual SJKF should they take up residence on the BSA prior to construction or pass through the BSA during construction. Project impacts are not expected to significantly impact local populations of this species from either habitat loss or direct injury/mortality.

4.3.4.3 Avoidance and Minimization Efforts

Pre-construction Surveys. Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance, construction activities, and/or any Project activity likely to impact the San Joaquin kit fox. These surveys will be conducted in accordance with the USFWS 2011 *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (see Appendix I). The primary objective is to identify kit fox habitat features (e.g. potential dens and refugia) on the study area and evaluate their use by kit foxes through use of remote monitoring techniques such as motion-triggered cameras and tracking medium. If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS and CDFW shall be contacted immediately.

Avoidance. Should an active kit fox den be detected within or immediately adjacent to the area of work, a disturbance-free buffer will be established around the den in consultation with the USFWS and CDFW, to be maintained until a qualified biologist has determined that the den is no longer occupied. Known kit fox dens may not be destroyed until they have been vacant for a period of at least three days, as demonstrated by use of motion-triggered cameras or tracking medium, and then only after obtaining take authorization from the USFWS.

Minimization. Construction activities shall be carried out in a manner that minimizes disturbance to kit foxes. Minimization measures include, but are not limited to: restriction of Project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g., pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash.

Employee Education Program. Prior to the start of construction, the County will retain a qualified biologist to conduct a tailgate meeting that will include a hand out with all of the training information included in it or conduct a Power Point presentation prepared by a qualified biologist to train all construction staff that will be involved with the Project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the Project area; an explanation of the status of the species and its

protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during Project construction and implementation. The Project manager will use prepared training material to train any additional construction staff that were not in attendance at the first meeting, prior to starting work on the Project.

***Mortality Reporting*.** In case of the accidental death or injury of a San Joaquin kit fox during Project-related activities, the County will contact Caltrans and Caltrans will notify The Sacramento Field Office of the USFWS. The County will notify the CDFW, directly. All notifications will be submitted in writing within three working days of incident. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

4.3.4.4 Compensatory Mitigation

Since the Project will result in only temporary and minor potential impacts to this species and its habitat, no compensatory mitigation is warranted.

4.3.4.5 Cumulative Impacts

Since the Project will result in only temporary and minor potential impacts to this species and its habitat, cumulative impacts are absent.

Chapter 5 – Conclusions and Regulatory Determinations

5.1 Federal Endangered Species Act Consultation Summary

Federal Endangered Species Act Consultation with the USFWS or NOAA's National Marine Fisheries Service has not occurred.

5.2 Essential Fish Habitat Consultation Summary

Essential Fish Habitat is absent from the BSA. Essential Fish Habitat consultation with the NOAA Fisheries is not warranted.

5.3 California Endangered Species Act Consultation Summary

California Endangered Species Act Consultation with CDFW has not occurred.

5.4 Wetlands and Other Waters Coordination Summary

A wetland delineation report and map was prepared by LOA and submitted to Caltrans biologist Elmer Llamas. Mr. Llamas submitted the report and map to the USACE for verification. No other wetlands or waters coordination has occurred.

5.5 Invasive Species

Bridge construction and road improvements would occur along the existing road right of ways within a disturbed corridor. Flood control measures including the placement of additional rock slope protection would occur in areas currently containing rock slope protection. The BSA currently supports non-native invasive plants. Implementation of the proposed Project is not expected to result in the introduction, establishment, and spread of new invasive weeds into Fresno County**.** Therefore, no coordination with the Fresno County Agricultural Commissioner's office is required.

5.6 Other

5.6.1 MIGRATORY BIRDS

Most birds are protected under the FMBTA and Fish and Game Code. Activities that cause nest abandonment or mortality of FMBTA-protected birds would be a violation of the FMBTA and related state laws.

5.6.1.1 Survey Results

Several species of birds protected under the Migratory Bird Treaty Act have been documented nesting within the BSA over the course of the field survey effort; these comprise the common raven (*Corvus corax*), cliff swallow (*Petrochelidon pyrrhonota*), lesser nighthawk (*Chordeiles acutipennis*), and mourning dove (*Zenaida macroura*).

5.6.1.2 Project Impacts

If construction occurs during the nesting season, birds nesting on the site could be injured or killed by construction activities, while birds nesting adjacent to the site could be disturbed such that they would abandon their nests.

5.6.1.3 Avoidance and Minimization Efforts

Avoidance. In order to avoid impacts to all nesting migratory birds, initial ground disturbance activities such as grading, scraping, material stockpiling, etc. will be initiated between September 1 and January 31. This will ensure that Project activities potentially impacting nesting birds will not coincide with the nesting season (February 1 to August 31).

Pre-construction Surveys. If ground disturbance must be initiated between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 15 days of the onset of these activities.

Establish Buffers. Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.

5.6.2 BATS

All bats are protected under Fish and Game Code.

5.6.2.1 Survey Results

Spring and summer surveys of the site have repeatedly identified approximately 20 Mexican free-tailed bats roosting during the day under the existing onsite bridge. The bats were found in the gaps between wooden beams and blocks at the north end of the bridge. These bats were photographed and identified by the size and shape of their ears and the presence of a free tail (see Appendix E for photographs).

5.6.2.2 Project Impacts

Activities that cause the mortality of bats could be a violation of state law. If construction occurs during the maternal roosting season (April through August) or during winter hibernation periods, juvenile bats or torpid bats roosting on the site could be injured or killed by construction activities. Mexican free-tailed bats are a common bat species with a large range in the southern half of North America. Bats are expected to experience a temporary or permanent loss of roosting habitat, pending final bridge design.

5.6.2.3 Avoidance and Minimization Efforts

***Pre-construction Surveys*.** Within 30 days of the onset of bridge removal activities a qualified biologist will conduct pre-construction surveys for active bat roosts.

***Eviction*.** Should an active bat roost be discovered, a qualified biologist or bat removal professional will install appropriate exclusion devices and monitor the success of the eviction procedure to ensure all bats have been evicted prior to construction.

Chapter 6 – References

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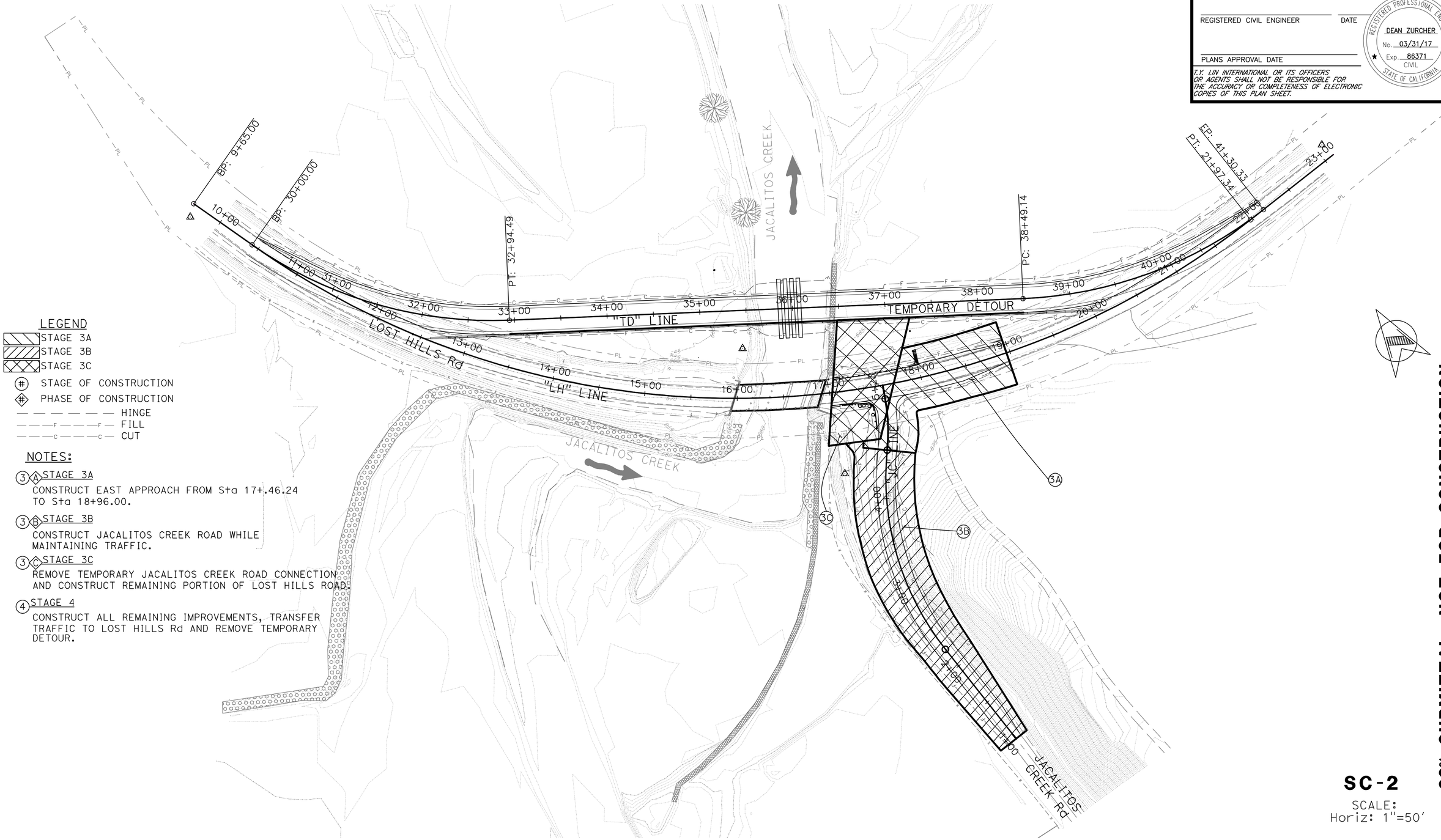
Appendix A – Conceptual Project Design

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
DEAN ZURCHER
No. 03/31/17
Exp. 86371
CIVIL
STATE OF CALIFORNIA

T.Y. LIN INTERNATIONAL OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



NOTES:

(3)(A) STAGE 3A
CONSTRUCT EAST APPROACH FROM Sta 17+.46.24 TO Sta 18+96.00.

(3)(B) STAGE 3B
CONSTRUCT JACALITOS CREEK ROAD WHILE MAINTAINING TRAFFIC.

(3)(C) STAGE 3C
REMOVE TEMPORARY JACALITOS CREEK ROAD CONNECTION AND CONSTRUCT REMAINING PORTION OF LOST HILLS ROAD.

(4) STAGE 4
CONSTRUCT ALL REMAINING IMPROVEMENTS, TRANSFER TRAFFIC TO LOST HILLS Rd AND REMOVE TEMPORARY DETOUR.

30% SUBMITTAL, NOT FOR CONSTRUCTION

SC-2

SCALE:
Horiz: 1"=50'

T.Y.LIN INTERNATIONAL	DATE	RECORD DRAWING	
DESIGNED: DEAN ZURCHER	####	RESIDENT ENGINEER	DATE
DRAWN: JEFFREY HOGE	####		
CHECKED: TIM CLIFFORD	####		
FOR RIGHT OF WAY DATA AND ACCURATE ACCESS DETERMINATION, SEE DOCUMENTS IN THE DEPARTMENT OF PUBLIC WORKS AND PLANNING.			

SCALE
PLAN
0 1" 2"

30% PLANS NOT FOR CONSTRUCTION
SUPERVISING ENGINEER DATE

PROJECT
JACALITOS CREEK BRIDGE REPLACEMENT PROJECT
ON LOST HILLS ROAD
ROAD NO. #### BRIDGE NO. XXXXXX

THE COUNTY OF FRESNO

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STAGE CONSTRUCTION PLAN
DRAWING NO. SC-1 SHEET NO. - TOTAL

XRef List: | 088 Border | ACAD-088 X-TP | 088 X-Land | 054-BRDR | 088-C-RD-Temporary Detour | 088-C-RD | DWG Name: I:\Sacramento\Projects\710088.10\600_CADD\30_Working\SHEETS\088 SC-2.dwg Updated By: jhoge
Mar. 14, 2017 - 15:48:40

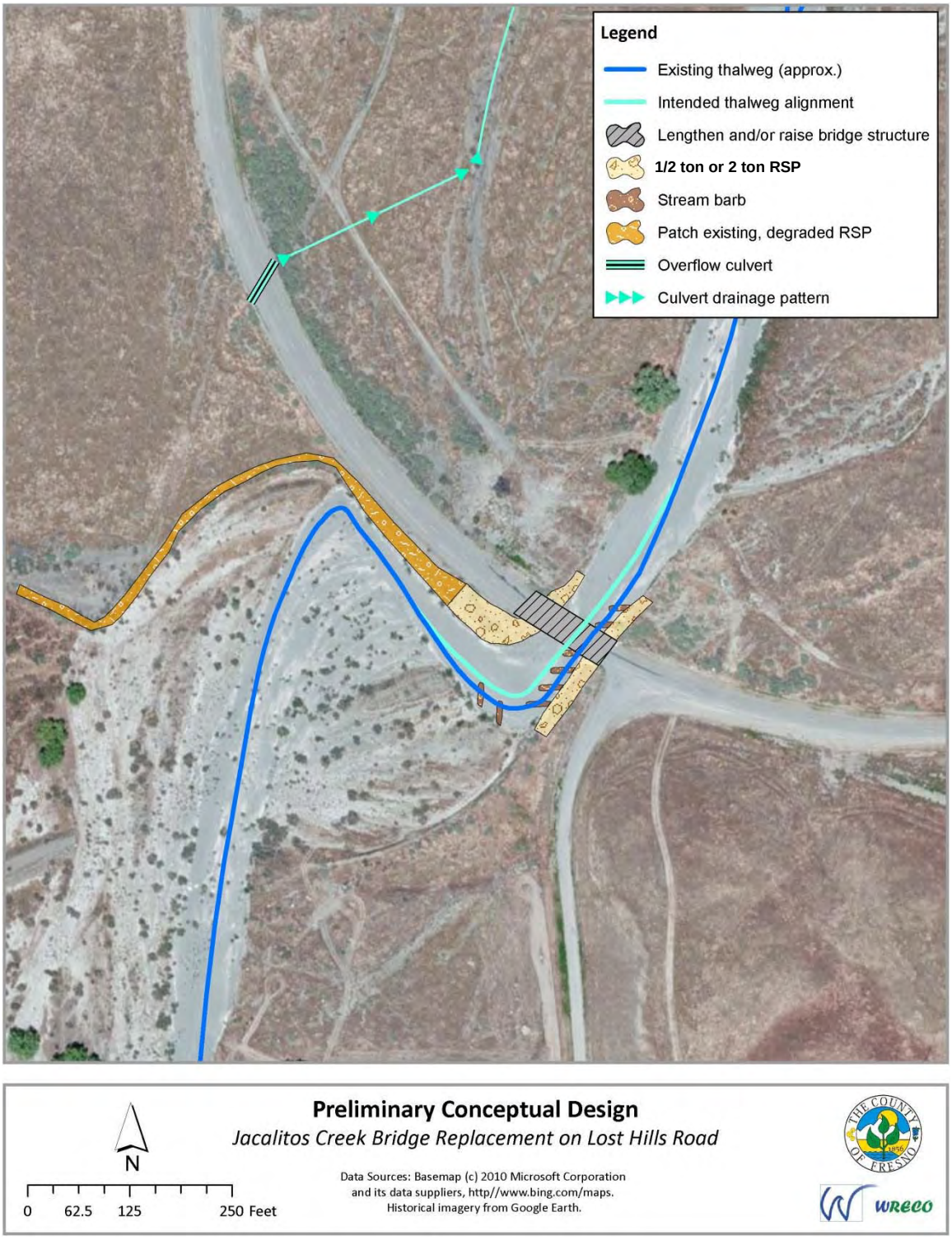


Figure 14. Conceptual Erosion Countermeasure Layout

Appendix B – Terrestrial Vertebrate List

TERRESTRIAL VERTEBRATES THAT POTENTIALLY OCCUR ON THE BSA

The species listed below are those that may reasonably be expected to use the habitats of the study area routinely or occasionally. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the study area during LOA field surveys have been noted with an asterisk.

CLASS: REPTILIA (Reptiles)
ORDER: SQUAMATA (Lizards and Snakes)
SUBORDER: SAURIA (Lizards)
FAMILY: PHRYNOSOMATIDAE
*Desert Spiny Lizard (*Sceloporus magister*)
*Side-blotched Lizard (*Uta stansburiana*)
FAMILY: TEIIDAE (Whiptails and relatives)
*Western Whiptail (*Cnemidophorus tigris*)
SUBORDER: SERPENTES (Snakes)
FAMILY: COLUBRIDAE (Colubrids)
Glossy Snake (*Arizona elegans*)
Gopher Snake (*Pituophis melanoleucus*)
Common Kingsnake (*Lampropeltis getulus*)
Long-nosed Snake (*Rhinocheilus lecontei*)
FAMILY: VIPERIDAE (Vipers)
Western Rattlesnake (*Crotalus viridis*)

CLASS: AVES (Birds)
FAMILY: CATHARTIDAE (American Vultures)
*Turkey Vulture (*Cathartes aura*)
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)
FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)
Northern Harrier (*Circus cyaneus*)
*Red-tailed Hawk (*Buteo jamaicensis*)
Ferruginous Hawk (*Buteo regalis*)
Rough-legged Hawk (*Buteo lagopus*)
Sharp-Shinned Hawk (*Accipiter striatus*)
Cooper's Hawk (*Accipiter cooperii*)
FAMILY: FALCONIDAE (Caracaras and Falcons)
*American Kestrel (*Falco sparverius*)
Merlin (*Falco columbarius*)
Prairie Falcon (*Falco mexicanus*)
ORDER: GALLIFORMES (Megapodes, Currassows, Pheasants, and Relatives)
FAMILY: ODONTOPHORIDAE (New World Quails)
*California Quail (*Callipepla californica*)
ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)
FAMILY: CHARADRIIDAE (Plovers and relatives)
***Killdeer (*Charadrius vociferus*)
ORDER: COLUMBIFORMES (Pigeons and Doves)

FAMILY: COLUMBIDAE (Pigeons and Doves)
*Eurasian Collared Dove (*Streptopelia decaocto*)
*Mourning Dove (*Zenaida macroura*)
ORDER: CUCULIFORMES (Cuckoos and Relatives)
FAMILY: CUCULIDAE (Typical Cuckoos)
*Greater Roadrunner (*Geococcyx californianus*)
ORDER: STRIGIFORMES (Owls)
FAMILY: TYTONIDAE (Barn Owls)
Common Barn Owl (*Tyto alba*)
FAMILY: STRIGIDAE (Typical Owls)
*Great Horned Owl (*Bubo virginianus*)
Western Screech Owl (*Otus kennicottii*)
ORDER: CAPRIMULGIFORMES (Goatsuckers and relatives)
FAMILY: CAPRIMULGIDAE (Goatsuckers)
*Lesser Nighthawk (*Chordeiles acutipennis*)
ORDER: APODIFORMES (Swifts and Hummingbirds)
FAMILY: TROCHILIDAE (Hummingbirds)
Black-chinned Hummingbird (*Archilochus alexandri*)
*Anna's Hummingbird (*Calypte anna*)
Rufous Hummingbird (*Selasphorus rufus*)
ORDER: PICIFORMES (Woodpeckers and relatives)
FAMILY: PICIDAE (Woodpecker and Wrynecks)
Northern Flicker (*Colaptes chrysoides*)
Nuttall's Woodpecker (*Picoides nuttallii*)
ORDER: PASSERIFORMES (Perching Birds)
FAMILY: TYRANNIDAE (Tyrant Flycatchers)
*Black Phoebe (*Sayornis nigricans*)
*Say's Phoebe (*Sayornis saya*)
*Ash-Throated Flycatcher (*Myiarchus cinerascens*)
*Western Kingbird (*Tyrannus verticalis*)
FAMILY: LANIIDAE (Shrikes)
*Loggerhead Shrike (*Lanius ludovicianus*)
FAMILY: CORVIDAE (Jays, Magpies, and Crows)
American Crow (*Corvus brachyrhynchos*)
*Common Raven (*Corvus corax*)
FAMILY: ALAUDIDAE (Larks)
*****Horned Lark (*Eremophila alpestris*)
FAMILY: HIRUNDINIDAE (Swallows)
Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)
*Cliff Swallow (*Hirundo pyrrhonota*)
*Barn Swallow (*Hirundo rustica*)
FAMILY: TROGLODYTIDAE (Wrens)
House Wren (*Troglodytes aedon*)
Rock Wren (*Salpinctes obsoletus*)
Bewick's Wren (*Thryomanes bewickii*)
FAMILY: REGULIDAE (Kinglets)
Ruby-crowned Kinglet (*Regulus calendula*)
FAMILY: TURDIDAE

Western Bluebird (*Sialia mexicana*)
American Robin (*Turdus migratorius*)

FAMILY: MIMIDAE (Mockingbirds and Thrashers)

*Sage Thrasher (Oreoscoptes montanus)
*Northern Mockingbird (*Mimus polyglottos*)

FAMILY: STURNIDAE (Starlings)

European Starling (*Sturnus vulgaris*)

FAMILY: MOTACILLIDAE (Wagtails and Pipits)

American Pipit (*Anthus rubescens*)

FAMILY: PARULIDAE (Wood Warblers and Relatives)

Orange-crowned Warbler (*Vermivora celata*)
*Yellow-rumped Warbler (*Dendroica coronata*)

FAMILY: EMBERIZIDAE (Wood Warblers, Sparrows, Blackbirds, and relatives)

*Lark Sparrow (*Chondestes grammacus*)
*Savannah Sparrow (*Passerculus sandwichensis*)
Golden-crowned Sparrow (*Zonotrichia atricapilla*)
*White-crowned Sparrow (*Zonotrichia leucophrys*)

FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)

Red-winged Blackbird (*Agelaius phoeniceus*)
*Western Meadowlark (*Sturnella neglecta*)
*Brewer's Blackbird (*Euphagus cyanocephalus*)
Brown-headed Cowbird (*Molothrus ater*)
*Bullock's Oriole (*Icterus bullocki*)

FAMILY: FRINGILLIDAE (Finches)

*House Finch (*Carpodacus mexicanus*)
Lesser Goldfinch (*Carduelis psaltria*)

FAMILY: PASSERIDAE (Old World Sparrows)

House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA (Mammals)

ORDER: DIDELPHIMORPHIA (Marsupials)

FAMILY: DIDELPHIDAE (Opossums)

Virginia Opossum (*Didelphis virginiana*)

ORDER: INSECTIVORA (Insectivores)

Ornate Shrew (*Sorex ornatus*)

ORDER: CHIROPTERA (Bats)

FAMILY: VESPERTILIONIDAE (Evening Bats)

Yuma Myotis (*Myotis yumanensis*)
California Myotis (*Myotis californicus*)
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
Western Red Bat (*Lasiurus borealis*)

FAMILY: MOLOSSIDAE (Free-tailed Bat)

*Mexican Free-tailed Bat (*Tadarida brasiliensis*)

ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)

FAMILY: LEPORIDAE (Rabbits and Hares)

Desert Cottontail (*Sylvilagus audubonii*)

*Black-tailed (Hare) Jackrabbit (*Lepus californicus*)

ORDER: RODENTIA (Rodents)

FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)

California Ground Squirrel (*Spermophilus beecheyi*)

FAMILY: GEOMYIDAE (Pocket Gophers)

Botta's Pocket Gopher (*Thomomys bottae*)

FAMILY: HETEROMYIDAE (Pocket Mice and Kangaroo Rats)

*****California Pocket Mouse (*Chaetodipus californicus*)

*****San Joaquin Pocket Mouse (*Perognathus inornatus*)

*Heermann's Kangaroo Rat (*Dipodomys heermani*)

FAMILY: MURIDAE (Old World Rats and Mice)

*Deer Mouse (*Peromyscus maniculatus*)

ORDER: CARNIVORA (Carnivores)

FAMILY: CANIDAE (Foxes, Wolves, and relatives)

Coyote (*Canis latrans*)

Gray Fox (*Urocyon cinereoargenteus*)

San Joaquin Kit Fox (*Vulpes macrotis mutica*)

FAMILY: PROCYONIDAE (Raccoons and relatives)

Raccoon (*Procyon lotor*)

FAMILY: MUSTELIDAE (Weasels, Badgers, and relatives)

Badger (*Taxidea taxus*)

FAMILY: MEPHITIDAE (Skunks)

Striped Skunk (*Mephitis mephitis*)

FAMILY: FELIDAE (Cats)

Bobcat (*Lynx rufus*)

Appendix C – BNLL Survey Data

BNLL SURVEY DATA, JACALITOS BRIDGE PROJECT (1955-01)

Date	Observers	Start Time	Start % Cloud Cover	Start Wind Speed (MPH)	Start Air Temp (°F)	Start Soil Temp (°F)	End Time	End % Cloud Cover	End Wind Speed (MPH)	End Air Temp (°F)	End Soil Temp (°F)	Reptiles Observed	
6-8-15	KK+SP	0720	0	2.8	78.0	77.6	0907	0	4.0	91.5	82.1	Whiptail = 13, Uta = 21	Original APE
6-9-15	KK+MJ	0736	90	2.2	85.2	84.3	0918	90	3.4	91.9	91.7	Whiptail = 9, Uta = 2	
6-10-15	KK+MJ	0805	10	3.0	82.5	85.0	1035	40	6.1	89.7	91.0	Whiptail = 20, Uta = 32	
6-11-15	KK+JH	0820	1	0.8	77.0	77.4	1040	5	1.2	85.6	81.3	Whiptail = 19 Uta = 72 Desert Spiny = 2	
6-23-15	JG+RJ	0848	2	3.5	78.4	80.0	1054	1	3.1	95.5	92.0	Whiptail = 2 Uta = 54 Desert Spiny = 1	Expanded APE
6-24-15	JG+RJ	0730	0	2.2	77.1	78.0	0935	0	4.1	94.5	101.0	Whiptail = 5 Uta = 88 Desert Spiny = 2	
6-29-15	JG+RJ	0730	50	5.1	77.0	82.0	0932	30	2.3	91.4	98.0	Whiptail = 5 Uta = 51 Desert spiny = 2	
6-30-15	JG+RJ	0650	20	1.7	83.1	86.0	0815	70	2.1	91.5	90.5	Whiptail = 2 Uta = 53 Desert spiny = 3	
7-10-15	JG+RJ	1000	35	3.3	77.4	92.0*	1200	15	6.0	94.8	107	Whiptail = 4 Uta = 47 Desert Spiny = 2	
7-13-15	JG+RJ	0945	2	2.4	79.4	98.0	1120	4	0.0	94.4	107	Whiptail = 4 Uta = 61 Desert Spiny = 1	
7-14-15	JG+RJ	0840	1	3.2	81.2	92.0	1025	2	3.6	90.6	103	Whiptail = 2 Uta = 80 Desert Spiny = 1	
7-15-15	JG+RJ	0850	0	2.4	80.5	92.0	1015	0	3.6	88.8	99	Whiptail = 4 Uta = 93 Desert Spiny = 1	
8-25-15	JG+AP	0814	0	1.0	81.0	87.0	1000	0	2.5	94.8	103	Whiptail = 2 Uta = 60 Spiny = 1	New Expanded APE
8-26-15	JG+AP	0810	25	3.4	81.7	85.0	0955	6	2.7	95.2	100	Whiptail = 1 Uta = 94	
8-31-15	JG+KK	0925	12	1.3	77.0	81.5	1125	12	3.2	93.0	97.5	Whiptail = 7 Uta = 71 Spiny = 2	
9-1-15	JG+KK	0935	0	1.1	82.0	89.0	1100	1	3.2	94.9	94.0	Uta = 109 Spiny = 1	
9-2-15	JG+KK	0935	2	6.0	81.1	85.0	1110	30	6.0	93.0	93.0	Uta = 110 Whiptail = 3 Spiny = 2	

BNLL SURVEY DATA, JACALITOS BRIDGE PROJECT

Date	Observers	Start Time	Start % Cloud Cover	Start Wind Speed (MPH)	Start Air Temp (°F)	Start Soil Temp (°F)	End Time	End % Cloud Cover	End Wind Speed	End Air Temp (°F)	End Soil Temp (°F)	Reptiles Observed
6-1-16	JG/AP	0855	0%	0	85.3	84	0925	0%	0.7	94.4	87	Uta - 6
6-17-16	JG/WF	1335	1%	1.6	89.5	94	1358	1%	0.9	93.6	100	Uta - 1
7-6-16	JG/WF	10 03	0%	0.8	81.3	86	10:34	0%	2.4	88.3	90	Uta - 3
7-13-16	JG/WF	0938	0	2.7	84.2	84	10:18	0	4.7	92.5	92	Uta - 5

Appendix D – Small Mammal Trapping Survey Data

Table 1: West Lost Hills Road Bridge Replacement on Jacalitos Creek Project Giant Kangaroo Rat Trapping Survey Results

Trap Check Date	Trap Night #	Trap Check Start Time (24hr)	Trap Check End Time (24hr)	Trap Check Start Temperature (F), Cloud Conditions, Wind Speed	Number of Traps set/ checked	No. of Heermann's Kangaroo Rat Captured		No. of California Pocket Mouse Captured		No. of San Joaquin Pocket Mouse Captured		No. of Deer Mouse Captured		Number of Traps Closed, Rolled, or Bait Stolen
						New	Recapture	New	Recapture	New	Recapture	New	Recapture	
8-May-17	1	5:30	7:50	54, mostly clear, 5 mph breeze	63	23	0	3	0	0	0	4	0	2
9-May-17	2	4:45	6:40	59, clear, 5mph breeze	63	2	14	1	1	0	0	5	2	4
10-May-17	3	4:45	6:15	56, clear, 1-2 mph breeze	63	3	13	1	2	3	0	4	3	4
11-May-17	4	4:40	7:57	61, clear and 1 mph breeze	63	1	17	3	1	0	0	1	4	4
12-May-17	5	4:45	6:30	55, partly cloudy, 5 mph gust	63	5	14	1	4	0	1	2	4	5
Total					315	34	58	9	8	3	1	16	13	19

Appendix E – Vascular Plant List

VASCULAR PLANTS OF THE STUDY AREA

The plant species listed below have been observed on the study area during 2015 and 2016 surveys conducted by Live Oak Associates, Inc. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland

AMARANTHACEAE – Amaranth Family		
Amaranthus albus	white amaranth	FACU
ASTERACEAE – Sunflower Family		
Ambrosia acanthicarpa	annual bursage	UPL
Baccharis salicifolia	mule fat	FAC
Centaurea melitensis	tocalote	UPL
Deinandra kelloggii	Kellogg's tarweed	UPL
Gutierrezia californica	California matchweed	UPL
Helianthus annuus	common sunflower	FACU
Lepidospartum squamatum	California broomshrub	FACU
Logfia filaginoides	California cottonrose	UPL
Matricaria discoidea	Pineapple weed	UPL
Senecio vulgaris	common groundsel	FACU
Stephanomeria pauciflora	wire lettuce	UPL
BORAGINACEAE – Borage Family		
Amsinckia intermedia	common fiddleneck	UPL
Amsinckia menziesii	small flowered fiddleneck	UPL
Heliotropium curassavicum	salt heliotrope	FACU
Medicago lupulina	black medic	FAC
Pectocarya penicillata	winged comb seed	UPL
Phacelia tanacetifolia	lacy phacelia	UPL
Plagiobothrys canescens	Valley popcornflower	UPL
BRASSICACEAE – Mustard Family		
Caulanthus lasiophyllus	California mustard	UPL
Hirschfeldia incana	short podded mustard	UPL
Lepidium nitidum	shinning pepper grass	FAC
Sisymbrium irio	London rocket	UPL
Sisymbrium orientale	Oriental hedge mustard	UPL
CHENOPODIACEAE – Goosefoot Family		
Atriplex polycarpha	allscale	UPL
Salsola tragus	Russian thistle	FACU

EUPHORBIACEAE – Spurge Family		
Croton setigerus	dove weed	UPL
Euphorbia ocellata ocellata	valley spurge	UPL
FABACEAE – Pea Family		
Acmispon brachycarpus	short podded lotus	UPL
Lupinus succulentus	arroyo lupine	UPL
Melilotus indicus	annual yellow sweetclover	FACU
GERANIACEAE – Geranium Family		
Erodium cicutarium	red-stemmed filaree	UPL
MALVACEAE – Mallow Family		
Malva parviflora	cheeseweed mallow	UPL
POACEAE – Grass Family		
Avena sp.	oats	UPL
Bromus diandrus	ripgut brome	UPL
Bromus madritensis ssp. *rubens*	red brome	UPL
Cynodon dactylon	Bermuda grass	FACU
Hordeum murinum ssp. *leporinum*	foxtail barley	FACU
Poa annua	annual bluegrass	FACU
Schismus sp.	schismus	UPL
Triticum aestivum	wheat	UPL
POLYGONACEAE – Buckwheat Family		
Eriogonum angulosum	anglestem buckwheat	UPL
POLEMONIACEAE – Pink Family		
Eriastrum hooveri	Hoover's eriastrum	UPL
THEMIDACEAE		
Dichelostemma capitatum	blue dicks	FACU

Appendix F – Site Photographs

Photo 1: Jacalitos Creek

Photo 2: Jacalitos Creek Flood Plain

Photo 3: Valley saltbush scrub habitat with ruderal ranch road in foreground and ruderal scraped area in background before road.

Photo 4: Valley saltbush scrub habitat with ruderal ranch road. Trees in background outside of BSA.

Photo 5: Densely vegetated area of valley saltbush scrub habitat.

Photo 6: Ruderal area.

Photo 7: Mexican free-tailed bats under existing bridge. Free tail clearly visible.

Photo 8: Crevices under existing bridge inhabited by Mexican free-tailed bats.

Appendix G – CNDDB Species List

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Kreyenhagen Hills (3612013) OR Alcalde Hills (3612024) OR Avenal (3612012) OR Coalinga (3612023) OR Curry Mountain (3612014) OR Garza Peak (3512082) OR Guijarral Hills (3612022) OR Parkfield (3512084) OR The Dark Hole (3512083))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
Ammospermophilus nelsoni Nelson's antelope squirrel	AMAFB04040	None	Threatened	G2	S2S3	
Anniella pulchra pulchra silvery legless lizard	ARACC01012	None	None	G3G4T3T4Q	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Asio otus long-eared owl	ABNSB13010	None	None	G5	S3?	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California macrophylla round-leaved filaree	PDGER01070	None	None	G3?	S3?	1B.2
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Caulanthus lemmonii Lemmon's jewelflower	PDBRA0M0E0	None	None	G3	S3	1B.2
Coelus gracilis San Joaquin dune beetle	IICOL4A020	None	None	G1	S1	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Deinandra halliana Hall's tarplant	PDAST4R0C0	None	None	G1	S1	1B.1
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Dipodomys nitratoides brevinasus short-nosed kangaroo rat	AMAFD03153	None	None	G3T1T2	S1S2	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eriastrum hooveri Hoover's eriastrum	PDPLM03070	Delisted	None	G3	S3	4.2
Eriogonum eastwoodianum Eastwood's buckwheat	PDPGN081V0	None	None	G2	S2	1B.3
Eriogonum temblorense Temblor buckwheat	PDPGN085P0	None	None	G2	S2	1B.2
Eucerceris ruficeps redheaded sphecid wasp	IIHYM18010	None	None	G1G3	S1S2	
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S1	FP
Great Valley Mesquite Scrub Great Valley Mesquite Scrub	CTT63420CA	None	None	G1	S1.1	
Lagophylla diabolensis Diablo Range hare-leaf	PDAST5J060	None	None	G2G3	S2S3	1B.2
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Layia heterotricha pale-yellow layia	PDAST5N070	None	None	G2	S2	1B.1
Lytta hoppingi Hopping's blister beetle	IICOL4C010	None	None	G1G2	S1S2	
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Lytta morrisoni Morrison's blister beetle	IICOL4C040	None	None	G1G2	S1S2	
Madia radiata showy golden madia	PDAST650E0	None	None	G2	S2	1B.1
Malacothamnus aboriginum Indian Valley bush-mallow	PDMAL0Q020	None	None	G3	S3	1B.2
Masticophis flagellum ruddocki San Joaquin coachwhip	ARADB21021	None	None	G5T2T3	S2?	SSC
Monolopia congdonii San Joaquin woollythreads	PDASTA8010	Endangered	None	G2	S2	1B.2
Navarretia nigelliformis ssp. radians shining navarretia	PDPLM0C0J2	None	None	G4T2	S2	1B.2
Onychomys torridus tularensis Tulare grasshopper mouse	AMAFF06021	None	None	G5T1T2	S1S2	SSC

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Perognathus inornatus San Joaquin Pocket Mouse	AMAFD01060	None	None	G2G3	S2S3	
Rana boylii foothill yellow-legged frog	AAABH01050	None	None	G3	S3	SSC
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Toxostoma lecontei Le Conte's thrasher	ABPBK06100	None	None	G4	S3	SSC
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 45

Appendix H – IPAC Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
FEDERAL BUILDING, 2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
PHONE: (916)414-6600 FAX: (916)414-6713

Consultation Code: 08ESMF00-2017-SLI-0388 November 30, 2016
Event Code: 08ESMF00-2017-E-00711
Project Name: Jacalitos Creek Bridge Replacement on Lost Hills Avenue

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2)

of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Jacalitos Creek Bridge Replacement on Lost Hills Avenue

Official Species List

Provided by:

Sacramento Fish and Wildlife Office
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
(916) 414-6600

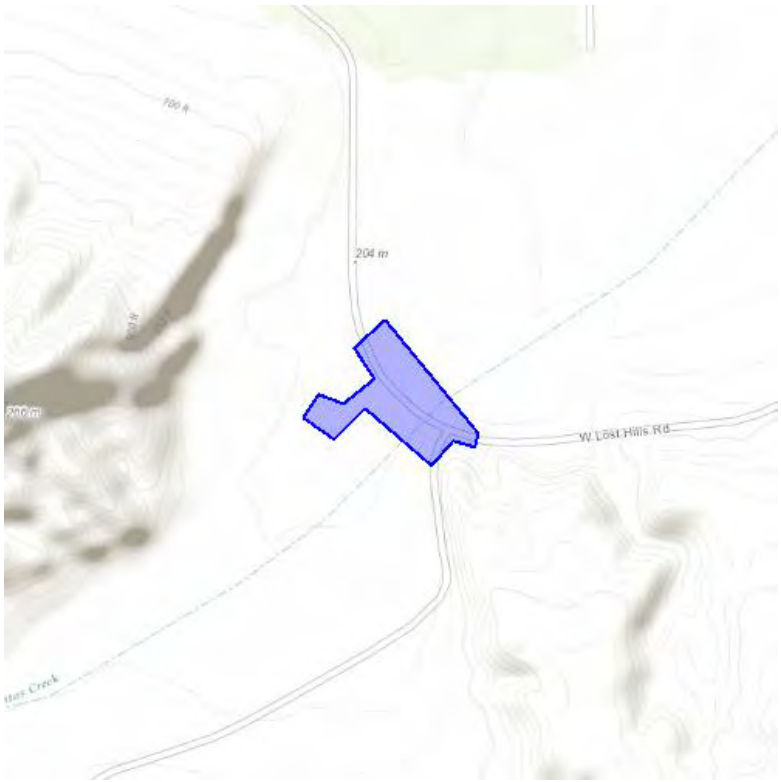
Consultation Code: 08ESMF00-2017-SLI-0388
Event Code: 08ESMF00-2017-E-00711

Project Type: TRANSPORTATION

Project Name: Jacalitos Creek Bridge Replacement on Lost Hills Avenue
Project Description: Approximately 7.7 acre site to utilized for a bridge replacement project. Permanent impacts will occur on 1.5 acres, much of which constitutes previously developed land that experiences regular disturbance from vehicle traffic and road shoulder maintenance. Temporary impacts will occur on 4.2 acres of the BSA. Project construction is anticipated to occur in the summer of 2018.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-120.31084477901459 36.10134055271534, -120.31210541725157 36.10222474933592, -120.31269013881683 36.10174364358536, -120.31328558921814 36.102068715361256, -120.31299591064452 36.10241979136851, -120.31252920627594 36.102276760591955, -120.31193375587463 36.10265817541743, -120.31232535839081 36.10314794401193, -120.31172454357147 36.10357703080226, -120.30993819236757 36.101834663818195, -120.31002402305603 36.10161361449842, -120.31043708324432 36.101704634881884, -120.31084477901459 36.10134055271534)))

Project Counties: Fresno, CA

Endangered Species Act Species List

There are a total of 10 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	**Status**	**Has Critical Habitat**	**Condition(s)**
California red-legged frog *(Rana draytonii)* Population: Wherever found	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Birds			
California condor *(Gymnogyps californianus)* Population: U.S.A. only, except where listed as an experimental population	Endangered	Final designated	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Wherever found	Threatened	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)*	Threatened	Final designated	

Population: Wherever found			
Flowering Plants			
California jewelflower *(Caulanthus californicus)* Population: Wherever found	Endangered		
San Joaquin wooly-threads *(Monolopia (=lembertia) congdonii)* Population: Wherever found	Endangered		
Mammals			
Giant kangaroo rat *(Dipodomys ingens)* Population: Wherever found	Endangered		
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard *(Gambelia silus)* Population: Wherever found	Endangered		

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Appendix I – USFWS 2011 San Jaoquin Kit Fox Guidelines

U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE

Prepared by the Sacramento Fish and Wildlife Office
January 2011

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

IS A PERMIT NECESSARY?

Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens. Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process. All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to an6y survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied and unoccupied)	Service must be contacted

*Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service**.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities. **The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.**

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe

may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.

5. No firearms shall be allowed on the project site.

6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is

disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.

12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.

13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.

14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT "A" - DEFINITIONS

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
08ESMF00-
2017-I-1863-R001

DEC 0 7 2017

Mr. Shane Gunn
Branch Chief
Caltrans District 6
855 M Street, Suite 200
Fresno, California 93721

Subject: Informal Consultation on the Jacalitos Creek Bridge Replacement on Lost Hills Road Project (06-FRE-BRLO-5942 (234)), Fresno County, California

Dear Mr. Gunn:

This letter serves as the U.S. Fish and Wildlife Service's (Service) response to your August 7, 2017 request for concurrence with the determination that the proposed Jacalitos Creek Bridge Replacement on Lost Hills Road Project (06-FRE-BRLO-5942 (234)) (Project) may affect, but is not likely to adversely affect (NLAA) the federally-listed as endangered San Joaquin kit fox (*Vulpes macrotis mutica*), giant kangaroo rat (*Dipodomys ingens*), and blunt-nosed leopard lizard (*Gambelia sila*).

The Project will entail the construction of a replacement 2-lane bridge and the placement of rock slope protection along the banks of Jacalitos Creek that will protect the integrity of the new bridge from creek erosion.

The California Department of Transportation (Caltrans) has requested initiation of informal consultation under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.)* (Act). Our response is based on the following information: (1) an initial biological assessment (BA) dated July 2017; (2) a consultation request letter dated August 7, 2017; (3) an email exchange in September 2017; (4) a phone conversation on September 11, 2017; and (5) other information available to the Service.

Project Description

The proposed Project is located at the West Lost Hills Road crossing of Jacalitos Creek approximately 3.0 miles southeast of the City of Coalinga, Fresno County. The bridge replacement project will consist of the removal of the existing bridge, construction of a temporary roadway, construction of a new bridge, and placement of rock slope protection along Jacalitos Creek. All equipment, debris, and materials will be stored on temporary staging areas. Demolition and removal of the existing bridge will be completed using heavy equipment. A low water crossing across the dry creek bed will be used to move traffic through the construction site for the duration of the project. This temporary roadway will be constructed northeast of the West Lost Hills Road and will require grading and the placement of temporary road material. The new bridge will be constructed in the footprint of the existing bridge. Construction of the new bridge will include the installation of new

footings and bridge supports, bridge deck, and guard rails. Improvements to the road way approaches will require repaving and embankment recontouring east of Jacalitos Creek Road. As part of the recontouring, rock slope protection will be placed along the banks of Jacalitos Creek to augment the existing rock slope protection and is intended to protect the integrity of the new bridge and approach roadway from creek erosion. Utility relocation is not anticipated. All construction activity will occur during daylight hours. Project activities will result in 5.6 acres of temporary impact and 1.9 acres of permanent impacts. Most of the permanent impacts will be limited to previously developed and ruderal habitat that experiences regular disturbance from vehicle traffic and road shoulder maintenance.

Protocol surveys for blunt-nosed leopard lizard were conducted in 2015 and 2016. The surveys covered 7.6 acres of the 8.0 acre Project area. Because the Project area was being refined during the survey periods, complete protocol surveys did not cover the entire Project area. However, many of the surveys covered large areas outside the current Project area boundary, providing survey coverage of the immediately surrounding lands. While the survey area shifted to accommodate the evolving Project area, the surveys covered 95% of the Project area and included all suitable habitat within the Project area. The surveys were consistent with the California Department of Fish and Wildlife's (CDFW) *Approved Survey Methodology For The Blunt-Nosed Leopard Lizard* (CDFG 2009).

A permitted biologist conducted a five-day trapping survey for giant kangaroo rat *(Dipodomys ingens)* from May 7 to 12, 2017 which followed the Service's *Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats* (March 2013). Surveys for federally listed plant species (as well as other special status plant species) were conducted within the Project area and immediately surrounding lands during the blooming period of four target species that are known to occur within similar habitats within the region.

Valley saltbush scrub was the dominant vegetation community found within the proposed Project site. This community is found on sandy soils throughout the San Joaquin Valley and is typically composed of native shrubs, non-native grasses, and forbs. Shrubs observed in this vegetation community included allscale (*Atriplex polycarpa*), California matchweed (*Gutierrezia californica*), and Russian thistle (*Salsola tragus*). Annual grasses and forbs included red brome (*Bromus madritensis* ssp. *rubens*), red-stemmed filaree (*Erodium cicutarium*), common fireweed (*Ansinckia intermedia*), Hoover's eriastrum (*Eriastrum hooveri*), California mustard (*Caulanthus lasiophyllus*), and winged comb seed (*Pectocarya penicillata*). There are 4.1 acres of valley saltbush scrub within the proposed Project area.

The bottom and lower sides of the Jacalitos Creek channel below the ordinary high water mark were sparsely vegetated with mostly native upland forbs and shrubs. Forbs in this area included annual bursage (*Ambrosia acanthicarpa*), anglestem buckwheat (*Eriogonum angulosum*), redstem filaree, and valley spurge (*Euphorbia ocellata* ssp. *ocellata*). Shrubs in this area included California broomshrub (*Lepidospartum squamatum*), California matchweed, and mule fat (*Baccharis salicifolia*). Habitat in along the channel banks and in the flood plain covers 1.2 acres within the proposed Project area.

Ruderal habitat is found along the shoulders of West Lost Hills Road, Jacalitos Creek Road, and several unpaved ranch access roads. Ruderal habitats in the proposed Project area are routinely disturbed by vehicular traffic, littering, and road maintenance. At the time of the field surveys, ruderal areas of the proposed Project area contained little to no vegetation cover. What vegetation that did occur in this area consisted of grasses and forbs found on adjacent valley saltbush scrub habitat, including wire lettuce (*Stephanomeria pauciflora*), Indian hedge mustard (*Sisymbrium orientale*), Russian thistle, and red brome. Much of the proposed Project site has experience human

disturbance. Evidence of illegal dumping, off-road vehicle use, and other recreational uses were observed on the Project site.

San Joaquin kit fox are common in saltbush scrub and non-native grassland habitat throughout the San Joaquin Valley. There is an extant population around Coalinga, and there are numerous records in the California Natural Diversity Database (CNDDB 2017) within 10 miles of the proposed Project area. The closest record is approximately 1 miles south west of the proposed Project area along Jacalitos Creek. The proposed Project area is within the Pleasant Valley satellite area identified in the *Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS 1998). No San Joaquin kit fox, dens, or sign were observed during any of the surveys within the proposed Project area. Effects on the San Joaquin kit fox as a result of the Project will be discountable and insignificant due to the small area of permanent disturbance, the lack of San Joaquin kit fox sign in the proposed Project area, and the restriction of work to daylight hours only.

The blunt-nosed leopard lizard is found in similar habitats to the San Joaquin kit fox, but generally in flatter terrain. There are several occurrences within 10 miles of the proposed Project site; the closest is approximately 2 miles to the southwest. Both the saltbush scrub and wash provide habitat for the blunt-nosed leopard lizard; however, no blunt-nosed leopard lizards were observed during protocol surveys of the proposed Project site. The protocol-level surveys covered approximately 90% of the 8 acre (3.2 hectare) Project area, which is a little more than half the size of the average male home range (5.64 hectares) and slightly larger than the average female home range (1.92 hectares) (Warrick et al. 1998). Male blunt-nosed leopard lizards share an average of 33.4% of their home range with at least one other male while females share an average of 79.8% of their home range with at least one male (Warrick et al. 1998). Core areas (the area where the animal spends the majority of its time) are much smaller than the home ranges and average 0.56 hectares for males and 0.37 hectares for females (Warrick et al. 1998). Density estimates of blunt-nosed leopard lizards on the Elkhorn Plain found between 4.35 and 16 adults/hectare and 23.9 and 35.6 hatchlings and juveniles/hectare (Germano and Williams 2005).

The above data suggests that the survey area for the Project may have overlapped at least one or more male blunt-nosed leopard territories and multiple female territories. It is possible, given the small size of the Project area that the surveys missed the core area. However, blunt-nosed leopard lizard densities in similar habitat indicate that in suitable habitat surveys are likely to encounter blunt-nosed leopard lizards if the survey area overlaps with a territory. Given these observed densities and the relatively small size of the blunt-nosed leopard lizard core areas, it is likely that if a robust population exists in and around the proposed Project area, they would have been detected during the protocol surveys. Caltrans has proposed to conduct another set of protocol-level surveys within 1 year of the start of the proposed Project that will cover the entire area; this survey will seek to confirm this data. Furthermore, Caltrans has proposed to conduct full 100% coverage transects of the proposed Project area each month for the duration of the Project. Based on the small area of permanent disturbance, the lack of blunt-nosed leopard lizard sightings, and ability of the blunt-nosed leopard lizard to continue to move through the Project area, the effects from the Project on the blunt-nosed leopard lizard will be discountable.

There are no nearby records of giant kangaroo rats in CNDDB and no giant kangaroo rats were detected during protocol surveys. The nearest CNDDB occurrences are approximately 25 miles to the northwest and 26 miles to the southeast of the proposed Project area. Although the habitat is suitable, there is no evidence that giant kangaroo rats occupy the proposed Project site. As a result, the effect of the Project on the giant kangaroo rat will be discountable.

Environmental Commitments

As part of the Project, Caltrans staff and its contractors will implement Avoidance and Minimization Measures (AMM) and Best Management Practices prior to and during construction activities to minimize and avoid effects to sensitive species. The AMM's include the following:

1. A pre-construction survey will be conducted no fewer than 14 days and no more than 30 days prior to the beginning of ground disturbance or other general construction activities that could affect the San Joaquin kit fox, blunt-nosed leopard lizard, or giant kangaroo rat. If any new dens or signs of a federally-listed species are discovered or the potential dens show signs of use, avoidance of the dens will follow the *USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance.* If a natal/pupping den is discovered within the project area or within 200-feet of the Project boundary, the Service shall be notified and, under no circumstances, should the den be disturbed or destroyed without an Incidental Take Statement.

2. Small mammal burrows will be flagged or otherwise marked and avoided by at least 10 feet.

3. All work shall occur during daylight hours.

4. Project-related vehicles shall observe a 20 mph speed limit in all project areas during construction, except on country roads and state and federal highways. Off-road traffic outside of designated project areas will be prohibited during construction.

5. All excavated steep-walled holes or trenches more than 6 inches deep will be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Areas that are covered will be inspected daily, for as long as they are covered, to ensure that no federally-listed species have become trapped despite the presence of covers. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals.

6. All small diameter construction pipes or similar structures with a diameter of 4 inches or less that are stored at a construction site shall be thoroughly inspected for federally-listed species before the pipe is subsequently buried, capped, or otherwise used or moved in any way.

7. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape.

8. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions.

9. To prevent injury or mortality of federally-listed species by dogs or cats, no pets shall be permitted on the project site during construction.

10. Use of rodenticides and herbicides in project areas will be restricted. If it is later determined that the use of rodenticides and herbicides is needed, consultation with the Service must be reinitiated.

11. All food related trash items shall be disposed of in closed containers and removed at least once a week from the project site.

12. No firearms shall be allowed on the project site.

13. A complete set of blunt-nosed leopard lizard protocol surveys following CDFW's guidelines will be conducted within 1 year of the start of the Project.

14. To ensure blunt-nosed leopard lizards do not occupy open burrows during the time between the end of the protocol surveys and the start of project construction, the protocol surveys will be timed such that the last survey will coincide with the beginning of construction. This will be accomplished by conducting the juvenile surveys during Aug/Sept 2018 and the adult surveys from April 15 to July 15, 2019. The day following the last survey-day burrows will be collapsed/filled under the direction of a Level II blunt-nosed leopard lizard biologist. Once these burrows are collapsed/filled construction activities will immediately commence. Only those burrows that will be directly impacted by the Project will be collapsed and no burrows will be collapsed if any blunt-nosed leopard lizard is observed during the protocol surveys or at any other time prior to the start of the Project.

15. All burrows not directly impacted by the Project will be avoided by a minimum of 10 feet. burrows will maintain a 10-foot buffer throughout the project.

16. A survey for blunt-nosed leopard lizards that covers that follows the methods in CDFW's guidelines will be conducted each month during Project implementation.

Conclusion

The Service concurs with your determination that the Project may affect, but is not likely to adversely affect the San Joaquin kit fox, blunt-nosed leopard lizard, and giant kangaroo rat. Our concurrence with NLAA for this Project is based on the small area of permanent impacts, short duration of the Project, lack of evidence of federally-listed species within the Project area, and environmental commitments in Caltrans' August 2017 consultation request letter and biological assessment and included above. This concludes the Service's review of the Project. No further coordination with the Service under the Act is necessary at this time. Please note, however, this letter does not authorize take of listed species. As provided in 50 CFR §402.14, initiation of formal consultation is required where there is discretionary Federal involvement or control over the action (or is authorized by law) and if: 1) new information reveals the effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this review; 2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this review; or 3) a new species is listed or critical habitat designated that may be affected by the action.

If you have questions regarding this action, please contact Tim Ludwick, Fish and Wildlife Biologist, at (timothy_ludwick@fws.gov) at (916) 414-6551 or me at the letterhead address.

Sincerely,

Patricia Cole

Patricia Cole
Chief, San Joaquin Valley Division

cc:
Craig Bailey, California Department of Fish and Wildlife, Fresno, CA

Literature Cited

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MEMORANDUM

To: Alexis Rutherford, Staff Analyst – County of Fresno Public Works and Planning

CC:

From: Jacqueline McCrory, Project Manager/Environmental Planner

Date: July 28, 2015

Re: **Jacalitos Creek Bridge Replacement Project Water Quality Assessment Memorandum / SWCA No. 33301**

INTRODUCTION

This Water Quality Assessment Memorandum was prepared in support of the Natural Environmental Study (Minimal Impact) prepared by the County of Fresno (County) for the Jacalitos Creek Bridge Replacement Project (project) in Fresno County, California (refer to Figure 1). The objectives of this technical study are to describe the existing water resources, determine if the potential impacts of the project on the water sources would be significant based on preliminary project information, and identify feasible mitigation measures to address any potentially significant impacts.

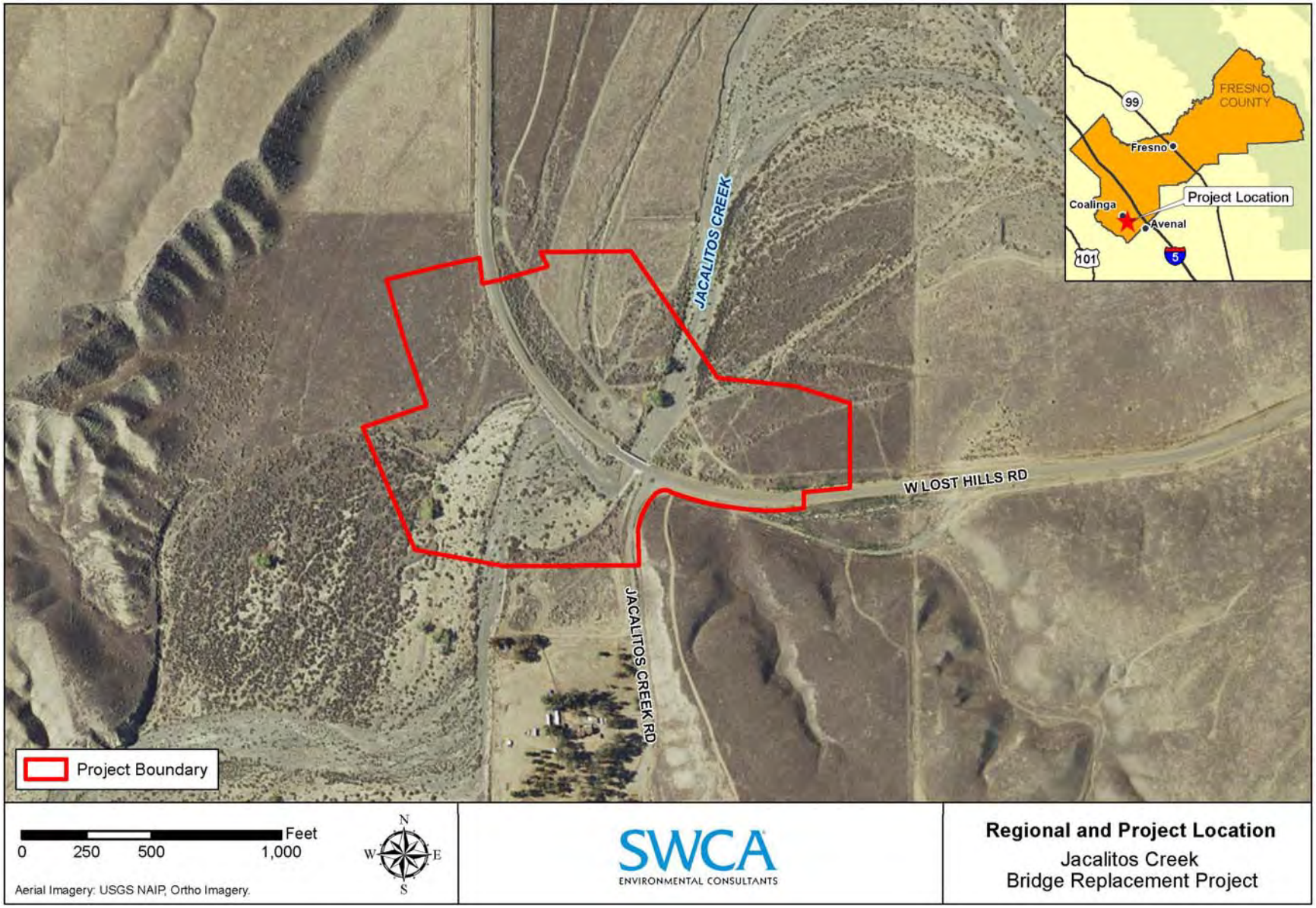
PURPOSE AND NEED

The Jacalitos Creek Bridge (Federal Project No. BRLO-5942[234], State Bridge No. 42C-0078, and County No. FRE040501) was originally constructed in 1940 and reinforced in 1962. The existing two-lane bridge is considered functionally obsolete and no longer meets the appropriate structural standards. Therefore, it is necessary for the existing bridge to be replaced with a new two-lane bridge that meets the current structural standards to ultimately improve the public safety for motorists and pedestrians who use the bridge.

PROJECT LOCATION

The proposed project is located at the Jacalitos Creek Bridge on West Lost Hills Road, immediately west of the Jacalitos Creek Road intersection, approximately 3.8 miles southeast of the city of Coalinga in Fresno County, California (refer to Figure 1). The site is located on Section 14 of Township 21 South, Range 15 East of the Mount Diablo Baseline and Meridian. The site is also located on the Kreyenhagen Hills 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle. West Lost Hills Road is a two-lane, local, rural road used by local residents and farmers accessing nearby farmland.

Figure 1. Regional and Project Location Map



PROJECT DESCRIPTION

The proposed project consists of replacing the Jacalitos Creek Bridge on West Lost Hills Road, near the city of Coalinga. The existing five-span timber structure was originally built in 1940 and two spans were reconstructed of reinforced concrete slab in 1962. The existing two-lane bridge is approximately 28 feet wide and 98 feet long with two 11-foot wide travel lanes and 2-inch-wide shoulders. The existing functionally obsolete, two-lane bridge would be replaced with a new two-lane bridge that would meet current development standards. The proposed structure would be approximately 32 feet wide and approximately 105 feet long. The proposed project may require a slight shift in the existing form of Jacalitos Creek Road at the intersection with West Lost Hills Road to accommodate an approach railing. It is anticipated that an on-site low water crossing would be used to move traffic through the site during construction activities. A right-of-way acquisition may be required; however, utility relocation would not be necessary.

The replacement bridge structure would be made up of a 2–3 foot Precast Prestressed (PC/PS) Voided composite cast-in-place concrete deck supported by 36-inch diameter cast in drilled holes (CIDH) piles and concrete barriers (Type 732). The bridge, channel, and approach work, as well as the potential right-of-way needs, would be accomplished within the proposed project footprint shown in Figure 1. Staging would occur on the roadway; therefore, it is anticipated that West Lost Hills Road would be temporarily closed during certain construction activities.

REGULATORY SETTING

Federal Regulations

National Environmental Policy Act

The National Environmental Policy Act (NEPA) was passed by Congress in 1969 as Public Law 91-190, United States Code Title 42, Sections 4321-4347 (amended by Public Law 94-52, 1975, and Public Law 94083, 1975). NEPA declares that it is the responsibility of the federal government to use all means practicable to preserve the natural, historic, and cultural resources of the nation and attain the widest range of beneficial uses of the environment without degrading the environment. Section 103 of NEPA forced action by mandating a responsibility of environmental consideration upon all federal agencies.

Clean Water Act

Several sections of the federal Clean Water Act (CWA) pertain to regulating impacts on waters of the United States. The discharge of dredged or fill material into waters of the United States is subject to permitting specified under Title IV (Permits and Licenses) of the CWA and specifically under Section 404 (Discharges of Dredge or Fill Material). Section 401 specifies additional requirements for permit review at the state level of federal permits and actions. The state also adopts water quality standards to protect beneficial uses of waters of the State under Section 303 of the CWA. Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point sources.

The permit program for placement of clean fill materials into the waters of the United States, regulated by CWA Section 404, is administered by the U.S. Army Corps of Engineers (USACE). CWA Section 401 requires that an applicant pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant obtain a water quality certification (WQC). In California, WQCs are issued by one of nine Regional Water Quality Control Boards (RWQCBs) with jurisdiction over the permitting area, in this case the Central Valley RWQCB (Region 5). Under the CWA, the RWQCB must issue a WQC for the proposed activity to be permitted under Section 404. A WQC requires the evaluation of water quality

considerations associated with dredging or placement of fill materials into waters of the United States. The proposed project would require a Nationwide Section 404 permit and a WQC. These approvals will be obtained during the final design phase.

The NPDES program is intended to control discharges of pollutants from both point and nonpoint sources, such as stormwater. The U.S. Environmental Protection Agency (U.S. EPA) has delegated NPDES permitting authority to the State Water Resources Control Board (SWRCB), as described in more detail below.

State Regulations

California Environmental Quality Act

The California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000-21174, amended Chapter 56, Statutes of 1974) was passed by the California Legislature in 1970. CEQA requires that impacts from a proposed project be analyzed and assessed to determine if environmentally significant impacts would occur. CEQA also requires that environmental impacts associated with a project, if any, be fully disclosed to decision-makers and the public. In addition, CEQA also requires a discussion of mitigation recommendations proposed to minimize the impacts of the project, and an analysis of the growth-inducing impacts of the project.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 established the SWRCB and divided the state into nine regional basins, each with a RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies.

Porter-Cologne Water Quality Control Act authorizes the SWRCB to draft state policies regarding water quality. It also authorizes the SWRCB to issue waste discharge requirements for discharges to state waters. The act requires that the SWRCB or an RWQCB adopt water quality control plans (Basin Plans) for the protection of water quality. A Basin Plan must:

- identify beneficial uses of water to be protected;
- establish water quality objectives for the reasonable protection of the beneficial uses; and,
- establish a program of implementation for achieving the water quality objectives.

These plans also provide the technical basis for determining waste discharge requirements, taking enforcement actions, and evaluating clean water grant proposals. Basin Plans are updated and reviewed every 3 years.

NPDES permits issued to control pollution must implement requirements of the Central Valley RWQCB Basin Plan. The Central Valley RWQCB is charged with enforcing NPDES permits in the region.

California Department of Transportation NPDES Permit Program

Construction activities are regulated under the NPDES Construction General Permit for Discharges of Storm Water Runoff associated with Construction Activity (Construction General Permit), provided that the total amount of ground disturbance during construction exceeds 1 acre. California Department of Transportation (Caltrans) activities are regulated by the NPDES Construction General Permit and the General Statewide NPDES Storm Water Permit and Waste Discharge Requirements (WDRs) for Caltrans (Caltrans General Permit). The Caltrans Construction General Permit (2009-0009-DWQ) would not apply to the proposed project since the project is less than 1 acre.

Central Valley Regional Water Quality Control Board

The Central Valley RWQCB is responsible for implementing the Basin Plans in the region to protect water quality. The Basin Plan identifies beneficial uses of surface and groundwater as well as water quality objectives to protect those uses. Numerical and narrative criteria are contained in the Basin Plan for several key water quality constituents, including dissolved oxygen, water temperature, trace metals, turbidity, suspended material, pesticides, salinity, radioactivity, and other related constituents.

The methods the Central Valley RWQCB uses to implement the Basin Plan criteria include issuing WDRs. WDRs may be issued to any entity that discharges waste that may affect the quality of any surface or groundwater. For discharges to waters protected under the CWA, WDRs could also serve as a federally required NPDES permit (under the CWA) and incorporate the requirements of other applicable regulations.

Local Regulations

Fresno County Municipal Code

TITLE 17 – DIVISIONS OF LAND

17.72.365: Improvements – Grading, drainage and erosion control

A. ***Grading.*** *A grading plan shall be prepared in accordance with the provisions of Chapter 15.28 of this Ordinance Code entitled "Grading and Excavation" prior to the acceptance and approval of the parcel map. The grading plan shall depict the depth and extent of all excavations and embankments which constitute changes in original grade from that shown on the approved tentative subdivision map. The exception provisions set forth in Sections 15.28.020A and B of Chapter 15.28 shall not apply to land being subdivided and permits shall be required for all grading as shown on the grading plan on such subdivided land without limitation as to quantity of fill or depth of cut unless the subdivision contains four or less parcels or the parcels being created are twenty acres or larger in size.*

B. ***Drainage.*** *The subdivider may be required to install drainage facilities to adequately remove surface and storm waters from the subdivision. When so required, installation shall conform to Table 1 as provided in Section 17.72.430.*

Pursuant to the Subdivision Map Act and Chapter 17.64 of this ordinance Code, the subdivider may be required to pay a fee as a condition of approval of a parcel map for the purpose of defraying the actual or estimated costs of planned drainage facilities for the removal of surface or storm waters from local or neighborhood drainage areas in accordance with the drainage element of the general plan.

C. ***Erosion Control.*** *The subdivider shall be required to provide erosion control for the prevention of sedimentation or damage to off-site property.*

(Ord. 520-A-15, § 33, 1975)

TITLE 15 – BUILDING AND CONSTRUCTION

15.48.080: Provisions for flood hazard reduction

In all areas of special flood hazard, the following standards are required and shall be administered by the director of the department of public works and planning or his/her designee:

A. ***Standards of Construction.***

1. ***Anchoring.***

a) All new construction, substantial improvements, including manufactured homes, and minor improvements shall be adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

2. ***Construction Materials and Methods.***

a) All new construction, substantial improvements, including manufactured homes shall use methods and practices that minimize flood damage and be constructed with flood resistant materials and utility equipment resistant to flood damage for areas below the base flood elevation.

b) Electrical Requirements. Except in watertight basements, all electrical wiring below the flood elevation shall be in a watertight conduit or approved direct burial cable and all electrical equipment below the base flood elevation shall be approved for use under water.

e) Methods. All new construction and substantial improvements below the base flood elevation shall utilize methods and practices that minimize flood damage.

f) Materials. All materials utilized in a structure below the base flood elevation shall be only with flood resistant materials.

h) Exception. Minor improvements of any structure shall meet the above standards beginning at and extending below the bottom of the structure.

3. ***Elevation and Floodproofing.***

b) Nonresidential Construction. All new construction or substantial improvements of any structure shall have the lowest floor, including basement:

i) Elevated a minimum of six inches above the base flood elevation.

iii) In an A Zone, without base flood elevations (BFEs) specified on the flood insurance rate map (FIRM), elevated to or above the base flood elevation as determined in Section 15.48.050 or Section 15.48.070.B.3.

iv) When an existing structure is remodeled, reconstructed or added to and such work is classified as substantial improvements, the entire existing structure shall be modified to comply with the base flood elevation requirements of the applicable zone.

v) Upon completion of the structure, the elevation of the lowest floor, including basement, shall be certified by a registered civil engineer or licensed surveyor, that elevation

requirements have been met. Such certifications shall be provided to the floodplain administrator as forth in Section 15.48.070.B.4.a, prior to the final inspection of the structure.

vi) As an alternative, together with attendant utility and sanitary facilities, new construction or substantial improvements shall conform to the following:

(a) Be floodproofed so that below an elevation six inches above the base flood elevation the structure is watertight with walls substantially impermeable to the passage of water; structures in A Zones, without base flood elevations (BFEs) specified on the flood insurance rate map (FIRM), must be floodproofed to the base flood elevation, as determined in Section 15.48.050 or Section 15.48.070.B.3, and are exempted from the six-inch increase stated herein;

(b) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and

(c) Be certified by a registered civil engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of this subsection are satisfied. Such certifications shall be provided to the floodplain administrator as set forth in Section 15.48.070.B.4, prior to final inspection of the structure.

vii) A variation for the lowest floor to be below the base flood elevation and watertight construction is not desired or feasible, new construction or substantial improvements shall conform to the following:

(a) Provide flood openings that comply with Section 15.48.080.A.3.c;

(c) Be certified by a registered civil engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of this subsection are satisfied. Such certifications shall be provided to the floodplain administrator as set forth in Section 15.48.070.B.4, prior to final inspection of the structure.

PHYSICAL SETTING

Land Use

The project site is located approximately 3.8 miles southeast of the city of Coalinga in a rural area of unincorporated Fresno County. The Jacalitos Creek Bridge is located on the portion of West Lost Hills Road that crosses Jacalitos Creek, surrounded by open space, cattle grazing, and agricultural lands, approximately 0.65 mile south of the nearest active agricultural production field and approximately 0.16 mile north of the nearest of three low-density single-family residences located on Jacalitos Creek Road.

The Jacalitos Creek drainage generally runs in a southwest-northeast direction and is sparsely vegetated. Approximately 1,354 acres of land along Jacalitos Creek in the vicinity of the Jacalitos Creek Bridge is owned by Wildlands Inc. and is protected as a mitigation bank (Tulare Basin Wildlife Partners [TBWP] 2009).

Surrounding lands are identified by the County as having an Agriculture/Open Space land use designation in the Fresno County General Plan (County of Fresno 2000). These lands are also zoned as Exclusive Agriculture, 20-acre minimum (AE-20), which designates land protected for farming by permitting agricultural uses only and preserving agricultural lot sizes. Characteristic uses permitted in this zoning district include farming, livestock, processing of agricultural products, ag-related businesses, and labor camps with a minimum parcel size of 20 acres.

Topography

Elevation in this area is generally flat, ranging from an elevation of approximately 667 feet above mean sea level (msl) at the western side of the bridge to approximately 671 feet above msl at the eastern side of the bridge, along West Lost Hills Road.

Precipitation and Climate

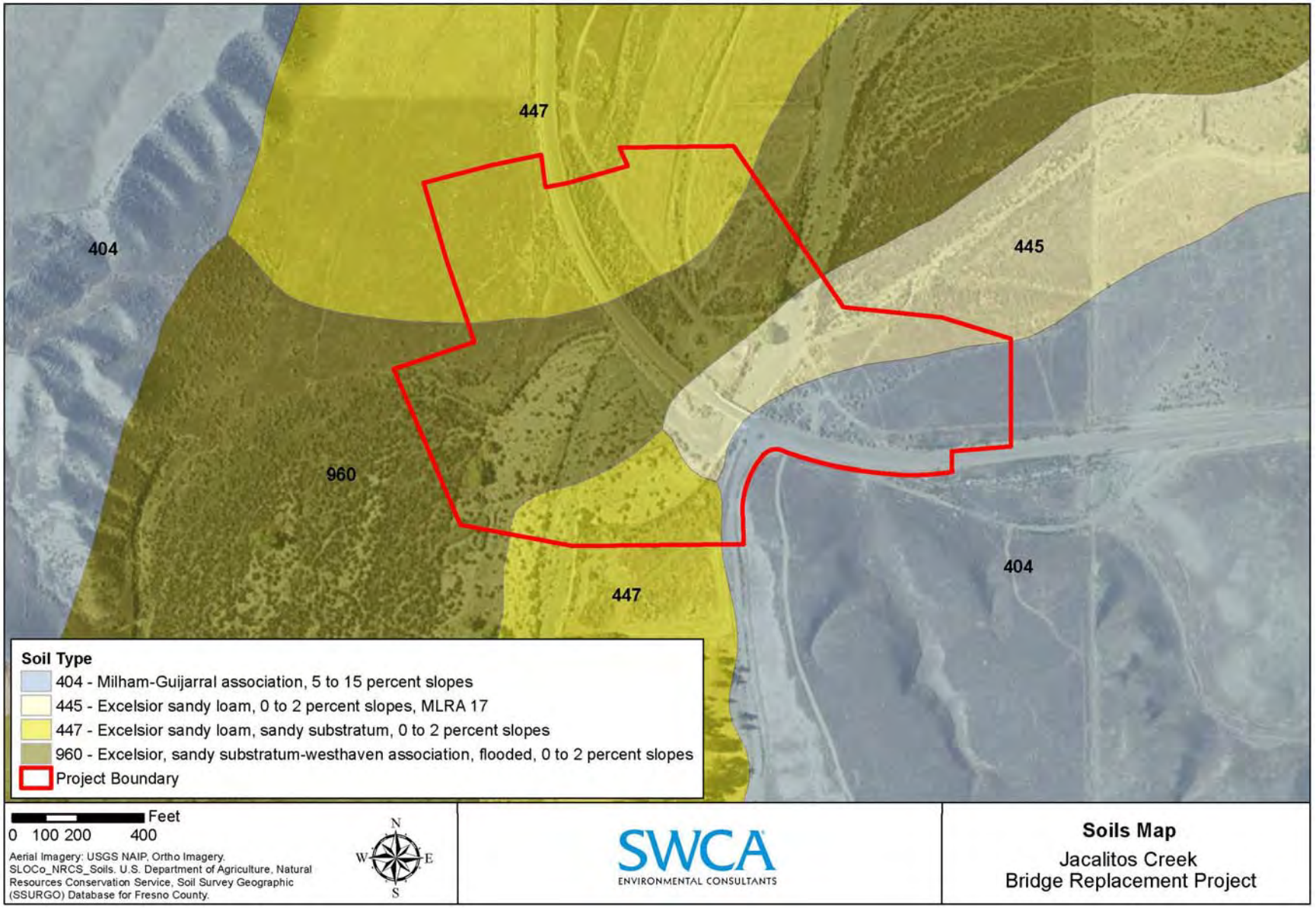
Fresno County encompasses more than 6,000 square miles near the center of California's San Joaquin Valley. The county is subject to a Mediterranean climate with hot and dry summer seasons and moderate temperatures with light precipitation during the winter seasons. The average temperatures in this area between January 1, 1948, and January 20, 2015, ranged from a low of 37.3 degrees Fahrenheit (°F) during the month of December to a high of 98°F during the month of July (Western Regional Climate Center [WRCC] 2015). The average annual precipitation in this area between January 1, 1948, and January 20, 2015, was 10.89 inches, with the greatest average rainfall recorded as 2.09 inches during the month of January (WRCC 2015).

Geology and Soils

The project site is not immediately located in a seismically active area likely to experience ground shaking as a result of earthquakes on existing faults. However, there are seismically active faults located in the vicinity of the project site. The San Andreas Fault is located approximately 17 miles west of the project site and the Nuñez Fault is located approximately 11 miles northwest of the project site. Both faults have been active within the last 150 years (USGS 2015).

The project site is located in a rural area surrounded by open space and active agricultural land uses in Fresno County. The average elevation within the project footprint is approximately 669 feet above msl. As shown in Figure 2, the project site is underlain by multiple soil types, each of which, are discussed below. Soil information was obtained from the U.S. Department of Agriculture's Natural Resources Center (NRCS 2015).

Figure 2. Soils Map



Milham-Guijarral association (Map Unit 404), 5 to 15 percent slopes

This well-drained soil is derived from alluvium from calcareous sedimentary rock. This soil is typically found on shoulders and side slopes of fan remnants. The soil is extremely sandy, with a typical profile consisting of 0 to 6 inches of sandy loam, 6 to 31 inches of sandy clay loam, and 31 to 60 inches of sandy loam. The depth to the water table is typically greater than 80 inches.

Excelsior sandy loam (Map Unit 445), 0 to 2 percent slopes, MLRA 17

This well-drained soil is derived from calcareous coarse-loamy alluvium from sedimentary rock. This soil is typically found on treads and footslopes of alluvial fans. The soil is extremely sandy, with a typical profile consisting of 0 to 72 inches of sandy loam. The depth to the water table is typically greater than 80 inches.

Excelsior sandy loam, sandy substratum (Map Unit 447), 0 to 2 percent slopes

This well-drained soil is derived from alluvium from calcareous sedimentary rock. This soil is typically found on treads and footslopes of alluvial fans. The soil is extremely sandy, with a typical profile consisting of 0 to 23 inches of sandy loam, 23 to 53 inches of stratified loamy sand to silt loam, and 53 to 72 inches of loamy sand. The depth to the water table is typically greater than 80 inches.

Excelsior, sandy substratum-westhaven association (Map Unit 960), flooded, 0 to 2 percent slopes

This well-drained soil is derived from alluvium from calcareous sedimentary rock. This soil is typically found on treads, footslopes, and toeslopes of alluvial fans and floodplains. The soil is sandy with a typical profile consisting of 0 to 23 inches of sandy loam, 23 to 53 inches of stratified loamy sand to silt loam, and 53 to 72 inches of loamy sand. The depth to the water table is typically greater than 80 inches.

Surface Waters

The project site is located within the Tulare Lake Bed Watershed in Fresno County (Hydrologic Unit Code: 18030012). The existing bridge is located above, and drains to, Jacalitos Creek (Hydrologic Unit Code: 180300120403). The watershed for Jacalitos Creek encompasses approximately 64 square miles. The stream course of Jacalitos Creek consists of a wide, naturally meandering, braided channel pattern generally extending in a southwest-northeast direction (USACE Class: dun-ripple/meandering-braided [D/MA-BR]). Jacalitos Creek is considered a low-elevation ephemeral stream with headwaters beginning in the coastal range and flowing northeasterly into Pleasant Valley to the east of the city of Coalinga, through the project site, and eventually into Los Gatos Creek approximately 4.1 miles downstream from the Jacalitos Creek Bridge.

Jacalitos Creek is a seasonal stream that only transmits water following substantial rainfall during the wet season; typically, there is no water present within the Jacalitos Creek channel during the dry season, especially after a year of average or below-average rainfall. Peak water flows of Jacalitos Creek have been estimated at 1,000 cubic feet per second (cfs) during a 10-year event, 4,350 cfs during a 100-year event, and 8,390 cfs during a 500-year event, with approximately 12% total runoff (TBWP 2009). In March of 1995, Jacalitos Creek combined with three additional seasonal creeks that feed the Arroyo Pasajero watershed, creating a powerful flood event that scoured bridge pilings throughout the area and even resulted in the collapse of twin bridges crossing Interstate 5 near Gale Avenue, killing four people (Federal Emergency Management Agency [FEMA] 1995).

Generally, there is little to no vegetation in the vicinity of the Jacalitos Bridge. The riparian corridor is slightly more developed approximately 1.3 miles northeast of the Jacalitos Bridge. The quality of the water from Jacalitos Creek is considered moderate to good. Jacalitos Creek is not listed as a Section 303(d) impaired water; however, due to the ephemeral nature and braided channel pattern of the watercourse, water quality in this stream is considered highly sensitive to changes in sediment and water discharge and could significantly change from season to season.

The U.S. Department of Transportation's Federal Highway Administration (FHWA) conducted a stream channel stability study at bridges in physiographic regions in 2006 and evaluated the Jacalitos Creek channel. The results of this study, including the indicator and rating descriptions, are provided in Table 1.

Table 1. Stream Channel Stability Ratings for Jacalitos Creek

Stability Indicator	FWHA Rating for Jacalitos Creek[1]
Watershed and floodplain activity and characteristics	**Fair (9):** Frequent disturbances in the watershed, including cattle activity, landslides, channel sand or gravel mining, logging, farming, or construction of buildings, roads, or other infrastructure. Urbanization over significant portion of watershed.
Flow habit	**Poor (12):** Extremely flashy; flash floods prevalent mode of discharge; ephemeral stream other than first-order stream
Channel pattern	**Poor (10):** Braided; primarily bed load; engineered channel that is not maintained.
Entrenchment/channel confinement	**Fair (7):** Moderate confinement in valley or channel walls; some exposure of infrastructure; terraces exist; flood plain abandoned; levees are moderate in size and have minimal setback from the river
Bed material	**Poor (11):** Very loose assortment with no packing. Large amounts of material < 4 millimeters. Fs^2 > 70%
Bar development	**Fair (8):** For S < 0.02 and w/y > 12, bar widths tend to be wide and composed of newly deposited coarse sand to small cobbles and/or may be sparsely vegetated. Bars forming for S > 0.02 and w/y < 12
Obstructions, including bedrock outcrops, armor layer, large woody debris (LWD) jams, grade control, bridge bed paving, revetments, dikes or vanes, riprap	**Excellent (3):** Rare or not present
Bank soil texture and coherence	**Poor (11):** Loamy sand to sand; non-cohesive material; unconsolidated mixtures of glacial or other materials; layers or lenses that include non-cohesive sands and gravels
Average bank slope angle (where 90° is a vertical bank)	**Fair (8):** Bank slopes to 1H:1V (45E) in non-cohesive or unconsolidated materials to 0.6:1 (60E) in clays common on one or both banks
Vegetative or engineered bank protection	**Poor (10):** Woody vegetation band may vary depending on age and health with less than 50% plant density and cover. Primarily soft wood, piney, coniferous trees with very young, old and dying, and/or monostand vegetation located off the bank. Woody vegetation oriented at less than 70E from horizontal with extensive root exposure. No lining or armoring of banks.
Bank cutting	**Good (6):** Some intermittently along channel bends and at prominent constrictions. Raw banks comprise minor portion of bank in vertical direction.

Table 1. Stream Channel Stability Ratings for Jacalitos Creek

Stability Indicator	FWHA Rating for Jacalitos Creek[1]
Mass wasting or bank failure	**Fair (7):** Evidence of frequent and/or significant occurrences of mass wasting that can be aggravated by higher flows, which may cause undercutting and mass wasting of unstable banks. Channel width quite irregular, and scalloping of banks is evident.
Upstream distance to bridge from meander impact point and alignment	**Fair (8):** 10–20 meters; bridge is skewed to flow, or flow alignment is otherwise not centered beneath bridge.
Rating Total	**Fair (110)**

[1] Ratings: Excellent (1-3); Good (4-6); Fair (7-9); Poor (10-12)
[2] Fs: approximate portion of sand in the bed
Source: FWHA 2006.

Based on the results shown in Table 1, the Jacalitos Creek received an overall braided channel stability ranking of 110, which is considered fair (FWHA 2006).

Groundwater

The project site is located within the western portion of the San Joaquin Valley Groundwater Basin, in the Pleasant Valley Subbasin (Basin Number 5-22.10). The Pleasant Valley Subbasin encompasses approximately 146,000 acres (227 square miles) within Fresno and Kings Counties (California Department of Water Resources [DWR] 2010). Several small, ephemeral streams, originating in the surrounding mountains, pass through the Pleasant Valley Subbasin. These streams include Jacalitos Creek as well as the Avenal, Los Gatos, Warthan, and Zapato Chino Creeks. Average annual precipitation within the Subbasin ranges from 7 to 9 inches (DWR 2010).

The Pleasant Valley Subbasin is underlain by Holocene alluvium, the Plio-Pleistocene Tulare Formation, and potentially the upper portion of the San Joaquin Formation. As of 2010, the total storage capacity of the Pleasant Valley Subbasin was estimated to be approximately 14,100,000 acre feet (af), assuming an average thickness of 1,150 feet, a specific yield of 8.4%, and an area of approximately 146,000 acres (DWR 2010). The depth of the water storage is estimated to be approximately 1,000 feet below ground surface (bgs). Groundwater recharge within this subbasin occurs in the form of seepage from the various ephemeral streams that extend through the subbasin. Additionally, recharge may occur as a result of municipal imported water use in the cities of Coalinga and Avenal. Currently, no quantitative data exists for subsurface inflow or outflow for the Pleasant Valley Subbasin; however, applied water recharge is estimated to be 4,000 acre feet per year (afy). Estimated extractions include urban pumping at a rate of approximately 5,700 afy, agricultural pumping at a rate of approximately 90,000 afy, and extractions associated with the oil industry at a rate of approximately 8,830 afy (DWR 2010).

Groundwater within the Pleasant Valley Subbasin was estimated to have total dissolved solids (TDS) concentrations ranging from 1,000 to 3,000 milligrams per liter (mg/L) with an average of 1,500 mg/L. The constituents in the groundwater include bicarbonates, boron, calcium, chlorides, magnesium, sodium, and sulfates. Due to the high TDS concentrations, groundwater use is generally limited to agricultural water supply and industrial uses (DWR 2010).

Based on the results of the Phase I Initial Site Assessment prepared by Haro Environmental, there is one groundwater well located within a 0.25-mile radius of the project area, approximately 1,000 feet southeast

of the Jacalitos Creek Bridge (Haro Environmental 2015). The depth of this well is unknown. There are no groundwater wells located within the project area.

Floodplain

According to FEMA flood maps (Map Number 06019C3400H, February 18, 2009), the project site is located within a 100-year floodplain of Jacalitos Creek (FEMA 2009). The project site is located within special flood hazard areas designated as Zone A (No Base Flood Elevations Determined) and Zone X (Areas of 0.2% annual chance of flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance of flood). Construction within the 100-year floodplain may require coordination with FEMA.

IMPACTS

Water Quality/Hydrology

The proposed project would directly affect the creek bed of the Jacalitos Creek channel due to the removal of the existing bridge and piers and construction of piers for the new bridge. Potential effects of the proposed project related to water quality are limited to construction-related impacts such as erosion, sedimentation, and the potential release of hazardous construction-related materials. Grading activities could result in sedimentation of Jacalitos Creek if water is present; however, it is unlikely considering construction activities are expected to occur during the dry season (July 1 through October 15). Considering the fact that surface water is typically not present within Jacalitos Creek during the dry season of years with average or below-average rainfall, it is not likely that water would be present within Jacalitos Creek during the dry season. Therefore, dewatering is not expected to be necessary for implementation of the proposed project. If construction activities within the creek are anticipated to occur outside of the dry season during a year with above-average rainfall, it is possible that surface flow may be present and dewatering may be required.

The proposed project could introduce potential sources of pollution in the form of improper use of fuels, oils, and other construction-related hazardous waste materials, which could pose a threat to surface or groundwater quality. Therefore, the County would adhere to erosion control standards and hazardous materials spill pollution and prevention standards to ensure the proposed project does not impact the water quality of the Jacalitos Creek or groundwater resources.

As proposed, the new bridge would be approximately 4 feet wider and 7 feet longer than the existing structure, resulting in an approximately 0.01-acre (420-square-foot) increase in impervious surface. Operation of the proposed project could potentially result in long-term impacts to water quality due to pollutants entering Jacalitos Creek through stormwater runoff. Increased concentrations of pollutant discharge from the road surface during storm events could impact local water bodies if they are transmitted to Jacalitos Creek when water is present. Additionally, uncontrolled water flow from the surface of the roadway could cause erosion that could alter stream geomorphology and cause gullies. However, based on the project design, permitting, site-specific conditions of this project, and implementation of proposed mitigation, the potential long-term impacts to water quality are not considered adverse.

For general construction activities, the proposed project would be required to comply with a NPDES General Construction Permit to discharge stormwater associated with construction activities. Additionally, the project would be required to prepare a stormwater pollution prevention plan (SWPPP) that addresses the quality and quantity of stormwater runoff generated on-site during construction and operation of the project, and incorporates temporary best management practices (BMPs) into the project.

Implementation of temporary BMPs would minimize impacts to water quality that could occur as a result of construction of the proposed project.

Groundwater

Construction activities associated with the proposed project such as trenching and excavation could disturb the groundwater table, rendering groundwater exposed to potential contamination. Implementation of temporary BMPs would minimize potential impacts of the project from contributing to the impairment of groundwater.

Floodplain

The proposed project is located within the 100-year floodplain of Jacalitos Creek; however, construction of the new bridge would not impede or redirect flood flows or reduce the capacity of Jacalitos Creek or increase the boundaries of the existing 100-year floodplain. Additionally, the Jacalitos Creek Bridge replacement would be designed to be capable of withstanding the 100-year flood.

MITIGATION

The proposed project would be required to comply with Title III and Title IV of the CWA and NPDES standards during and post construction. Compliance with the NPDES General Construction Permit would require the contractor to file a Notice of Construction with the Central Valley RWQCB prior to construction. During construction, water pollution control measures shall conform to the requirements in the SWPPP, the Water Pollution Control Program Preparation Manual, and the Construction Site Best Management Practices Manual. BMPs fall into four categories as identified by the Caltrans Statewide Stormwater Management Plan: Design Pollution Prevention, Treatment, Construction Site, and Maintenance. The project contractor must prepare a SWPPP that includes the identification and implementation of applicable BMPs to control erosion and to ensure that dirt, construction materials, pollutants, or other human-associated materials are not discharged from the project area into surrounding surface waters or into areas that would eventually flow into storm drains. Upon completion of construction activities, a Notice of Completion of Construction would be filed with the Central Valley RWQCB. The temporary BMPs, included as part of the proposed project, shall be implemented in compliance with the Central Valley RWQCB, Caltrans stormwater standards, and the County's stormwater standards. Prior to grading, an appropriate drainage control plan that includes control measures for handling construction and operation on-site and off-site runoff and drainage in a manner acceptable to the Central Valley RWQCB, Caltrans, and the County.

In addition to the standard BMPs required for compliance with the NPDES to be included as part of the proposed project, the following measures shall be incorporated to further minimize the potential for impacts to water quality associated with the proposed project.

WQA-1 Prior to commencement of construction activities, the contractor shall prepare a hazardous material spill prevention control and countermeasure plan that will minimize the potential for and the effects of the release of hazardous or toxic materials during construction of the proposed project. The plan shall include storage and containment procedures to prevent and respond to spills, and shall identify the appropriate parties responsible for monitoring the spill response. During construction of the proposed project, any spills that occur shall be remedied immediately according to the guidance provided in the spill prevention control and countermeasure plan. The County and Caltrans shall review and approve the spill prevention control and countermeasure plan prior to allowing construction to begin.

WQA-2 Once construction activities are complete, disturbed areas shall be re-vegetated with similar plant vegetation, pre-approved by the County, to stabilize soils and establish a natural system for erosion control. In addition, a 5-foot vegetated buffer consisting of native upland plant species should be planted to treat roadway runoff before it enters the channel below. Sediment controls, potentially consisting of fiber rolls, may also be implemented.

The County and Caltrans shall routinely inspect the project site during construction activities, at their respective discretion, to verify that BMPs specified in this memorandum are properly implemented and maintained. The County/Caltrans shall notify the contractor immediately if there is a non-compliance issue and shall require compliance.

REFERENCES

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DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

September 13, 2016

Regulatory Division (SPK-2016-00480)

County of Fresno
Attn: Ms. Alexis Rutherford
2220 Tulare Street
Fresno, California 93721

Dear Ms. Rutherford:

We are responding to your July 21, 2016 request for a preliminary jurisdictional determination (JD), in accordance with our Regulatory Guidance Letter (RGL) 08-02, for the Jacalitos Creek Bridge Replacement project. The approximately 23-acre project site is located on Jacalitos Creek, Latitude 36.1024°, Longitude -120.3109°, near Coalinga, Madera County, California.

Based on available information, **we concur with the amount and location of other water bodies on the site as depicted on the enclosed October 9, 2015 *Jacalitos Creek Bridge Potential Waters of the U.S.* drawing prepared by Live Oak Associates, Inc**. The approximately 2.06 acres of other water bodies present within the survey area are potential waters of the United States regulated under Section 404 of the Clean Water Act.

We have enclosed a copy of the *Preliminary Jurisdictional Determination Form* for this site. Please sign and return a copy of the completed form to this office. Once we receive a copy of the form with your signature we can accept and process a Pre-Construction Notification or permit application for your proposed project.

You should not start any work in potentially jurisdictional waters of the United States unless you have Department of the Army permit authorization for the activity. You may request an approved JD for this site at any time prior to starting work within waters. In certain circumstances, as described in RGL 08-02, an approved JD may later be necessary.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This preliminary determination has been conducted to identify the potential limits of wetlands and other water bodies which may be subject to Corps of Engineers' jurisdiction for the particular site identified in this request. A Notification of Appeal

Process and Request for Appeal form is enclosed to notify you of your options with this determination. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

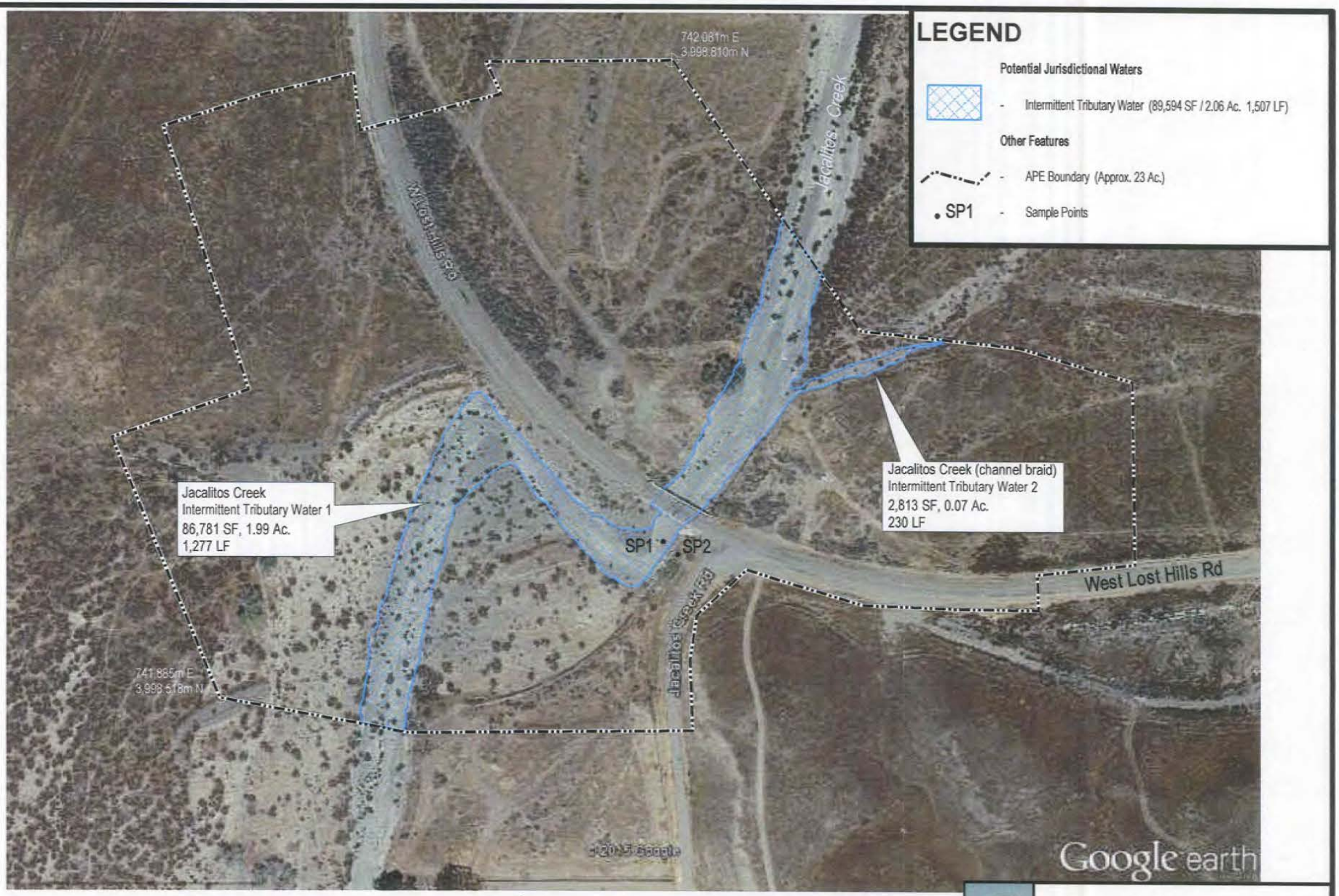
Please refer to identification number SPK-2016-00480 in any correspondence concerning this project. If you have any questions, please contact Noah Fulmer at U.S. Army Corps of Engineers, Regulatory Division, California South Branch, 1325 J Street, Room 1350, Sacramento, California 95814-2922, by email at *Noah.J.Fulmer@usace.army.mil*, or telephone at 916-557-7094. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Sincerely,

Kathleen A. Dadey, PhD
Chief
California South Branch

Enclosures

cc: (w/o encls)
Ms. Elizabeth Lee, Storm Water and Water Quality Certification Unit, Central Valley Regional Water Quality Control Board (5S), 11020 Sun Center Drive #200, Rancho Cordova, California 95670-6289 ; Elizabeth.lee@waterboards.ca.gov
Ms. Tina Bartlett, California Department of Fish and Wildlife, Region 2, 1701 Nimbus Drive, Rancho Cordova, California 95670-4599; tina.bartlett@wildlife.ca.gov
Mr. Elmer Llamas, Caltrans District 6, Environmental Planner, Biologist, Elmer.Llamas@dot.ca.gov
Mr. Thomas Leeman, U.S. Fish and Wildlife Service, Sacramento Office, thomas_leeman@fws.gov



LEGEND

Potential Jurisdictional Waters

- Intermittent Tributary Water (89,594 SF / 2.06 Ac. 1,507 LF)

Other Features

- APE Boundary (Approx. 23 Ac.)
- SP1 - Sample Points

500' 0 500 feet

Approximate Scale
1' = 200'

Source:
Aerial Photograph Courtesy of Google Earth, 5/2/2015
Universal Transverse Mercator Coordinate System Zone 10, NAD83 / NAVD 1988

Live Oak Associates, Inc.

Jacalitos Creek Bridge
Potential Waters of the U.S.

Date	Project #	Figure #
10/09/2015	1955-01	4

PRELIMINARY JURISDICTIONAL DETERMINATION FORM
Sacramento District

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Regulatory Branch: **California South** File/ORM #: **SPK-2016-00480** PJD Date: **September 13, 2016**

State: **CA** City/County: **Near Coalinga, Fresno County**
Nearest Waterbody: **Jacalitos Creek**
Location (Lat/Long): **36.1024°, -120.3112°**
Size of Review Area: **20.6** acres

Name/Address Of Property Owner/ Potential Applicant: **County of Fresno**
Attn: Ms. Alexis Rutherford
2220 Tulare Street
Fresno, California 93721

Identify (Estimate) Amount of Waters in the Review Area
Non-Wetland Waters:
linear feet ft wide **2.06** acre(s)
Stream Flow: **Intermittent**

Wetlands: acre(s)
Cowardin Class: **N/A**

Name of any Water Bodies Tidal:
on the site identified as
Section 10 Waters: Non-Tidal:

☒ Office (Desk) Determination
☐ Field Determination:
Date(s) of Site Visit(s):

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply – checked items should be included in case file and, where checked and requested, appropriately reference sources below)

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **October 10, 2015 Jacalitos Creek Bridge Potential Waters of the U.S. drawing prepared by Live Oak Associates, Inc**
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Data sheets prepared by the Corps.
☐ Corps navigable waters' study.
☐ U.S. Geological Survey Hydrologic Atlas:
  ☐ USGS NHD data.
  ☐ USGS HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; CA-KREYENHAGEN HILLS**
☐ USDA Natural Resources Conservation Service Soil Survey.
☐ National wetlands inventory map(s).
☐ State/Local wetland inventory map(s).
☐ FEMA/FIRM maps.
☐ 100-year Floodplain Elevation (if known):
☒ Photographs: ☒ Aerial
  ☒ Other
☐ Previous determination(s). File no. and date of response letter:
☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Nah Fulm 9/13/2016
Signature and Date of Regulatory Project Manager (REQUIRED)

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: County of Fresno, Attn: Ms. Alexis Rutherford	File No.: SPK-2016-00480	Date: September 13, 2016
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at *http://www.usace.army.mil/cecw/pages/reg_materials.aspx* or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Noah Fulmer
Regulatory Division
U.S. Army Corps of Engineers
Phone: 916-557-7094, FAX 916-557-7803
Email: Noah.J.Fulmer@usace.army.mil

If you only have questions regarding the appeal process you may also contact:

Thomas J. Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
1455 Market Street, 2052B
San Francisco, California 94103-1399
Phone: 415-503-6574, FAX 415-503-6646)
Email: Thomas.J.Cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		